D.N.R.COLLEGE (AUTONOMOUS)

(Reaccredited at the "B++" Level by NAAC & A College with Potential for Excellence)
(Affiliated to Adikavi Nannaya University, Rajahmahendravaram)
BHIMAVARAM – 534202
ANDHRA PRADESH

BOARD OF STUDIES MEETING – 2021-2022
Skills Development Courses
COURSE – II – BUSINESS COMMUNICATION
DEPARTMENT OF ENGLISH

D.N.R.College (Autonomous), Bhimavaram
Department of English
Board of Studies Meeting 2021-2022 / 15-11-2021
MEMBERS OF THE BOARD OF STUDIES 2020-2021
Attendance

MinutesofBoardofStudiesmeetingofEnglishheldon15-09-2020 at10:00 A.M through Online. D.N.R.College, Bhimavaram.

SL.NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1.	Mrs. T.S.K.Sirisha HOD of English Department D.N.R.College (A), Bhimavaram.	Chairman	T.S.Kattisha
2.	Mrs.P.Jyothi Kiran Lecturer in English D.N.R.College (A), Bhimavaram	Member	P.Jyothi Kiran
3.	Mrs.T.Reavthi Lecturer in English D.N.R.College (A), Bhimavaram	Member	T R
4.	Ms.J.B.Manoja Devi Lecturer in English D.N.R.College (A), Bhimavaram	Member	J. B. M. Devi
5.	Mrs.T.Kanaka Lakshmi Lecturer in English D.N.R.College (A), Bhimavaram	Member	T.kanakalakshmi
6.	Mrs.Dr.D.Jyothirmai Associate Professor Department of English Adikavi Nannaya University, Rajahmundry.	University Nominee	Through Online
7.	Sri.G.D.Srinivasa Rao Lecturer in English ASNM College(A), Palkol W.G. Dist	Subject Expert	Through Online
8.	Sri.Dr.Ch.Sampath Kumar HOD of English Department KGRL College (A), Bhimavram.	Subject Expert	Through Online
9.	Sri.M.V.Subba Raju Retd. Lecturer in English D.N.R.College (A), Bhimavaram	Alumni Member	Through Online
10.	Sri.CH.V.Prasada Rao Retd. HOD of English D.N.R.College (A), Bhimavaram	Special Invitee	Through Online
11.	J.Pradeep B A (SEP) Roll No: 102 D.N.R.College (A), Bhimavaram	Student Representative	Through Online

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.A., B.Sc., B.Com., Degree Courses
At the end of the Second Semester
Revised Choice Based Credit System (w.e.f. 2020-2021)
BUSINESS COMMUNICATION
DEPARTMENT OF ENGLISH
BOARD OF STUDIES MEETING

Minutes of Board of Studies meeting of English held on 15-09-2020 at 10:00 A.M through Online. D.N.R.College, Bhimavaram.

AGENDA

Subject 1	:	To review and continue the **BUSINESS COMMUNICATION** as Skill Development Course - II for 2nd Semester in 1st year B.A. / B.Sc./B.Com. programmes under revised RCBCS from the academic year 2020-21 onwards
Subject 2	:	To review and continue the syllabus for Skill Development Course - II **BUSINESS COMMUNICATION** for 2nd Semester in B.A./B.Sc./B.Com. programmes under revised RCBCS for adoption and implementation from the academic year 2020-21 onwards.
Subject 3	:	To review and continue the model question paper, Blue print and structure of question Paper for the Skill Development Course - II **BUSINESS COMMUNICATION** for 2nd Semester in B.A/B.Sc./B.Com programmes under revised RCBCS from the academic year 2020-21 onwards.
Subject 4	:	To review and continue the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for the Skill Development Course -II, **BUSINESS COMMUNICATION** , for 2nd Semester in B.A/B.Sc./B.Com programmes under revised RCBCS for adoption and implementation from the academic year 2020-21 onwards.
Subject 5	:	To review and continue the list of recommended text books and reference books which are listed at the end of the syllabi of the respective Skill Development Course - II **BUSINESS COMMUNICATION**
Subject 6	:	Any other matter with the permission of chairman, board of studies.

Signature of the Members:

S.No	Signatures of the Members	S.No.	Signatures of the Members
1		7	
2	P. Jyothi Kiran	8	
3		9	
4		10	
5		11	
6			

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.A., B.Sc., B.Com., Degree
At the end of the Second Semester
Revised Choice Based Credit System (w.e.f. 2020-2021)
DEPARTMENT OF ENGLISH

Programme: B.A./B.Com./ B.Sc.	**Year: I**	**Semester: II**
Skill Development Courses	**Course – II (Arts Stream)** **Title – BUSINESS COMMUNICATION**	
Total Theory Hours: 30	**2 Hours per week**	**Total Credits:2**

BUSINESS COMMUNICATION

Total 30 hrs (02hrs/wk), 02 Credits, Max 50 marks

Learning Outcomes:

After successful completion of this course, students will be able to;

1. *Understand the types of business communication and correspondence*
2. *Comprehend the processes like receiving, filing and replying*
3. *Acquire knowledge in preparing good business communications*
4. *Acquaint with organizational communication requirements and presentations.*

SYLLABUS:

UNIT I : 06hrs

Introduction and Importance of communication an overview - meaning and process of communication - organizational communication and its barriers.

UNIT II: 10hrs

Types of Business Communications –Categories, methods and formats - Business vocabulary - Business idioms and collocations – Organisational Hierarchy - Various levels of communication in an organization – Top-down, Bottom-up and Horizontal-Business reports, presentations– Online communications.

UNIT III: 10hrs

Receiving business communications -Filing and processing -Sending replies. Routine cycle of communications - Writing Communications - Characteristics of a good business communication -Preparation of business meeting agenda – agenda notes - minutes –circulation of minutes – Presentations of communication using various methods.

Recommended Co-curricularActivities (04hrs):

1. Collection of various model business letters
2. Invited lecture/field level training by a local expert
3. Reading of various business reports and minutes and its analysis
4. Presentations of reports, charts etc.
5. Assignments, Group discussion, field visit etc.

Reference books: Chaturvedi. P.D.Chaturvedi.M - Business Communication concepts, Cases and applications - Pearsons Education

1. Kaul Asha - Effective Business Communication - PHI Learning pvt Ltd
2. www.swayam.gov.in
3. Websites on business communication

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.A., B.Sc., B.Com., Degree Examinations
At the end of the Second Semester
Course –II – Skill Development Courses
Paper-II – BUSINESS COMMUNICATION
Revised Syllabus based on RCBCS
(W.e,f. 2020 – 2021 Batch)

QUESTION PAPER PATTERN

Time: 1 ½ hrs. **Max.Marks:50**

1. Part – I – Essay Questions. Each question carries 10 marks. Answer THREE questions out of FIVE questions.

3x10=30M

2. Part – II – Short answer questions. Each question carries 5 marks. Answer FOUR questions out of Six questions.

4x5=20M

Blue Print

Questions	UNIT-I	UNIT-II	UNIT-III
Essay Questions (1-5)	01	02	02
Short answer questions (6-11)	02	02	02

Total Marks: 30+20=50M

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.A., B.Sc., B.Com., Degree Examinations
At the end of the Second Semester
Course –II – Skill Development Courses
Paper-II – BUSINESS COMMUNICATION
Revised Syllabus based on RCBCS
(W.e,f. 2020 – 2021 Batch)

MODEL QUESTION PAPER

Time: 1 ½ hrs. **Max.Marks:50**

I. Answer any THREE of the following in about 200 words each: **3x10=30M**

1. What are the importance of organizational communication and
   It's barriers?
2. What are the 7 main parts of a business letter?
3. What are the categories in business communication?
4. What are the various levels of communication in an organization?
5. What is the most important goal of business communication?

II. Answer any FOUR of the following in about 100 words each: **4x5=20M**

1. How do you prepare a business meeting Agenda?
2. What do you mean by written communication?
3. What are the various types of business letters?
4. How many types of business communications are there?
5. State some styles of writing business letter.
6. What is business report in communication?

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.A., B.Sc., B.Com., Degree Courses
At the end of the Second Semester
Revised Choice Based Credit System (w.e.f. 2020-2021)
BUSINESS COMMUNICATION
BOARD OF STUDIES MEETING
DEPARTMENT OF ENGLISH

RESOLUTIONS

Resolution 1	:	Resolved to continue Skill Development Course - II **BUSINESS COMMUNICATION,** for 2nd Semester in 1st year B.A/B.Sc./B.Com programmes under revised RCBCS for adoption and implementation from the academic year 202 21 onwards.
Resolution 2	:	Resolved to continue the syllabus of the Skill Development Course - II **BUSINESS COMMUNICATION** , for 2nd Semester in B.A/B.Com/B.Sc programmes under revised RCBCS for adoption from the academic year 2020-21 onwards
Resolution 3	:	Resolved to continue the model question paper, Blue print and structure of question paper and question bank for the respective Skill Development Course - II **BUSINESS COMMUNICATION,** for 2nd Semester in B.A/B.Com/B.Sc programmes under revised RCBCS from the academic year 2020-21 onwards.
Resolution 4	:	Resolved to continue the allotment of Maximum marks, Qualifying marks, Instruction hours and credits allotted for the Skill Development Course - II **BUSINESS COMMUNICATION,** for 2ndSemester in B.A/B.Com/B.Sc programmes under revised RCBCS from the academic year 2020-21 onwards. Maximum Marks : 50 M Qualifying Marks : 20 M Instruction hours per week: 02 Credits Allotted : 02
Resolution 5	:	Resolved to continue the list of recommended text books and reference books which are listed at the end of the syllabi of the respective Skill Development Course - II **BUSINESS COMMUNICATION** , for 2nd Semester.
Resolution 6	:	**Nil**

Signature of the Members:

S.No	Signatures of the Members	S.No.	Signatures of the Members
1	S/Sybaulu	7	
2	P. Jyothi Kiran	8	
3	T. [illegible]	9	
4	J. B. M. devi	10	
5	T. Kanakalakshmi	11	
6			

MEMBERS OF THE BOARD OF STUDIES 2020-2021

DEPARTMENT OF ENGLISH

RESOLUTIONS

SL.NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1.	Mrs. T.S.K.Sirisha HOD of English Department D.N.R.College (A), Bhimavaram.	Chairman	
2.	Mrs.P.Jyothi Kiran Lecturer in English D.N.R.College (A), Bhimavaram	Member	P. Jyothi Kiran
3.	Mrs.T.Reavthi Lecturer in English D.N.R.College (A), Bhimavaram	Member	T. R...
4.	Ms.J.B.Manoja Devi Lecturer in English D.N.R.College (A), Bhimavaram	Member	J. B. M. Devi
5.	Mrs.T.Kanaka Lakshmi Lecturer in English D.N.R.College (A), Bhimavaram	Member	T. Kanakalakshmi
6.	Mrs.Dr.D.Jyothirmai Associate Professor Department of English Adikavi Nannaya University, Rajahmundry.	University Nominee	Through Online.
7.	Sri.G.D.Srinivasa Rao Lecturer in English ASNM College(A), Palkol W.G. Dist	Subject Expect	Through Online.
8.	Sri.Dr.Ch.Sampath Kumar HOD of English Department KGRL College (A), Bhimavram.	Subject Expect	Through Online
9.	Sri.M.V.Subba Raju Retd. Lecturer in English D.N.R.College (A), Bhimavaram	Alumni Member	Through Online
10.	Sri.CH.V.Prasada Rao Retd. HOD of English D.N.R.College (A), Bhimavaram	Special Invitee	Through Online
11.	J.Pradeep B A (SEP) Roll No: 102 D.N.R.College (A), Bhimavaram	Student Representative	Through Online.

D.N.R. College (Autonomous) :: Bhimavaram
Board of Studies Meeting 2021-22
Department of Telugu & Sanskrit

Minutes of Board of Studies Meeting of Department of Telugu & Sanskrit held on 15-11-2021 at 2.00 PM through online.

Members

Sl. No.	Name of the Person	Designation	Signature
1	Sri.T.Chittibabu, HOD of Telugu & Sanskrit D.N.R.College (Autonomous), Bhimavaram.	Chairman	
2	Dr.U.Sreerama Raju, Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
3	Sri K.Bharath Kumar Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
4	Smt. R.Sandhya Rani Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
5	Dr. D.Prasanth Kumar Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
6	Dr. P.Bala Ganesh Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
7	Sri S.V.Pallayya Lingam Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
8	Sri P.Narasimha Rao Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
9	Smt. P.Janaki Devi Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
10	Dr. K.Ravi, M.A., Ph.D. Lecturer in Telugu, SASJ Govt. Degree College, Narayanapuram	University Representative	Through online
11	Dr. K.V.S.P.B. Acharya, M.A., Ph.D. Lecturer in Sanskrit, CR Reddy College, Eluru, W.G.Dt.	University Representative	Through online
12	Sri M.Sreenivasa Rao, M.A., M.Phil. HOD of Telugu, CR Reddy College, Eluru, W.G.Dt.	Subject expert	Through online

13	Smt. N.Sri Valli, M.A. (M.Ed.) HOD of Telugu KGRL College, Bhimavaram	Subject expert	Through online
14	Smt. B.N.V.K.Valli, M.A. Lecturer in Sanskrit B.V.Raju Degree College, Bhimavaram	Subject expert	Through online
15	Dr. M.V.B.Gangadhar Rao, M.A., Ph.D. HOD of Sanskrit P.R. Govt.Degree College, Kakinada	Subject Expert	Through online
16	Sri M.Ramesh Lecturer in Telugu D.N.R.College (Autonomous), Bhimavaram.	Alumni Member	M. Ramesh
17	Sri G Manikyala Rao Sanskrit Pandit Z.P.O. High School, Taduru, W.G.Dt.	Alumni Member	G. M Rao
18	K.Chakra Pani, II B.A., Telugu	Student Representative	K. Chakrapani
19	M.Revathi, II B.Com. Sanskrit	Student Representative	M. Revathi

NAMES OF THE PAPER SETTERS AND EXAMINERS IN TELUGU

SL.NO	NAME	SL.NO	NAME
1	Dr .P.V.B.Sanjeeva Rao HOD of Telugu SKVT. College Rajahmundry 9849579579	7	S.Yocob Lecturer in Telugu Sri Y.N.Degree college Narasapuram 9441346888 yacodsade@gmail.com
2	Dr.K.Ravi HOD Telugu S.A.J.S, Government Degree College Narayanapuram 9491175498 Kvavivajam@gmail.com	8	Sri Y.Venkateswarlu HOD of Telugu Sri Y.N. Degree college Narasapuram 6281487828
3	Sri Sangineedi Ravi Kumar Lecturer in Telugu Sir CR Reddy College Eluru 9494549311 Sangineedíravikumar@gamil.com	9	Dr.Siva Prasad Lecturer in Telugu S.K.S.D Women's College Tanuku 9490460091
4	Medasani Srinivasa Rao HOD of Telugu CRR Degree College Eluru 9393257259	10	N.Srivalli HOD of Telugu K.G.R.L. College Bhimavaram 9676972227 nadusrivalli@gmail.com
5	B.Eswari Lecturer in Telugu CRR College for Women Eluru 9581661819	11	Dr.M.Sudhamayi HOD of Telugu Government Arts College, Rajamahendravaram 9492149532
6	John Kenadi Lecturer in Telugu CRR Degree College for Women Elugu 8309544328	12	Dr.Ch.Naga Rajewari Lecturer in Telugu Government Arts College, Rajamahendravaram 9440385649

NAMES OF THE PAPER SETTERS AND EXAMINERS IN SANSKRIT

SL.NO	NAME		
1	Dr.G.Amruthavalli Tayaru Lecturer in Sanskrit S.K.S.D.Mahila Kalasala Tanauku amruthavalli854@gmail.com 9490983821	2	Dr.P.Srivalli Lecturer in Sanskrit Government Arts College, Rajamahendravaram 9640604153 prabhalasv@gmail.com
3	M.Vani Kumari SVJV Sanskrit College Kovvuru 8985016145	4	Dr.D.Gowri Sankar SVJV Sanskrit College Kovvuru 9290352130
5	Dr.Ch.Rama Devi SVJV Sanskrit College Kovvuru 9618532560	6	Dr.K.V.S.P.Acharya HOD of Sanskrit CR Reddy College Eluru 9393253690 drbullikvs@gmail.com
7	Dr.M.V.B.Gangadhara Rao HOD in Sanskrit PR Government College, Kakinada gangadhararaomallula@gmail.com 9393392619	8	B.N.V.K.Valli Lecturer in Sanskrit B.V.Raju Degree College Bhimavaram sahitikouslik@gmail.com
9	Dr.U.Ramanamurthy Vijayawada 9848444906	10	Dr.K.V.R.B.Varalakshmi Lecturer in Sanskrit Government Arts College Rajamahendravaram. 9393392619

దంతులూరి నారాయణ రాజు కళాశాల (అటానమస్), భీమవరం
ఆంధ్ర గీర్వాణ శాఖ
తెలుగు మరియు సంస్కృత పాఠ్యాంశ నిర్ణాయక మండలి సమావేశం
తేది : 15-11-2021
(Board of Studies Meeting Telugu and Sanskrit)

అజెండా

విషయం : 1. జనరల్ తెలుగు I B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు 1,2 సెమిస్టర్‌లకు ప్రస్తుతం అమలులో వున్న సిలబస్‌ను, ప్రశ్నాపత్రాలను పున: పరిశీలించి కొనసాగించుటకు.

2. జనరల్ తెలుగు 2021-22 విద్యా సంవత్సరము నుండి రెండవ సంవత్సరం B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 3వ సెమిస్టర్‌లో 100 మార్కులు. [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/ Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు.

3. ప్రత్యేక తెలుగు 2020-21 విద్యా సంవత్సరము నుండి I B.A. ప్రోగ్రామ్‌కు సంబంధించి 1,2 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు.

4. ప్రత్యేక తెలుగు 2021-22 విద్యా సంవత్సరము నుండి II B.A. ప్రోగ్రామ్‌కు సంబంధించిన 3,4,5 పేపర్‌లకు 3,4 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను రూపొందించుటకు.

5. ప్రత్యేక తెలుగు 5,6 సెమిస్టర్‌లకు ప్రస్తుతం అమలులో ఉన్న సిలబస్‌ను, ప్రశ్నాపత్రాలను పున: పరిశీలించి కొనసాగించుటకు.

6. సంస్కృతంలో 2020-21 విద్యా సంవత్సరము నుండి I B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 1,2 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/ Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు.

7. సంస్కృతంలో 2021-22 విద్యా సంవత్సరము నుండి II B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 3వ సెమిస్టర్‌కు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/ Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను రూపొందించుటకు.

8. విద్యాపరమైన యితర విషయములను సూచించుటకు.

దంతులూరి నారాయణ రాజు కళాశాల (అటానమస్), భీమవరం

ఆంధ్ర గీర్వాణ శాఖ

తెలుగు మరియు సంస్కృత పాఠ్యాంశ నిర్ణాయక మండలి సమావేశం

తేది : 15-11-2021

(Board of Studies Meeting Telugu and Sanskrit)

తీర్మానములు

విషయం : 1. జనరల్ తెలుగు I B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు 1,2 సెమిస్టర్‌లకు ప్రస్తుతం అమలులో వున్న సిలబస్‌ను, ప్రశ్నాపత్రాలను పున: పరిశీలించి కొనసాగించుటకు తీర్మానించడమైనది.

2. జనరల్ తెలుగు 2021-22 విద్యా సంవత్సరము నుండి రెండవ సంవత్సరం B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 3వ సెమిస్టర్‌లో 100 మార్కులు. [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/ Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు తీర్మానించడమైనది.

3. ప్రత్యేక తెలుగు 2020-21 విద్యా సంవత్సరము నుండి I B.A. ప్రోగ్రామ్‌కు సంబంధించి 1,2 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు తీర్మానించడమైనది.

4. ప్రత్యేక తెలుగు 2021-22 విద్యా సంవత్సరము నుండి II B.A. ప్రోగ్రామ్‌కు సంబంధించిన 3,4,5 పేపర్‌లకు 3,4 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను రూపొందించడమైనది.

5. ప్రత్యేక తెలుగు 5,6 సెమిస్టర్‌లకు ప్రస్తుతం అమలులో ఉన్న సిలబస్‌ను, ప్రశ్నాపత్రాలను పున: పరిశీలించి కొనసాగించుటకు తీర్మానించడమైనది.

6. సంస్కృతంలో 2020-21 విద్యా సంవత్సరము నుండి I B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 1,2 సెమిస్టర్‌లకు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/ Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను కొనసాగించుటకు తీర్మానించడమైనది.

7. సంస్కృతంలో 2021-22 విద్యా సంవత్సరము నుండి II B.A., B.Sc., B.Com., B.Voc, BBA, B.Sc.(Honours) ప్రోగ్రామ్‌లకు సంబంధించిన 3వ సెమిస్టర్‌కు 100 మార్కులు [ఇంటర్నల్స్‌కు 25 మార్కులు (వ్రాత పరీక్షకు 15 మార్కులు, Assignment/Seminar/ Project కు 5 మార్కులు, Extra curricular activities కు 5 మార్కులు) External కు 75 మార్కులు] క్రెడిట్ ఆధార పద్ధతిలో ఉండేటట్లు ఆర్.సి.బి.సి.యస్. (Revised Choice Based Credit System) కు అనుగుణంగా సిలబస్‌ను, ప్రశ్నాపత్రాలను రూపొందించడమైనది.

8.

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Language Courses **GENERAL TELUGU**	Course- III Title: **సృజనాత్మక రచన**	
Total Theory Hours: 60.	4 hours per week.	Total Credits: 3

Syllabus for 2020-2021 admitted Batch

పాఠ్య ప్రణాళిక

యూనిట్–I: వ్యక్తీకరణ నైపుణ్యాలు

1. భాష–ప్రాథమికాంశాలు: భాష -నిర్వచనం, లక్షణాలు, ఆవశ్యకత, ప్రయోజనాలు

2. వర్ణం-పదం-వాక్యం', వాక్య లక్షణాలు సామాన్య-సంయుక్త-సంక్లిష్ట వాక్యాలు

3. భాషా నిర్మాణంలో 'వర్ణం-పదం-వాక్యం' ప్రాధాన్యత

యూనిట్–II సృజనాత్మక రచన

4. కవితా రచన : ఉత్తమ కవిత – లక్షణాలు

5. కథారచన : ఉత్తమ కథ – లక్షణాలు

6. వ్యాస రచన : ఉత్తమ వ్యాసం-లక్షణాలు

యూనిట్–III: అనువాద రచన

7. అనువాదం -నిర్వచనం, అనువాద పద్ధతులు,

8. అనువాద సమస్యలు-భౌగోళిక,భాషా, సాంస్కృతిక సమస్యలు, పరిష్కారాలు

9. అభ్యాసము : ఆంగ్లం నుండి తెలుగుకు, తెలుగు నుండి ఆంగ్లానికి ఒక పేరాను అనువదించడం

యూనిట్ IV మాధ్యమాలకు రచన-I (ముద్రణామాధ్యమం/ప్రింట్ మీడియా)

10. ముద్రణామాధ్యమం (అచ్చుమాధ్యమం) : పరిచయం, పరిధి, వికాసం

11. వివిధ రకాల పత్రికలు–పరిశీలన, పత్రికాభాష, శైలి, వైవిధ్యం

12. పత్రికా రచన : వార్తా రచన, సంపాదకీయాలు, సమీక్షలు–అవగాహన

యూనిట్ V మాధ్యమాలకు రచన-2 (ప్రసార మాధ్యమం/ఎలక్ట్రానిక్ మీడియా)

13. ప్రసార మాధ్యమాలు : నిర్వచనం, రకాలు, విస్తృతి, ప్రయోజనాలు

14 శ్రవణ మాధ్యమాలు - రచన: రేడియో రచన, ప్రసంగాలు, నాటికలు, ప్రసార సమాచారం

15. దృశ్యమాధ్యమాలు – రచన: వ్యాఖ్యానం (యాంకరింగ్) టెలివిజన్ రచన

ప్రశ్నల రీతి

1.ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి ఆరు వ్యాసరూప సమాధాన ప్రశ్నలు ఇవ్వాలి. ఐదు వ్రాయమనాలి

5 x 10 = 50M

2. ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి ఆరు సంక్షిప్త సమాధాన ప్రశ్నలు ఇవ్వాలి. ఐదు వ్రాయమనాలి

5x5= 25M

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Total Theory Hours: 60.	4 hours per week.	Total Credits: 3	

మార్కులు :- 75
సమయం :- 3.గం.

Model Question Paper

అ – విభాగము

2. ఈ క్రింది ప్రశ్నలలో ఐదింటికి వ్యాస రూప సమాధానములు వ్రాయండి 5 x 10 = 50 మార్కులు

1. భాషను నిర్వచించి, లక్షణాలు రాసి, ప్రామాణిక భాషను పరిచయం చేయండి.

2. ఉత్తమ కవితా లక్షణాలను విశ్లేషించండి.

3. అనువాద లక్షణాలను వివరిస్తూ.. అనువాద పద్ధతులను గురించి రాయండి.

4. పత్రికా రచనను గురించి విశ్లేషణాత్మక వ్యాసం రాయండి.

5. ప్రసార మాధ్యమాల విస్తృతి, ప్రయోజనాలను సమీక్షించండి.

6. యాంకరింగ్ నిర్వహణ, తీరుతెన్నులను వివరించండి.

ఆ –విభాగము

1. ఈ క్రింది వానిలో ఐదింటికి సంక్షిప్త సమాధానములు వ్రాయండి. 5x5 = 25 మార్కులు

ఆరవ ప్రశ్నకు సమాధానం తప్పనిసరిగా వ్రాయవలెను.

7. భాష-ప్రయోజనాలు 8. వాక్యం-లక్షణాలు 9. టెలివిజన్ రచన

10. సంశ్లిష్ట వాక్యం 11. సంపాదకీయాలు

12. క్రింది ఆంగ్ల వాక్యములను తెలుగులోనికి అనువదించుము.

Sri Rama Krishna was a man-divine. Whatever he said was not merely the result of any high intellectual capacity or of any broad academic study in which one borrows things from others and cannot claim to say anything with authority. Sri Rama Krishna had seen God face to face, had talked with him and had tasted the nectar of divine bliss. It is for this reason that his saying carry a force, weight and an authority.

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I B.A స్పెషల్ తెలుగు - సెమిస్టర్ - 1

యూనిట్-I :

బెజ్జమహాదేవి కథ – పాల్కురికి సోమన

(బసవపురాణం – తృతీయాశ్వాసం – 151 వ పుట నుండి – 160 వ పుట వరకు)

('మతియును వినుఁ బెజ్జమహాదేవియనంగ.... యమ్మవ్వయును నామమయ్యె వెండియును')

యూనిట్-II :

నాడీజంఘోపాఖ్యానం– తిక్కన

(ఆంధ్రమహాభారతం – శాంతి పర్వం– తృతీయశ్వాసం)

"మఱునాడు నదీనందనుం గొలిచియుండి ధర్మనందనుడు...(472వ పద్యం) నుండి ....

....భీష్ముడు భీమాగ్రజునకుం జెప్పె.(528 వచనం) వరకు

యూనిట్-III :

ప్రహ్లాద చరిత్రము – బమ్మెర పోతన (ఆంధ్రమహాభాగవతం – సప్తమస్కంధం)

(115వ పద్యం "తన యందు..... నుండి

185వ పద్యం...జనకద్రోహిన్ మహింగంటిరే" వరకు)

యూనిట్-IV:

పరూధినీ ప్రవరులు – అల్లసాని పెద్దన

(స్వారోచిష మనుసంభవము – ద్వితీయాశ్వాసం)

(3వ పద్యం "అటఁజని కాంచె..... నుండి....77వ వచనం....

నిత్యకృత్య సత్కర్మకలాపంబు నిర్వర్తించె" వరకు)

యూనిట్-V:

అశోకవనంలో జానకి – మొల్ల (రామాయణము – సుందరకాండము)

"హనుమంతుడు రాముని కుశలవార్తను సీతకు విన్నవించుట"

(90 వ పద్యం--తనకు దిక్కులేమిఁ దలపోసి దుఃఖింప, పవనసుతుడు మనుజ భాష పలికె....

నుండి 123వ పద్యం... నిజంబు నమ్ముమా!" వరకు)

ఆధార గ్రంథాలు:

1. శ్రీమదాంధ్ర మహాభారతము – శాంతి పర్వము .... తిరుమల తిరుపతి దేవస్థానం ప్రచురణ
2. స్వారోచిషమనుసంభవము – అల్లసాని పెద్దన (వావిళ్ళ వారి ప్రచురణ)
3. బసవపురాణము – పాల్కురికి సోమన (వావిళ్ళ వారి ప్రచురణ)
4. ఆంధ్ర మహాభాగవతము – తిరుమల తిరుపతి దేవస్థానం ప్రచురణ
5. మొల్ల రామాయణము – ఎమెస్కో ప్రచురణ

ప్రశ్నల రీతి

అ – విభాగము

1) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు పద్యములు యిచ్చి ఒక దానికి ప్రతిపదార్థ తాత్పర్యములు వ్రాయమనాలి. 1×8=8

2) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు పద్యములు యిచ్చి ఒక పద్యమును పూరించమనాలి. 1×3=3

3) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి సందర్భసహిత వ్యాఖ్యలు ఆరు యిచ్చి నాలుగు వ్రాయమనాలి. 4×3=12

4) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి సంగ్రహ సమాధాన ప్రశ్నలు ఆరు యిచ్చి నాల్గింటికి సమాధానములు వ్రాయమనాలి. 4×3=12

5) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి వ్యాసరూప సమాధాన ప్రశ్నలు ఆరు యిచ్చి మూడింటికి సమాధానములు వ్రాయమనాలి. 3×8=24

ఆ – విభాగము

వ్యాకరణము

6) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి ఆరు పదములు యిచ్చి నాలుగు పదములను విడదీసి సంధి కార్యములు వ్రాయమనాలి. 4×1=4

7) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి ఆరు పదములు యిచ్చి నాల్గింటికి విగ్రహ వాక్య, సమాస నామములు వ్రాయమనాలి. 4×1=4

8) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు అలంకారములు యిచ్చి ఒకదానికి లక్ష్య లక్షణ సమన్వయం చేయమనాలి. 1×4=4

9) ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు వృత్తములలో ఒక దానికి గణ విభజన చేసి యతి, ప్రాసలను గుర్తించి లక్షణములు వ్రాయమనాలి. 1×4=4

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated To Adikavi Nannaya University)
Revised Choice Based Credit System (w.e.f. 2020-21)
I B.A., Special Telugu
Semester-I
Model Question Paper
Paper-IA

సమయం : 3 గంటలు మార్కులు : 75

అ – విభాగము

1. (అ) ఈ క్రింది పద్యములలో ఒకదానికి ప్రతిపదార్థ తాత్పర్యములు వ్రాయుము. 1×8=8 మా.

నిచ్చల వచ్చి రేపడక నెయ్యమెలర్పంగ మత్సఖుండు నేఁ
డిచ్చటి కేలరాఁడు? గుణహీనత విప్రుని యందు గల్మినా
యిచ్చఁదలంచితిం దులువ యేమి దలంచెనొ? యక్కటా? మదిం
బొచ్చెము లేదు నమ్ము ఒక పుంగవుఁ; డెట్లగు నొక్కొడైవమా!

(లేదా)

అంధేం ధూదయముల్ మహా బధిరి శంఖారావముల్ మూకస
ద్గ్రంథాఖ్యానములే నపుంసక పధూ కాంక్షల్ కృతఘ్నాపలీ
బంధుత్వంబులు భస్మహవ్యములు లుబ్ధ ద్రవ్యముల్ క్రోడస
ద్గ్రంథంబుల్ హరిభక్తి పర్జితుల రిక్త వ్యర్థ సంసారముల్

2. (ఆ) ఈ క్రింది పద్యములలో ఒక దానికి పాద భంగ దోషము లేకుండా పూరించుము. 1×3=3 మా.

కుడిచిన పళ్లెరంబును – – – – – కొక్కెరసమ్ముడ మంద మట్టికిన్

(లేదా)

జనకుని భంగి – – – – – సందును జూటి చెప్పుమా

3. (ఇ) ఈ క్రింది సందర్భ వ్యాఖ్యలలో నాల్గింటికి జవాబు లిమ్ము. 4×3=12 మా.

1. ఎల్ల వారికి దుఃఖ మిట్టిదకాదె.
2. దెపగురుండు సెప్పెసన్నిటిలోనన్
3. హరుని వాక్యముగాన మదియేల తప్పు
4. తార వినుండుట మేలు నిశాచరాగ్రణి
5. కరకంపిత సాలము శీత శైలమున్
6. వసుధా స్థలి వర్ధిల్లు బ్రహ్మకల్పముల్

4. (ఈ) ఈ క్రింది ప్రశ్నలలో నాల్గింటికి సంగ్రహ రూప సమాధానములిమ్ము. 4×3=12 మా.

1. తిక్కన సోమయాజి
2. బెజ్జమహాదేవి కథలో ఉన్న వీరశైవ భక్తులను గూర్చి తెలుపండి.
3. భీష్ముడు ఏ సందర్భంలో ధర్మరాజు నాడీ జంఘుని కథను చెప్పాడు.
4. మీ పాఠ్యభాగం ఆధారంగా ప్రహ్లాదుని గుణశీలాలను వివరించండి.
5. ప్రహ్లాదుని విష్ణుభక్తి తత్పరతను వివరించండి.

6. హనుమంతుడు సీతను వెంటనే లంక నుండి తన వెంట రమ్మన్నప్పుడు సీత ఎందుకు తిరస్కరించింది.

5. (ఉ) ఈ క్రింది వానిలో మూడింటికి వ్యాసరూప సమాధానములు వ్రాయుము. 3×8=24 మా.

1. బెజ్జ మహాదేవి శివభక్తి ప్రాశస్త్యాన్ని వివరించండి.
2. ప్రహ్లాదుని విద్యాభ్యాసాన్ని తెలుపండి.
3. నాడి జంఘుని వృత్తాంతాన్ని వివరించండి.
4. మీ పాఠ్యభాగం ప్రహ్లాద చరిత్ర ఆధారంగా పోతన కవితా రీతులను వ్రాయండి.
5. ప్రవరుడు హిమాలయాల్లో దర్శించిన ప్రకృతి సౌందర్య దృశ్యాలను వర్ణించండి.
6. సీతాదేవికి హనుమంతుడిచ్చిన సందేశ సారాన్ని వివరించండి.

ఆ – విభాగము

6. (ఊ) వ్యాకరణము

క) ఈ క్రింది వానిలో నాలుగు పదములను విడదీసి సంధి పేరు వ్రాయుము. 4×1=4 మా.

1. ఎవ్వాఁట
2. చందనోత్కరంబు
3. అయస్కాంతము
4. మరుదంకురములో
5. మిన్నేరు
6. కలశాంబుధి

7. ఖ) ఈ క్రింది వానిలో నాలుగు సమాస పదములకు విగ్రహ వాక్యములు, సమాస నామములు వ్రాయుము. 4×1=4 మా.

1. ముల్లోకములు
2. ముక్తినిధి
3. కఱుకంత
4. కులవృత్తము
5. ఉత్తమ కులజుడు
6. దైత్యకుల ముఖ్యుడు

8. గ) ఈ క్రింది అలంకారములలో ఒక దానికి లక్ష్య లక్షణముల సమన్వయము చేయుము. 1×4=4 మా.

1. వృత్త్యానుప్రాసం
2. ఉపమాలంకారం

9. ఘ) ఈ క్రింది వృత్తములలో ఒక దానిని సోదాహరణముగా గణవిభజన చేసి యతి ప్రాసలను గుర్తించి లక్షణములను వ్రాయుము. 1×4=4 మా.

1. ఉత్పలమాల
2. శార్దూలము

D.N.R.College (Autonomous), Bhimavaram

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Revised Choice Based Credit System (w.e.f. 2020-21)

Syllabus for 2020-2021 admitted Batch

I.B.A స్పెషల్ తెలుగు - సెమిస్టర్ - II

యూనిట్-I :

జన్మభూమి (గేయం) – రాయప్రోలు సుబ్బారావు

యూనిట్-II :

వేమన నీతి – వేమన పద్యాలు

(1వ పద్యం నుండి 30వ పద్యం వరకు) - 30 పద్యాలు

యూనిట్-III :

గబ్బిలం – గుర్రం జాషువా

గబ్బిలం-మొదటిభాగం-మొదటిపద్యం-"చిక్కిన కాసుచే....

..... 40వ పద్యం 'నీయౌదార్యగుణంబు...పుణ్యాంగనా!" వరకు

యూనిట్-IV:

భిక్షువర్షీయసీ (కవితా ఖండిక) – శ్రీరంగం శ్రీనివాసరావు (మహాప్రస్థానం నుండి)

యూనిట్-V:

అమృతం కురిసిన రాత్రి (కవితా ఖండిక) – దేవరకొండ బాలగంగాధర తిలక్

('అమృతం కురిసిన రాత్రి' లోని 82వ పుట నుండి 83వ పుట వరకు)

ప్రచురణ. విశాలాంధ్ర పబ్లికేషన్స్, హైదరాబాద్

ఆధార గ్రంథాలు :

1. జన్మభూమి (గేయం) – రాయప్రోలు సుబ్బారావు
2. వేమన నీతి – వేమన పద్యాలు – రెడ్డి సేవా సమితి వారి ప్రచురణ
3. గబ్బిలం (మొదటి భాగం) – గుర్రం జాషువా
4. మహా ప్రస్థానం – శ్రీరంగం శ్రీనివాస రావు
5. అమృతం కురిసిన రాత్రి – దేవరకొండ బాలగంగాధరతిలక్

ప్రశ్నల రీతి

1) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు పద్యములు యిచ్చి ఒక దానికి ప్రతిపదార్థ తాత్పర్యములు వ్రాయమనాలి. 1×8=8

2) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు పద్యములు యిచ్చి ఒక పద్యమునకు పొడభంగ దోషము లేకుండా వ్రాయమనాలి. 1×3=3

3) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి రెండు పద్యములు యిచ్చి ఒక దానికి భావము వ్రాయమనాలి. 1×3=3

4) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి సందర్భసహిత వ్యాఖ్యలు నాల్గింటినిచ్చి మూడింటిని వ్రాయమనాలి. 3×3=9

5) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి సంగ్రహ సమాధాన ప్రశ్నలు మూడింటినిచ్చి రెండింటికి సమాధానములు వ్రాయమనాలి. 2×6=12

6) ఇందులో యివ్వబడిన క్వశ్చన్ బ్యాంకు నుండి వ్యాసరూప సమాధాన ప్రశ్నలు ఐదింటినిచ్చి నాల్గింటికి సమాధానములు వ్రాయమనాలి. 4×10=40

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I B.A. – Special Telugu
Semester-II
Model Question Paper

సమయం : 3 గంటలు | మార్కులు : 75

1. ఈ క్రింది పద్యములలో ఒకదానికి ప్రతిపదార్థ తాత్పర్యములు వ్రాయుము. **1×8=8 మా.**

మృగ పక్షిత్వ విచిత్ర ధర్మములు మూర్తిన్ దాల్చియున్నట్టి నీ
మొగముం జూడదు లోకమట్టి శకునంబుల్ ప్రాత పట్టింపులు
స్తగవీ పేదకు రమ్ము గబ్బిలపు చానా నాదు స్వాంతంబులో
దిగులుం బాపి పినాకపాణి కొక సందేశంబు సందింతువా?

(లేదా)

గౌరీనాథుడు కాశికిం జనెడు మార్గంబందు రా మేఘపుం
బాఱన్ జుక్కలతోఁట నాటుకుని మింట స్నీకుఁగన్నట్టు
దారిం బొమ్మొక వేళఁ జూచెదవు భూతస్వామిని స్నీకుఁ జ
త్వారం బేర్పడి దారిఁ దప్పెదవు గాదా భానుఁడే తెంచినన్:

2. ఈ క్రింది పద్యములలో ఒకదానికి పాదభంగ దోషము లేకుండా వ్రాయుము. **1×3=3 మా.**

పామునకుబాలు – – – – – వీడుస్నచోట

(లేదా)

ప్రతిమల పెండ్లి సేయుటకు – – – – – భాగ్య విహీనుల క్షుత్తు లాఱునే?

3. ఈ క్రింది కవితలలో ఒకదానికి భావము వ్రాయుము. **1×3=3 మా.**

ఏ పూర్వ పుణ్యమో ఏ యోగ బలమొ
జనియించినాడవీ స్వర్గ లోకమున,
ఏ మంచి పూవులన్ ప్రేమించినావో
నిను మోచె నీ తల్లి కనక గర్భమున

(లేదా)

ముగ్గుబుట్ట వంటి తలా,
ముడుతలు తేరిన దేహం,
కాంతిలేని గాజు కళ్ళు,
తన కన్నా శవం నయం.

4. ఈ క్రింది వానిలో మూడింటికి సందర్భసహిత వ్యాఖ్యలు వ్రాయుము. **3×3=9 మా.**

(క) లేదురా ఇటువంటి భూదేవి యెందు.

(ఖ) పొలముల రత్నాలు మొలిచెరా యిచట.

(గ) దొరకదిచట నానంద కిరణ లవము.

(ఘ) హరి పాదాల తారా మంజీరాలు.

5. ఈ క్రింది ప్రశ్నలలో రెండింటికి సంగ్రహ సమాధానములు వ్రాయుము. **2×6=12 మా.**

1. రాయప్రోలు వారి జన్మభూమి గేయంపై ఉన్న ప్రేరణలు వివరించండి.
2. ఆశను గురించి వేమన చెప్పిన విషయాలు తెల్పండి.
3. అమృతాన్ని తాగిన కవి పలికిన తీరును తెల్పండి.

6. ఈ క్రింది ప్రశ్నలలో నాల్గింటికి వ్యాసరూప సమాధానములు వ్రాయుము. **4×10=40 మా.**

1. రాయప్రోలు సుబ్బారావు గారి కవిత ద్వారా వ్యక్తమైన దేశభక్తి?
2. మీ పాఠ్యభాగం ఆధారంగా వేమన గావించిన సామాజిక ప్రబోధాన్ని వివరించండి.
3. ఆధునిక తెలుగు సాహిత్యంలో జాషువా గబ్బిలం విశిష్టతను వివరించండి.
4. శ్రీశ్రీ బిక్షు వర్షీయసీని వర్ణించిన విధాన్ని వివరించండి.
5. తిలక్ అమృతం కురిసిన రాత్రి కవితా ఖండికలో వెల్లడించిన అభిప్రాయాన్ని వివరించండి?

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II B.A. స్పెషల్ తెలుగు – సెమిస్టర్ – 3

ప్రాచీన తెలుగు సాహిత్య చరిత్ర

పాఠ్య ప్రణాళిక

యూనిట్-I : ప్రాఙ్నన్నయ యుగం

1. వాఙ్మయం – సారస్వతం–సాహిత్యం, సాహిత్య అధ్యయన పద్ధతులు
2. సాహిత్య చరిత్ర–యుగ విభజన, 'చరిత్ర– సంస్కృతి–సమాజం–సాహిత్యం'–సంబంధాలు
3. ప్రాఙ్నన్నయ యుగం – భాషా సాహిత్యాలు

యూనిట్- II : అనువాద యుగం

4. నన్నయ మహాభారత రచన; నన్నయ కవితారీతులు; నన్నయ భారతాంధ్రీకరణ పద్ధతి
5. శివకవియుగంలోని దేశికవిత్వోద్యమం–నన్నెచోడుడు, పండితారాధ్యుడు, పాల్కురికి సోమనాథుడు
6. మార్గ–దేశి భేదాలు; దేశి కవిత్వోద్యమం; పండితత్రయం

యూనిట్- III : కావ్య–పురాణ యుగం

7. తిక్కన మహాభారత రచన; తిక్కన కవితాశిల్పం
8. ఎఱ్ఱన భారతారణ్యపర్వ శేష రచన; ఎఱ్ఱన సూక్తివైచిత్రి
9. నాచన సోమన–ఉత్తర హరివంశం; శ్రీనాథుని కృతులు–సమీక్ష;
   పోతన–భాగవత పురాణ రచన

యూనిట్- IV : ప్రబంధయుగం

10. ప్రబంధ లక్షణాలు; శ్రీకృష్ణదేవరాయలు, అష్టదిగ్గజ కవులు–కృతులు–సమీక్ష
11. అముక్తమాల్యద–ప్రబంధ లక్షణాలు–సమన్వయం
12. మనుచరిత్ర, వసుచరిత్ర – ప్రబంధ లక్షణాలు–సమన్వయం

యూనిట్- V : దక్షిణాంధ్రయుగం

13. పదసాహిత్యం, శతకసాహిత్యం, వచనసాహిత్యం, యక్షగానాలు
14. దక్షిణాంధ్రయుగ వైశిష్ట్యం; రఘునాథనాయకుడు–కృతులు–సమీక్ష
15. దక్షిణాంధ్రయుగ ప్రసిద్ధ కవులు–కృతులు–సమీక్ష

ఆధార గ్రంథాలు:

1. ఆంధ్రవాఙ్మయ చరిత్రము – ఆచార్య దివాకర్ల వేంకటావధాని
2. సమగ్రాంధ్ర సాహిత్యం – ఆరుద్ర
3. తెలుగు సాహిత్య సమీక్ష (మొదటి సంపుటం) – ఆచార్య జి.నాగయ్య
4. ఆంధ్రసాహిత్య చరిత్ర – ఆచార్య పింగళి లక్ష్మీకాంతం
5. చారిత్రక సామాజిక నేపథ్యంలో తెలుగు సాహిత్య చరిత్ర – ఆచార్య ముదిగంటి సుజాతారెడ్డి

ప్రశ్నల రీతి

అ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి ఆరు వ్యాసరూప ప్రశ్నలు యిచ్చి బదింటికి సమాధానములు వ్రాయమనాలి. 5×10=50 మా.

ఆ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి ఆరు సంక్షిప్త ప్రశ్నలు యిచ్చి ఐదింటికి సమాధానములు వ్రాయమనాలి. 5×5=25 మా.

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II B.A. స్పెషల్ తెలుగు

ప్రాచీన సాహిత్య చరిత్ర

మాదిరి ప్రశ్నా పత్రం

సెమిస్టర్-3 పేపర్-8

సమయం : 3 గంటలు | మార్కులు : 75

అ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి వ్యాసరూప సమాధానములు వ్రాయుము? 5×10=50 మా.

1. ప్రోజ్జన్నయ యుగంలో వచ్చిన తెలుగు శాసనాలను గూర్చి వ్రాయుము.
2. నన్నయ భారతాంధ్రీకరణ విధానమును వివరింపుము.
3. తిక్కన కవితా రీతులను గూర్చి వ్రాయుము.
4. శ్రీనాథుని కవితారీతులను వ్రాయుము.
5. మనుచరిత్ర ఆధారంగా ప్రబంధ లక్షణాలను గురించి వివరింపుము.
6. దక్షిణాంధ్ర యుగంలోని కవయిత్రులను గూర్చి వ్రాయుము.

ఆ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి సంగ్రహ సమాధానములు వ్రాయుము. 5×5=25 మా.

7. పాల్కురికి సోమన
8. శ్రీనాథుని రచనలు
9. నృసింహ పురాణం
10. అముక్తమాల్యద
11. రఘునాథ నాయకుడు
12. కృష్ణాధ్వరి

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II B.A. స్పెషల్ తెలుగు - సెమిస్టర్ - 4

ఆధునిక తెలుగు సాహిత్య చరిత్ర

పాఠ్య ప్రణాళిక

యూనిట్-I : ఆధునిక కవిత్వం-ఆవిర్భావ వికాసాలు

1. ఆధునిక కవిత్వ లక్షణాలు; ఆధునిక కవిత్వంలో ఉద్యమాలు, వాదాలు, ధోరణులు
2. ఆధునిక కవిత్వ ప్రక్రియలు
3. ఆధునిక తెలుగు సాహిత్య దీపధారులు-వీరేశలింగం, గిడుగు రామమూర్తి, గురజాడ అప్పారావు

యూనిట్- II : భావకవిత్వం

4. భావకవిత్వం-నిర్వచనం, లక్షణాలు, భావకవితా శాఖలు
5. భావకవులకు మార్గదర్శి-రాయప్రోలు సుబ్బారావు; భావకవితాపితామహుడు దేవులపల్లి కృష్ణశాస్త్రి
6. ప్రసిద్ధ భావకవులు, కృతులు-సమీక్ష

యూనిట్- III : అభ్యుదయ, విప్లవ కవిత్వాలు

7. అభ్యుదయ కవిత్వం-నిర్వచనం, అంతర్జాతీయ పరిణామాలు, నేపథ్యం; మార్క్సిజం ప్రభావం.
8. శ్రీశ్రీ-మహాప్రస్థానం; ప్రసిద్ధ అభ్యుదయ కవులు-కృతులు-సమీక్ష
9. తెలంగాణా పోరాట కవిత్వం, విప్లవకవిత్వం.

యూనిట్- IV : వచన కవిత్వం

10. వచన కవిత్వం-ఆవిర్భావ, వికాసాలు
11. నవ్యసంప్రదాయ కవిత్వం-స్వరూప స్వభావాలు, చరిత్ర
12. నయాగరా, చేతనావర్త, అనుభూతి కవులు-కృతులు-సమీక్ష

యూనిట్- V : సమకాలీన ఆధునిక కవితా ధోరణులు

13. స్త్రీవాదకవిత్వం-నేపథ్యం, ప్రధానాంశాలు, వస్తువైవిధ్యం
14. ప్రసిద్ధ స్త్రీవాద కవయిత్రులు-రచనలు
15. దళితవాదం, మైనార్టీవాదం, ప్రాంతీయవాదం

ఆధార గ్రంథాలు:

1. తెలుగు సాహిత్య సమీక్ష (రెండవ సంపుటం) – ఆచార్య జి.నాగయ్య
2. తెలుగు కవిత్వోద్యమాలు – సం. ఆవుల మంజులత
3. అధునిక తెలుగు సాహిత్యంలో విభిన్న ధోరణులు – సం. ఆచార్య కె.కె. రంగనాథాచార్యులు
4. చారిత్రక సామాజిక నేపథ్యంలో తెలుగు సాహిత్య చరిత్ర – ఆచార్య ముదిగంటి సుజాతారెడ్డి
5. తెలుగు సాహిత్య చరత్ర – ద్వా.నా.శాస్త్రి

ప్రశ్నల రీతి

అ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి అరు వ్యాసరూప ప్రశ్నలు యిచ్చి ఐదింటికి సమాధానములు వ్రాయమనాలి. 5×10=50 మా.

ఆ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి ఆరు సంక్షిప్త ప్రశ్నలు యిచ్చి ఐదింటికి సమాధానములు వ్రాయమనాలి. 5×5=25 మా.

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II B.A. స్పెషల్ తెలుగు

ఆధునిక తెలుగు సాహిత్య చరిత్ర

మాదిరి ప్రశ్నా పత్రం

సెమిస్టర్-4 పేపర్-4

సమయం : 3 గంటలు | మార్కులు : 75

అ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి వ్యాసరూప సమాధానములు వ్రాయుము? 5×10=50 మా.

1. ఆధునిక కవిత్వ ప్రక్రియలను గురించి వివరించండి.
2. 'అడుగు జాడ గురజాడది' – విమర్శనాత్మకంగా రాయండి.
3. భావకవిత్వాన్ని నిర్వచించి, లక్షణాలు వ్రాసి భావకవితా శాఖలను తెలియజేయండి.
4. అభ్యుదయ కవిత్వం నేపథ్యం, నిర్వచనం రాస్తూ, దానిపై మార్క్సిజం ప్రభావాన్ని విశ్లేషించండి.
5. వచన కవిత్వ ఆవిర్భావ వికాసాలను తెలపండి.
6. స్త్రీ వాద కవిత్వ నేపథ్యాన్ని, ప్రధానాంశాలను సమీక్షించండి.

ఆ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి సంగ్రహ సమాధానములు వ్రాయుము. 5×5=25 మా.

7. రాయప్రోలు సుబ్బారావు
8. విప్లవ కవిత్వం
9. అనుభూతి వాద కవులు
10. దళిత వాద కవిత్వం
11. మహా ప్రస్థానం
12. అధివాస్తవికతా వాదం

D.N.R.College (Autonomous), Bhimavaram

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Syllabus for 2020-2021 admitted Batch

II B.A. స్పెషల్ తెలుగు - సెమిస్టర్ - 4

తెలుగు సాహిత్య విమర్శ

పాఠ్య ప్రణాళిక

యూనిట్-I : 'కళలు' - కావ్యము / కవిత్వము

1. కళ-ఉత్పత్తి-భిన్న వాదాలు; దృశ్య-శ్రవ్యకళలు, లలితకళలు; లలితకళల్లో కవిత్వస్థానం
2. కావ్యం-కవి; కావ్య నిర్వచనాలు-ప్రాచ్యులు, పాశ్చాత్యులు
3. కావ్యం/కవిత్వం-ప్రాచీన, ఆధునిక తెలుగు కవుల అభిప్రాయాలు

యూనిట్- II : కావ్య హేతువులు, కావ్యప్రయోజనాలు, కావ్యభేదాలు

4. కావ్యహేతువులు - ప్రతిభ, వ్యుత్పత్తి-అభ్యాసము-సమగ్ర విశ్లేషణ
5. కావ్య ప్రయోజనాలు-ప్రాచీన, ఆధునిక దృక్పథాలు
6. కావ్యభేదాలు

యూనిట్- III : రసతత్వం

7. రససూత్రము-విభావ, అనుభావ, సాత్విక, సంచారీ భావాలు
8. రసోత్పత్తి వాదాలు (రసనిష్ప)-భట్టలోల్లటుడు, భట్టనాయకుడు, శ్రీశంకుకుడు, అభినవగుప్తుడు
9. రససంఖ్య: రస సమీకరణ వాదాలు/రసైకత్వం

యూనిట్- IV :

10. ధ్వని : ధ్వని స్వరూపం, ధ్వని నిర్వచనం, ధ్వని సిద్ధాంతం, ధ్వనికావ్య లక్షణం
11. అభిధ, లక్షణ, వ్యంజన
12. ధ్వని భేదాలు

యూనిట్- V : సంప్రదాయసాహిత్యం-విమర్శా పద్ధతులు

13. సాహిత్య విమర్శ-మౌలికాంశాలు, ప్రయోజనాలు
14. సాహిత్య విమర్శ-సంప్రదాయ విమర్శా పద్ధతులు
15. విమర్శా వ్యాసం - (తిక్కన తెరువులు) ఆచార్య జి.వి.సుబ్రహ్మణ్యం

(మా. సాహిత్య చరిత్రలో చర్చనీయాంశాలు - పుట 55 నుండి 60 వరకు)

ఆధార గ్రంథాలు:

1. సాహిత్య సోపానాలు – ఆచార్య దివాకర్ల వేంకటావధాని
2. సాహిత్య శిల్ప సమీక్ష - ఆచార్య పింగళి లక్ష్మీకాంతం
3. కావ్యాలోకము-నండూరి రామకృష్ణమాచార్య
4. ధ్వన్యాలోకము (లోచన సహితం) – ఆచార్య పుల్లెల శ్రీరామచంద్రుడు
5. రసోల్లాసము - ఆచార్య జి.వి.సుబ్రహ్మణ్యం
6. భారత ధ్వని దర్శనము – ఆచార్య శలాక రఘునాథ శర్మ

ప్రశ్నల రీతి

అ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి ఆరు వ్యాసరూప ప్రశ్నలు యిచ్చి ఐదింటికి సమాధానములు వ్రాయమనాలి. 5×10=50 మా.

ఆ-విభాగము

ఇందుతో యివ్వబడిన క్వశ్చన్ బ్యాంక్ నుండి ఆరు సంక్షిప్త ప్రశ్నలు యిచ్చి ఐదింటికి సమాధానములు వ్రాయమనాలి. 5×5=25 మా.

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II B.A. స్పెషల్ తెలుగు

అధునిక సాహిత్య విమర్శ

మాదిరి ప్రశ్నా పత్రం

సెమిస్టర్-4 పేపర్-6

సమయం : 3 గంటలు | మార్కులు : 75

అ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి వ్యాసరూప సమాధానములు వ్రాయుము? 5×10=50 మా.

1. కావ్య నిర్వచనములను గూర్చి చర్చించండి.
2. సాహిత్య విమర్శకు తెలుగు అలంకారికులు చేసిన సేవ ఎట్టిది?
3. కావ్య హేతువులను గురించి విశ్లేషణాత్మక వ్యాసం వ్రాయండి.
4. రసోత్పత్తి వాదాలను గూర్చి భారతీయ అలంకారికుల అభిప్రాయాలు వ్రాయండి.
5. ధ్వని భేదాలను సమగ్రంగా చర్చించండి.
6. కళను నిర్వచించి లలిత కళలలో కవిత్వ స్థానాన్ని సమీక్షించండి.

ఆ-విభాగము

ఈ క్రింది వానిలో ఐదింటికి సంగ్రహ సమాధానములు వ్రాయుము. 5×5=25 మా.

7. కవిత్వం
8. నాట్యశాస్త్రం
9. కావ్య భేదాలు
10. రస సంఖ్య
11. మమ్మటుడు
12. ఉత్తమ విమర్శకుని లక్షణాలు

D.N.R. College (Autonomous) :: Bhimavaram
Board of Studies Meeting 2021-22
Life Skill Course : Indian Culture and Science

Minutes of Board of Studies Meeting of Life Skill Course – Indian Culture and Science held on 15-11-2021 at 2.00 PM through online.

Members

Sl. No.	Name of the Person	Designation	Signature
1	Sri.T.Chittibabu, HOD of Telugu & Sanskrit D.N.R.College (Autonomous), Bhimavaram.	Chairman	
2	Dr.U.Sreerama Raju, Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
3	Sri K.Bharath Kumar Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
4	Smt. R.Sandhya Rani Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
5	Dr. D.Prasanth Kumar Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
6	Dr. P.Bala Ganesh Lecturer in Telugu, D.N.R.College (Autonomous), Bhimavaram.	Member	
7	Sri S.V.Pallayya Lingam Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
8	Sri P.Narasimha Rao Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
9	Smt. P.Janaki Devi Lecturer in Sanskrit, D.N.R.College (Autonomous), Bhimavaram.	Member	
10	Dr. K.Ravi, M.A., Ph.D. Lecturer in Telugu, SASJ Govt. Degree College, Narayanapuram	University Representative	Through online
11	Dr. K.V.S.P.B. Acharya, M.A., Ph.D. Lecturer in Sanskrit, CR Reddy College, Eluru, W.G.Dt.	University Representative	Through online
12	Sri M.Sreenivasa Rao, M.A., M.Phil. HOD of Telugu, CR Reddy College, Eluru, W.G.Dt.	Subject expert	Through online

13	Smt. N.Sri Valli, M.A. (M.Ed.) HOD of Telugu KGRL College, Bhimavaram	Subject expert	Through online
14	Smt. B.N.V.K.Valli, M.A. Lecturer in Sanskrit B.V.Raju Degree College, Bhimavaram	Subject expert	Through online
15	Dr. M.V.B.Gangadhar Rao, M.A., Ph.D. HOD of Sanskrit P.R. Govt.Degree College, Kakinada	Subject Expert	Through online
16	Sri M.Ramesh Lecturer in Telugu D.N.R.College (Autonomous), Bhimavaram.	Alumni Member	M. Ramesh
17	Sri G Manikyala Rao Sanskrit Pandit Z.P.O. High School, Taduru, W.G.Dt.	Alumni Member	G. Manikyala Rao
18	K.Chakra Pani, II B.A., Telugu	Student Representative	K. Chakrapani
19	M.Revathi, II B.Com. Sanskrit	Student Representative	M. Revathi

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
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I B.A., B.Sc., B.Com., Degree Courses
At the end of the Second Semester
Revised Choice Based Credit System (w.e.f. 2020-2021)
DEPARTMENT OF TELUGU
INDIA CULTURE AND SCIENCE
BOARD OF STUDIES MEETING

AGENDA

Subject 1	:	To review and continue the existing syllabi **INDIAN CULTURE AND SCIENCE** Skill Development Course - II for 2nd Semester in 1st year B.A. / B.Sc./ B.Com./B.Voc./BBA programmes under revised RCBCS from the academic year 2020-21 onwards
Subject 2	:	To review the model question paper, Blue print and structure of question Paper for the Skill Development Course - II **INDIAN CULTURE AND SCIENCE** for 2nd Semester in B.A/B.Sc./B.Com programmes under revised RCBCS from the academic year 2020-21 onwards.
Subject 3	:	To review and continue the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for the Skill Development Course -II, **INDIAN CULTURE AND SCIENCE** , for 2nd Semester in B.A/B.Sc./B.Com programmes under revised RCBCS for adoption and implementation from the academic year 2020-21 onwards.
Subject 4	:	To review and continue the list of recommended text books and reference books which are listed at the end of the syllabi of the respective Skill Development Course - II **INDIAN CULTURE AND SCIENCE**
Subject 5	:	Any other matter with the permission of chairman, board of studies.

Signature of the Members:

D.N.R.COLLEGE (AUTONOMOUS) – BHIMAVARAM
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Revised Choice Based Credit System (w.e.f. 2020-2021)
INDIAN CULTURE AND SCIENCE
BOARD OF STUDIES MEETING
DEPARTMENT OF TELUGU

RESOLUTIONS

Resolution 1	:	Resolved to continue Skill Development Course – II **INDIAN CULTURE AND SCIENCE**, for 2nd Semester in 1st year B.A/B.Sc./B.Com programmes under revised RCBCS for adoption and implementation from the academic year 2020-21 onwards.
Resolution 2	:	Resolved to continue the model question paper, Blue print and structure of question paper and question bank for the respective Skill Development Course - II **INDIAN CULTURE AND SCIENCE**, for 2nd Semester in B.A/B.Com/B.Sc programmes under revised RCBCS from the academic year 2020-21 onwards.
Resolution 3	:	Resolved to continue the allotment of Maximum marks, Qualifying marks, Instruction hours and credits allotted for the Skill Development Course - II **INDIAN CULTURE AND SCIENCE** , for 2nd Semester in B.A/B.Com/B.Sc programmes under revised RCBCS from the academic year 2020-21 onwards. Maximum Marks : 50 M Qualifying Marks : 20 M Instruction hours per week: 02 Credits Allotted : 02
Resolution 4	:	Resolved to continue the list of recommended text books and reference books which are listed at the end of the syllabi of the respective Skill Development Course - II **INDIAN CULTURE AND SCIENCE** , for 2nd Semester.
Resolution 5	:	Nil

Signature of the Members:

D.N.R.College (Autonomous), Bhimavaram

(Affiliated to AdikaviNannaya University)

Revised Choice Based Credit System (w.e.f. 2020-21)

SANSKRIT Syllabus (w.e.f:2020-21 A.Y)

CBCS SEMESTER WISE SYLLABUS

Part I (B) Subject : SANSKRIT

SEMESTER – I

PAPER – I : POETRY, PROSE & GRAMMAR . (w.e.f. 2020-21)

UNIT – I OLD POETRY: 1. "Arya Padukabhishekaha",
Valmiki Ramayanam- Ayodhya Kanda, Sarga-100 Geetha Press, Gorakhpur.
2. " YakshaPrasnaha", Mahabharatam of Vedavyasa, Vanaparva, Adhyaya -313, Geeta Press, Gorakhpoor.

UNIT – II MODERN POETRY: 1." Mevada Rajyastapanam" 4th Canto, Srimat Pratapa Ranayanam, Mahakavyam, Pt.Ogeti Parikshit sarma, Published by, Pt.Ogeti Parikshitsarma, 10/11, Sakal nagar, Pune, 1989.
2."VivekanandaSuktayaha", Vivekanandasuktisudha by Dr.SamudralaLakshmanaiah, Published by Author, 18-1-84, Yasoda Nagar, Tirupati. Selected Slokas 25.

UNIT – III PROSE: 1. "Atyutkataihi papapunyairihaiva phalamasnute",
Hitopadesaha-Mitralabha 2 & 3 stories, Pages 61-84.
2. " Sudraka -Veeravarakatha", Hitopadesaha-Vigraham, 8th story, Pages 63-70,Chowkhamba krishadas academy,Varanasi, 2006.

UNIT - IV GRAMMAR: 1.**DECLENSIONS**Nouns ending in vowels
Deva, Kavi, Bhanu, Dhatru, Pitru, Go, Ramaa, Mati.

2.CONJUGATIONS

1st Conjugation - Bhoo, Gam, Shtha, Drusir, Labh, Mud.

2nd Conjugation - As. 10th Conjugation – Bhaash.

UNIT – V GRAMMAR: 1. **SANDHI - Swara Sandhi** : Savarnadeergha, ayavayava, Guna,Vruddhi, yaanadesa.
-**Halsandhi**:Schutva, Stutva, Anunasika.2.**SAMASA**
Dwandwa, Tatpurusha, Karmadharaya,, Dwigu.

D.N.R College (Autonomous), Bhimavaram

(Affiliated to Adikavi Nannaya University)

Revised choice based credit system (w.e.f. 2020-2021)

MODEL QUESTION PAPER

I B.A., B.Com., B.Sc., B.Voc -Sanskrit

Paper – IA

Time : 3 Hours Mark : 75

सूचना : - द्वितीय-तृतीय-चतुर्थ-पञ्चम-दशम-प्रश्नाः अवश्यं संस्कृतभाषायामेव समाधेयाः ।

Q.No 2, 3, 4, 5 & 10 Should be answered in Sanskrit only.

प्रथमो भागः (25 Marks)

I. द्वौ श्लोकौ पूरयित्वा भावं च लिखत । 2 x 4 = 8

1. सान्त्विता मानिका - - - - - - - - राज्यमकण्टकम्॥
2. माता गुरुतरा - - - - - - - - - बहुतरी तृणात्॥
3. सत्यमेवेश्वरो - - - - - - - - परं पदम्॥
4. मानं हित्वा - - - - - - - - सुखी भवेत् ॥

II. द्वयोः सम्पूर्णशब्दरूपाणि लिखत । 2 x 3 = 6

1. कवि 2. भानु 3. पितृ 4. धातृ

III. द्वयोः धात्वोः निर्दिष्ट लकारे सर्वाणि रूपाणि लिखत । 2 x 2½ = 5

1. गमिष्यति 2. गोदते 3. भाषेत 4. अतिष्ठत्

IV. चतुर्णां सन्धिं सन्धत्त । 4 x 1 = 4

1. कपि + ईशः 2. गै + अकः 3. गङ्गा + ईशः 4. साधु + इति
5. कविस् + च 6. रामस् + षष्ठः 7. षट् + मुखः 8. तद् + जलम्

V. चतुर्णां नामनिर्देशपूर्वकं विग्रहवाक्यानि लिखत । 4 x 1 = 4

1. गुरुदक्षिणा 2. भूतबलिः 3. ग्रामगतः 4. कृष्णाभक्तः
5. आतपशुष्कः 6. अज्ञानम् 7. कृष्णसर्पः 8. शीतोष्णम्

द्वितीयो भागः (50 Marks)

VI. द्वयोः आन्ध्रभाषायाम् आङ्ग्लभाषायां वा अनुवदत । 2 x 2 = 4

1. जटिलं चीरवसनं प्राञ्जलिं पतितं भुवि ।
   ददर्श रामो दुर्दर्शं युगान्तो भास्करं यथा ॥
2. शरीरबलसम्पन्ना युवानश्शक्तिपूरिताः ।
   विद्यावन्तो महत्कार्यम् एतत् कर्तुं क्षमा भुवि ॥
3. दुर्जनः प्रियवादी च नैतद्विश्वासकारणम् ।
   मधुतिष्ठति जिह्वाग्रे हृदि हालाहलं विषम् ॥
4. किं स्विदादित्यमुन्नयति के च तस्याभितश्चराः ।
   कश्चैनमस्तं नयति कस्मिंश्च प्रतितिष्ठति ॥

VII. A. आर्यपादुकाभिषेकः इति शीर्षिकायाः औचित्यम् । 1 x 8 = 8

(अथवा)

B. यक्षप्रश्नानां वैशिष्ट्यं विशदयत ।

VIII. A. मेवाडराज्यस्यापनं वर्णयत । 1 x 8 = 8

(अथवा)

B. विवेकानन्द सूक्तयः इति पाठ्यभागस्य सारांशं लिखत ।

IX. A. "अत्युत्कटैः पापपुण्यैः इहैव फलमश्नुते" सोदाहरणं विवृणुत ? 1 x 8 = 8

(अथवा)

B. वीरवर कथं स्वामिभक्तिं प्रदर्शितवान् ?

X. चतुर्णां लघुसमाधानानि लिखत । 4 x 2 = 8

1. श्रीरामः भरतं किं प्रपञ्छ ?
2. किंस्वित् प्रवसतो मित्रम् ? किंस्वित मित्रं गृहे सतः ?
3. किं हित्वा अर्थवान् भवति ? किंन हित्वा सुखी भवेत् ?
4. जरद्गवी नाम गृध्रः कुत्र वसति ?
5. वीरवरस्य पुत्रः कः ?
6. राजा वीरवराय किं ददौ ?
7. वीश्वरः कस्य शिरः चिच्छेद ?
8. भरतः श्रीरामः किं अभ्यर्चितवान् ?

XI. चतुर्णां ससन्दर्भं व्याख्यात । 4 x 3 = 12

1) सत्ये लोकः प्रतिष्ठितः ।
2) एते हि सर्वलोकस्य योगक्षेमं विधास्यतः ।
3) अश्मनो हृदयं नास्ति नदी वेगेन वर्धते ।
4) लोभं हित्वा सुखी भवेत् ।
5) अकस्मादागन्तुना सह मैत्री न युक्ता ।
6) अहिंसा परमो धर्मः ।
7) यत्राऽपायः सम्भवति तत्रोपायोऽप्यस्ति।
8) जीवनान्तेऽपि तव राज्यभङ्गो नास्ति ।

D.N.R.College (Autonomous), Bhimavaram

(Affiliated to AdikaviNannaya University)

Revised Choice Based Credit System (w.e.f. 2020-21)

SANSKRIT Syllabus (w.e.f:2020-21 A.Y)

CBCS SEMESTER WISE SYLLABUS

Part I (B) Subject : SANSKRIT

SEMESTER – II

PAPER – II : POETRY, PROSE & GRAMMAR.

UNIT – I OLD POETRY:	1."Indumateeswayamvaram", Raghuvamsam of kalidasa, 6th canto, Chowkhamba krishadas academy, Varanasi-2012. 2. "Deekshaapradanam", Buddacharitam of Aswagosha, 16th canto. Selected verses.
UNIT – II MODERN POETRY:	1. "Gangavataranam", Bhojas Champu Ramayanam, Balakanda. 2. "Mohapanodaha", 4th cant. Dharma Souhrudam by P.Pattabhi Ramarao, , Published by Author, Ramanth Nagar. 3. "VandeKasmeerabharatam", by Doolypala Ramakrishna from Samskrita pratibha, sahitya academy , New Delhi -2018.
UNIT – III PROSE:	1. "Avantisundarikatha", 5th Chapter. Dasakumara Charitam, Purva peetika. 2. "Charudattacharitam", Bhasakathasaraha by Y.Mahalingasastry.
UNIT – IV GRAMMAR:	1. DECLENSIONS :Nouns ending in vowels Nadee, Janu, vadhoo, Matru, Phala, Vaari & Madhu. 2. CONJUGATIONS III Conjugation- Yudh, IV Conjugation- Ish, VIII Conjugation- Likh, Kru, IX Conjugation-Kreen X, Conjugation-Kath, Ram, Vand.
UNIT – V GRAMMAR:	1. SANDHI - Halsandhi : Latva, Jastva -Visarga sandhi: Utva, Visargalopa, Rephadesa, Ooshma. 2.SAMASA Avyayeebhava, Bahruvrihi.

D.N.R.COLLEGE-(AUTONOMOUS)- BHIMAVARAM-2

(AFFILIATED TO ADIKAVI NANNAYYA UNIVERSITY)

REVISED CHOICE BASED CREDIT SYTEM (W.E.F. 2020-2021)

I-B.A,B.COM,B.VOC B.Sc,BBA,B.Sc(Honours)

SANSKRIT-SEMISTER –II

MODAL PAPER

Time: 3hrs marks:75

सूचना - द्वितीय - तृतीय - चतुर्थ- पञ्चम - दशम - प्रश्नाः - संस्कृत भाषायामेव समाधेयाः।

Q.NO. 2,3,4,5 & 10 Should be Answered In Sanskrit only.

प्रथमो भागः (25 marks)

I. द्वौ श्लोकौ पूरयित्वा भावं च लिखत। 2X3=6

1. कुलेन कान्त्या ---------- काञ्चनेन।।
2. तया श्वश्रा ---------- वरेण्यः।।
3. भूषितो मुण्डितो ---------- धर्मकारणम्।।
4. कृतार्या ---------- दुःखिनः।।

II. द्वयोः सम्पूर्ण शब्दरूपाणि लिखत। 2X3=6

1. नदी 2. वारि 3. मातृ 4. वधू

III. द्वयोः धातोः लकारे सर्वाणिरूपाणि लिखत। 2X2½ = 5

1. करिष्यति 2. एषिष्यति 3. रमते 4. अवन्दत

IV. चतुर्णां नामनिर्देशपूर्वकं सन्धत्त। 4X1=4

1. विद्वान् + लिखति 2. वाक् + ईशः 3. नृपः + जयति
4. नरा + इमे 5. पितुः + इच्छा 6. हरिः + चलति
7. सुप् + अन्तः 8. शिवो + अहम्

V. चतुर्णां नामनिर्देशपूर्वकं विग्रहवाक्यानि लिखत। 4X1=4

1. समक्षम् 2. प्रत्यक्षम् 3. भुक्तोदनः 4. सपुत्रः
5. उपदशाः 6. अनरूपम् 7. महाबलः 8. शाकपति

द्वितीयो भागः (50 Marks)

VI. द्वयोः आन्ध्रभाषायां आंग्लभाषायां वा अनुवदत। 2X3=6

A. महीपाल, यदस्मिन्नम्बुजखण्डेऽनुष्ठानपरायणतया परमानन्देन तिष्ठन्तं नैष्ठिकं मामकारणं राजगर्वेणवमानितवानसि तदेतत्पाल्पना रमणीविरहसंतापमुभव इति।

B. सुभग कुसुमसुकुमारं चगदनवद्यं विलोक्य ते रूपम्। मम मानसमभिलषति त्वं चित्तं कुरु तया मृदुलम्।

C. क्रियावसाने सति इन्द्रजाल पुरुषः सर्वे गच्छन्तु भवन्तः इति द्विजन्मनोऽयेरुच्याने सर्वे मायामानता यथामन्तर्भवंगताः।

D. कः श्रद्धास्यति भूतार्थं सर्वो मा तुलयिष्यति।
शङ्कनीया हि दोषेषु निष्प्रभावा धरिद्रता।।

VII. a. स्वयं वारगतम् अजं सुनन्दां कथं वर्णयामास। 1X8=8

(अथवा)

b. शिष्येभ्यो दीक्षाप्रदानम् इत्यस्य पाठ्यभागस्य सारांश् लिखत।

VIII. a. गङ्गासरितः वैशिष्ट्यम् उपवर्णयत। 1X8=8

(अथवा)

b. मोहापनोदः पाठस्य सारं लिखत।

IX. ऐन्द्रजालिक वृत्तान्तं वर्णयत। 1X8=8

(अथवा)

चारुदत्तस्य चिरतं लिखत।

X. चतुर्णां लघुसमाधानानि लिखत। 4x2=8

1. इन्दमुती का।
2. भिक्षुश्च।
3. मनोरमा का।
4. दण्डिनः पितरौ कौ।
5. अजः कस्य पुत्रः।
6. राजवाहनः कस्यां अनुरागबध्दः।
7. कः विमुत्क्तः।
8. चारुदत्तः किमर्थं दरिद्रः जातः।
9. दण्डिनः कृती लिखत।
10. अवन्तिसुन्दर्याः पिता कः।

XI. चतुर्णां ससन्दर्भं वाक्यानि लिखत। 4x3=12

1. वृक्षान्तरं काङ्क्षति षट्पदाली।
2. कुमारं प्रत्यग्रहीत्संवरणसजेव।
3. पुत्रशोकाद् दिवं गतः।
4. पपात पार्वतीकान्तजटाकान्तारगह्वरे।
5. को भवान्। कस्यां विद्यायां निपुणः।
6. निः शङ्कमित आगम्यताम् इति।
7. सुखं स्वपिहि महाब्रहमणः।
8. सपट्टेन शीर्षेण त्वां प्रसादयामि।
9. रत्नं समागच्छतु काञ्चनेन।
10. को भवान्। कस्यां विद्यायां निपुणः।

D.N.R.College (Autonomous), Bhimavaram

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Revised Choice Based Credit System (w.e.f. 2020-21)

SANSKRIT Syllabus (w.e.f:2020-21 A.Y)

CBCS SEMESTER WISE SYLLABUS

Part I (B)Subject : SANSKRIT

SEMESTER – III

PAPER – III : Drama, Upanishad, Alankara and History of Literature.

UNIT – I : **OLD DRAMA**

1."**Madhyamavyayogaha**". Bhasa Natakachakram. krishadas academy, Varanasi 1998.

UNIT – II :MODERN DRAMA

"Sankalpabalam" by Prof.G.S.R.Krishna Murthy, Published by Semushi, R.S.Vidyapeetam, Tirupati-2019.

UNIT – III :UPANISHAD

1."**Sishyanusasanam**" – Sikshavalli of Taittireeyopanishad.

2. **"Sraddatrayavibhagayoga"**,

17th Chapter, Bhagavadgita, Geetapress, Gorakhpoor.

UNIT - IV : **1. ALANKARAS:**

1. Upama 2. Ananvaya 3. Utpreksha 4. Deepakam

5. Aprastutaprasamsa 6.Drushtanta 7. Prateepa.

2.HISTORY OF SANSKRIT LITERATURE

1.Panini 2.Kautilya 3.Bharatamuni 4. Bharavi 5.Magha

6.Bhavabhuti 7. Sankaracharya, 8.Jagannatha. 9. Dandi.

UNIT – V : **HALANTA SABDAS**

1.Jalamuch 2.Vaach 3.Marut 4.Bhagavat 5.Bhavat

6.Pachats 7. Naman 8.Rajan 9.Gunin 10.Vidwas 11. Manas.

D.N.R.COLLEGE-(AUTONOMOUS)- BHIMAVARAM-2

(AFFILIATED TO ADIKAVI NANNAYYA UNIVERSITY)

REVISED CHOICE BASED CREDIT SYTEM (W.E.F. 2020-2021)

II-B.A,B.COM,B.VOC B.Sc,SANSKRIT-SEMISTER –III

MODAL PAPER

Time: 3 hrs Max Marks:75

सूचना - प्रथम-तृतीय-चतुर्थी-पञ्चम-प्रश्नाः संस्कृत भाषायामेव समाधेयाः।

Q.No:1.3.4.5 should be answered in Sanskrit only.

प्रथमो भागः (24 marks)

I. द्वौ श्लोकौ पूर्णतया लिखत। 2x3=06

1. आयुः ---------- सात्विकप्रियः।।
2. देवद्विज---------- उच्यते।।
3. दातव्यमिति---------- स्मृतम्।।
4. ओं तत्सदिति ---------- पुरा।।

II. द्वयोः श्लोकयोः भावं लिखत। 2x2=04

1. कट्वाम्ललवणात्युष्ण तीक्ष्णरूक्षविदाहिनः।
   आहारा राजसस्येष्टा दुःख शोकामयप्रदाः।।
2. अनुद्वेगकरं वाक्यं सत्यं प्रियहितं च यत्।
   स्वाध्यायाभ्यसनं चैव वाङ्मयं तप उच्यते।।
3. मनः प्रसादसौम्यत्वं मौनमात्मविनिग्रहः।
   भावं संशुध्दिरित्येतत् तपो मानसमुच्यते।।
4. यातयामं गतरसं पूति पर्युषितं च यत्।
   उच्छिष्टमपि चामेध्यं भोजनं तामसप्रियम्।।

III. पञ्चानां लघुसमाधानानि लिखत।। 5x1=05

1. मध्यमव्यायोगस्य कर्ता कः।
2. मध्यमव्यायोगे मध्यमौ कौ।
3. माता कीदृशी।
4. पितृ हृदयानि कीदृशानि।
5. श्रुतिवचनं किम्।
6. गान्धिमहाशयस्य आत्मकथायाः नाम किम्।
7. मांस भक्षणे किं मलिनं भवति।
8. हिंसा नाशयितुम् का क्षमा।

IV. पञ्चानां लघुसमाधानानि लिखत।। 5x1=05

1. धर्ममूलं किम्। 2. प्रधानाः उपनिषदः कति सन्ति।
3. के दैव समानाः। 4. काभ्यां न प्रमदितव्यम्।
5. त्रिविधश्रध्दा का। 6. सात्विक दानं किम्।
7. वाङ्मयतपः किम्। 8. किं शरीरं तपः।

V. चतुर्णां निर्दिष्ट विभक्ति रूपाणि लिखत। 4X1=04

1. जलमुच् (प्रथम) 2. वाक् (द्वितीया) 3. भगवान् (तृतीया) 4. भवत् (चतुर्थी)
5. पचत् (षष्टी) 6. राजन् (सप्तमी) 7. विद्वस् (पञ्चमी) 8. मनस् (तृतीया)

द्वितीयो भागः (51 MARKS)

VI. अ) मध्यमव्यायोग रूपकस्य कथासारं लिखत। 1X8=8

(अथवा)

आ) भीमघटोत्कचयोः शीलं लिखत।

VII. अ) गान्धि महाशयस्य सङ्कल्पबलम् विशदयत। 1X8=8

(अथवा)

आ) सङ्कल्पबलम् रूपकस्य कथासारं लिखत।

VIII. अ) उपनिषत्सु प्रतिपादितं नैतिकजीवनं परिशीलयत। 1X8=8

(अथवा)

आ) श्रध्दात्रयविभागयोगस्य सारांशं लिखत।

IX. ससन्दर्भं वाक्यानि लिखत। 3X3=9

1. द्विजोत्तमाः पूज्यतमा - पृथिव्याम्। 2. दण्डं यथार्थमिह धारयितुं समर्थाः।
3. दमं दानं दयामिति। 4. श्रध्दया देयम्। अश्रद्धयाऽदेयम्।
5. मातृदेवो भव। 6. माता किल मनुष्याणां देवतानां च दैवतम्।

X. द्वयोः अलङ्कारयोः लक्ष्यलक्षण समन्वयं कुरुत। 2X5=10

1. उपमा 2. दृष्टान्तः
3. अनन्वयः 4. दीपकम्

XI. द्वयोः लघुविवरणं कुरुत । 2X4=8

1. पाणिनि 2. भारविः
3. माघः 4. कौटिल्यः

D.N.R COLLEGE (AUTONOMUS): BHIMAVARAM
BOARD OF STUDIES MEETING 2021-2022
DEPARTMENT OF ECONOMICS

Minutes of the Economics Board of studies meeting held on 15-11-2021 at 3-4 P.M through ONLINE in the Department of Economics D.N.R college (A) Bhimavaram

SL.NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	Sri G. Milton, Lecturer in-charge in Economics D.N.R College(A), Bhimavaram gudapatimilton2@gmail.com 9963285600	Chairman	
2	Smt.V.A.S. Sridevi Lecturer in Economics ,D.N.R College(A),Bhimavaram. yassridevi99@gmail.com 9492605925	Member	ONLINE
3	Dr.D.Madhu malathi Department of Economics, Ch.S.D.S.Theresa college for woman,Eluru madhumalathi@gmail.com 7981729235	University-Nominee	ONLINE
4	Sri.M.L.Narayana raju D.N.R Government College,for Women palakollu mlnraju.harash@gmail.com 9989844577	Subject Expert	ONLINE
5	I.Rama Chandra Murthy Principal, K.G.R.L collage(Autonomous),Bhimavaram Ramuinti55555@gmail.com 9493304898	Subject Expert	ONLINE
6	P.Sanjeev Rao Rtd.HOD of Economics srpolamuri@gmail.com 8096776164	Alumni Member	ONLINE
7	T.Bharat Chandra 3rd B.A,HEP, Roll no.15, D.N.R College(A),Bhimavaram. Turumanichandra8@gmail.com 9550864735	Student Representive	T. Bharat Chandra

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTEMENT OF ECONOMICS
BORAD OF STUDIES MEETING ON 15-11-2021 THROUGH ONLINE
AGENDA AND RESOLUTIONS

Subject No.1: To review and approve the syllabi for 3rd and 4th semester course (s) of Economics in papers III, IV & V for adoption and implementation under Revised Choice based credit system (RCBCS) for adoption and implementation
W. E. F. the academic year 2021-22 onwards.

Resolution No.1: Resolved to approve the syllabi for the 3rd and 4th semester course of Economics in papers III, IV & V for adoption and implementation under revised Choice based credit system (RCBCS) for adoption and implementation W. E. F. the academic year 2021-22 onwards.

Subject No.2: To approve the Introduction of English Medium in B.A. Economics in pursuance to the G.O.Ms.No.49 dt.,16-09-2021 issued by Government of A.P

Resolution No.2: Resolved to approve the Introduction of English Medium in B.A. Economics in pursuance to the G.O.Ms.No.49 dt.,16-09-2021 issued by Government of A.P

Subject No.3: To review and approve the structure of the question papers, model questionpapers for Economics course of paper III, IV &V with maximum marks 75 of 3rd and 5th semesters end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice based credit system (RCBCS) for Adoption and implementation W. E. F. the academic year 2021-22 onwards.

Resolution No.3: Resolved to approve structure of the question papers, model question papers for Economics course of paper III, IV &V with maximum marks 75 of 3rd and 4th semesters end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice based credit system (RCBCS) W. E. F. the academic year 2021-22 onwards.

Subject No.4: To approve the break-up of the internal assessment test marks 25 in 3rd and 4th semester Economics course(s) of papers III, IV & V for adoption and implementation under revised choice based credit system.

Resolution No.4: It is Unanimously resolved to approve the Break-up of marks of the internal assessment test 25 marks in 3rd and 4th semesters Economics course(s),paper III,IV &V as given below for the academic year 2021-22 for adoption and implementation under revised CBCS.

Written examination	15 Marks
assignment /seminar/multiple choice questions	5 Marks
Extra circularActivities	5 Marks

Subject No.5: To approve the qualifying marks in Economics course(s) for papers III, IV &V of 3rd and 4th semesters end theory examination for adoption and implementation under revised CBCS.

Resolution No5: It is Unanimously resolved to approve the qualifying marks inEconomics Course(s),papers III and IV putting together the marks secured in marks III & IV semester and examination and continuous assessment test, is 40% provided the qualifying marks of semester end examination is 26 marks out of 75 marks.

Subject No.6: To review the existing syllabi, model question papers of theoryof I and II semester Economics course in papers 3A,3B,4A,4B,5B,6B.

Resolution No.6: The existing syllabi, model question papers of theory of I,II,V&IV semester Economics course in papers 3A,3B,4A and 4B have been reviewed thoroughly and continued same.

Subject No.7: To design and approve the Certificate Course " Stock Market Operations" syllabus and Model question for II B.A. Degree Students w.e.f 2020-21 admitted batch.

Resolution No.7: Resolved to approve the Certificate Course " Stock Market Operations" syllabus and Model question for II B.A. Degree Students w.e.f 2020-21 admitted batch.

Subject No.8: To approve the list of recommended text books and referencebooks which are listed at the end of the syllabi of papers III, IV and V in economics course(s).

Resolution No.8: Resolved to procure latest editions of text books, referencebooks, journals, e-journals for library to make it more resourceful for both students and faculty member

Subject No.9. To organize National /International /Seminars/Webinars /Conferences.

Resolution No.9: It is unanimously resolved to organize National /International /Seminars/Webinars/Workshops/Conferences.

Subject No.10: Any other matter with the permission of the chair.

Resolution No.10: Nil.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination – At the End of THIRD Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA – III Semester

Paper -3 - **Development Economics**

SYLLABUS

B.Sc/B.A.	Semester – III	Credits: 4
Course:3	Development Economics	Hrs/Wk: 5

UNIT I:

Economic Growth and Development: Economic Development as a Branch of Study of Economics – Scope and Importance - Distinction between Economic Growth and Economic Development – **Factors Determining Economic Development** -Measures of Economic Development and their limitations - Relevance of Herd (Group) Immunity in the context of COVID 19 - three core values of economic development : Sustainability, Self-esteem and Freedom – Economy and Environmen : Concepts of sustainable development and inclusive growth.

UNIT II:

Modern Economic Growth: Characteristics of Underdeveloped Countries - World Bank and IMF Classification of countries - Modern economic growth – Kuznets' Six Characteristics - Obstacles to economic development - Vicious Circle of Poverty and cumulative causation - Factors of economic growth: Economic and Non-economic - Capital Formation – Foreign and Domestic capital, Debt and Disinvestment – **Dual Gap Analysis**

UNIT III:

Theories of Development and Underdevelopment: Classical Theory: Adam Smith, Ricardo and Malthus -Marxian Theory - Schumpeter Theory -Rostow's Stages of Economic Growth - Harrod- Domar two sector model -Solow's Model and Robinson's Golden Age.

UNIT IV:

Strategies of Economic Development: Strategies of Economic Development – Big Push - Balanced Growth -Unbalanced Growth - Mahalanobis Model - Agriculture vs Industry - Capital Intensive Technology vs Labour Intensive Technology -Role of Infrastructure in Economic Development.

UNIT V:

Institutions and Economic Development: Role of State in Economic Development -Role of Markets - Market Failure and Regulation by State -Public sector vs Private sector -Economic Planning – concept, objectives and types -NITI Ayog - Economic Federalism -Financial Institutions and Economic Development -Role of International Institutions-IDBI, ADB, IMF - Foreign Trade - FIIs and FDIs.

REFERENCE BOOKS:

1. Dhingra, I.C., ***Indian Economy,*** Sultan Chand, New Delhi, 2014.
2. Gaurav Datt and Ashwani Mahajan, ***Datt and Sundharam's Indian Economy***, S.Chand& Co.,2016.
3. G. M. Meier, ***Leading Issues in Economic Development,*** Oxford University Press, New

York,3/e.
4. M. P. Todaro and Stephen C. Smith, ***Economic Development***, 10/e, Indian EditionPublished by Dorling Kindersley India Pvt. Ltd.2012.
5. M. L. Koncham, Economic development and planning, Himalayapublications
6. S.K.Misra&V,K,Puri, ***Indian Economy***, Himalaya Publishing House,2015.
7. R.S.Rao, V.Hanumantha Rao &N.Venu Gopal (Ed.), ***Fifty Years of Andhra Pradesh(1956-2006),*** Centre for Documentation, Research and Communications, Hyderabad,2007.
8. G. Omkarnath, ***Economics - A Primer for India*** - Orient Blackswan,2012.
9. Economic development and growth, Spectrum Publishing House, Hyderabad,2016

Recommended Co-curricular Activities:

1. Assignments on the models and the strategies of economic development adopted in Indian economy
2. Student Seminar on development oriented themes relating to Indian economy
3. Quiz to test critical understanding of the fundamental concepts pf growth and development and the growth models and strategies
4. Group discussion on the effectiveness of the roles played by various institutions in India's economic development
5. Group project work to examine specific aspects of growth like poverty, unemployment, human development, gender development as Indian experience in the context of economic development preferably at the state and local level
6. Poster presentation

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination – At the End of THIRD Semester
2020-21 Batch · · RCBCS Syllabus (Semester wise)
Part – I (CORE) II BA – III Semester
Paper -3 - **Development Economics**
MODEL QUESTION PAPER

Time : 3 Hrs Max.Marks: 75

SECTION – A

Write Short Answer for any FIVE of the following
Each Question carries 5 Marks 5 x 5 = 25 M

1. Distinguish between Economic Development and Economics Growth
   ఆర్థిక వృద్ధి మరియు ఆర్థికాభివృద్ధికి మధ్య తేడా
2. Concept of Sustainable Development
   సుస్థికాభివృద్ధి భావన
3. World Bank and IMF Classification of Countries
   IMF మరియు ప్రపంచ బ్యాంకు దేశాల వర్గీకరణ
4. Foreign Disinvestment విదేశీ పెట్టుబడుల ఉపసంహరణ
5. What are Rostows Stages of Economic growth
   రోస్టో ఆర్థిక వృద్ధి దశలు
6. Capital Investment techniques మూలధన సాంద్రత పద్ధతి
7. NITI AYOG నీతి అయోగ్
8. Industrial Development Bank of India. భారతీయ పారిశ్రామికాభివృద్ధి బ్యాంకు

SECTION – B

Answer the following questions
Each Question carries 10 Marks 5 x 10 = 50 M

9 a. Economic Development as a Branch of Study of Economics – Explain
ఆర్థికాభివృద్ధి ఆర్థ శాస్త్ర అధ్యయన భాగం – వివరింపుము

Or

b. Explain the measures of Economic Development and bring out these limitation.
ఆర్థికాభివృద్ధికి కొలమానాలను వివరించి వాటి మినహాయింపులు తెలుపుము.

10 a. Explain the characteristic features of Un development countries
వెనుకబడిన దేశాల లక్షణాలను వివరింపుము

Or

b. Explain Kugnetis obstacles to Economic Development.
కుజ్నెట్స్ ఆర్థికాభివృద్ధి అవరోధాలను వివరింపుము.

11 a. Explain the Rortow's Stages of Economic Growth
రోస్టో ఆర్థికవృద్ధి ధశలను వివరింపుము

Or

b. Explain the Karl Marxian theory of Economic Growth
కారల్ మార్క్స్ ఆర్థిక వృద్ధి సిద్ధాంతమును వివరింపుము

12 a. Explain the Unbalanced Growth Strategy

అసంతులిత వృద్ధి భావనను వివరింపుము

Or

b. What are the choice of Techniques. Explain
ఉత్పత్తి పద్ధతుల ఎంపిక అనగానేమి? వివరింపుము

13 a. Write an essay on FDI's in India.

భారత దేశంలో విదేశీ ప్రత్యక్ష పెట్టుబడుల పై ఒక వ్యాసం వ్రాయండి.

Or

b. Explain the Functions of IMF
అంతర్జాతీయ ద్రవ్య నిధి యొక్క విధులను వివరింపుము.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination – At the End of THIRD Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA – III Semester

Paper -3 - **Development Economics**

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
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III B.A. Degree Examination – At the End of IV Semester
2020-21 Batch – RCBCS Syllabus (Semester wise)
Part – I (CORE) II BA – III Semester
Paper -4 - **Economic Development- India and Andhra Pradesh**
SYLLABUS

B.Sc/B.A.	Semester – IV	Credits: 4
Course:4	Economic Development- India And Andhra Pradesh	Hrs/Wk: 5

UNIT I:

Basic Features: Basic characteristics of Indian Economy as a developing economy – Economic development since independence - Objectives and achievements of planning -- Planning Commission/NITI Ayog and their approaches to economic development - India's Rank in Global Human Development Index .

UNIT II:

National Income and Demography: Features of Indian Population - Trends in National income - Demographic trends - Poverty and Inequalities -- Occupational Structure and Unemployment - Various Schemes of employment generation and eradication of poverty – Issues in Rural Development and Urban Development –Intra-state and Inter-state Labour Migration and unorganized sector Problems of Migrant Labour

UNIT III:

Agricultural and Industrial Developments: Indian Agriculture – Agricultural Strategy and Agricultural Policy – Agrarian Crisis and land reforms - Agricultural credit – Minimum Support Prices -Malnutrition and Food Security - Indian Industry - Recent Industrial Policy – Make-in India – Start-up and Stand-up programmes – SEZs and Industrial Corridors - Economic Reforms and their impact - Economic initiatives by government of India during COVID - Atmanirbhar Bharat package.

UNIT IV:

Indian Public Finance: Fiscal policy- Indian Tax System and Recent changes – GST and its impact on Commerce and Industry -- Centre, States financial relations- Recommendations of Recent Finance Commission – Public Expenditure and Public Debt – Concepts of Budget.

UNIT V:

Andhra Pradesh Economy: Objectives of Fiscal Policy - The basic characteristics of Andhra Pradesh economy after bifurcation in 2014 – Impact of bifurcation on the endowment of natural resources and state revenue -- new challenges to industry and commerce - the new initiatives to develop infrastructure – Power and Transport - Health and Education- Information Technology and e-governance – Urbanization and smart cities – Skill development and employment –Recent Social welfare programmes.

REFERENCE BOOKS:

1. Dhingra, I.C., ***Indian Economy***, Sultan Chand, New Delhi, 2014.
2. Gaurav Datt and Ashwani Mahajan, ***Datt and Sundharam's Indian Economy***,S.Chand& Co.,2016.
3. G. M. Meier, ***Leading Issues in Economic Development***, Oxford University Press,New York,3/e.
4. M. P. Todaro and Stephen C. Smith, ***Economic Development***, 10/e, Indian EditionPublished by Dorling Kindersley India Pvt. Ltd.2012.
5. P. K. Dhar, ***Indian Economy: Its Growing Dimensions, Kalyani Publishers,Ludhiana, 2018.***
6. Reserve Bank of India, ***Handbook of Statistics on Indian Economy***(Latest).
7. S.K.Misra&V,K,Puri, ***Indian Economy***, Himalaya Publishing House,2015.
8. R.S.Rao, V.Hanumantha Rao &N.Venu Gopal (Ed.), ***Fifty Years of Andhra Pradesh(1956-2006),*** Centre for Documentation, Research and Communications, Hyderabad,2007.
9. G. Omkarnath, ***Economics - A Primer for India*** - Orient Blackswan,2012.
10. A.P Economy- Telugu Academy, 2018

Recommended Co-curricular Activities:

1. Assignments on specific issues of contemporary importance with reference toproblems and remedial policies
2. Student Seminars on leading economic challenges, the effectiveness of relevantpolicies and programmes
3. Quiz to examine the knowledge and critical understanding of major policies,programmes achievements, failures relating to all sectors
4. Group discussions to promote critical understanding and evaluation capabilities of thestudents on major areas of Indian and AP economy
5. Group project work to study the implementation and effectiveness of major government schemes of development, poverty eradication and employment promotionetc.,
6. PPT presentation and participation in webinars to help the students acquire andadopt ITC skills in the process of learning
7. Field Visits to Agricultural farm/market/SSIs to understand the ground realities ofeconomic situation of the country and the state.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.A. Degree Examination – At the End of IV Semester
2020-21 Batch – RCBCS Syllabus (Semester wise)
Part - I (CORE) II BA – III Semester
Paper -4 - **Economic Development- India And Andhra Pradesh**
MODEL QUESTION PAPER

Time : 3 Hrs Max.Marks: 75

SECTION – A

Write Short Answer for any FIVE of the following
Each Question carries 5 Marks 5 x 5 = 25 M

1. NITI AYOG
   నీతి అయోగ్
2. Global Human Development
   ప్రపంచ మానవాభివృద్ధి సూచి
3. Eradication of Poverty
   పేదరిక నిర్మూలన
4. Inter State Labour Migaration
   అంతర రాష్ట్ర వలస కార్మికులు
5. Food Security
   ఆహార భద్రత
6. SEZ
   ప్రత్యేక ఆర్థిక మండలులు
7. Public Expenditure
   ప్రభుత్వ వ్యయాలు
8. Health Programmes in AP
   ఆరోగ్య పధాకాలు ఆంధ్రప్రదేశ్

SECTION – B

Answer the following questions
Each Question carries 10 Marks 5 x 10 = 50 M

9 a. Basic Characteristics of Indian Economy
భారత ఆర్థిక వ్యవస్థ లక్షణాలు వివరింపుము

Or

b. Explain the objectives of 5 year plan in India.
భారత పంచవర్ష ప్రణాళిక లక్ష్యాలు, సాధించిన ప్రగతి

10 a. Explain Trends in National Income
జాతీయ ఆదాయ వృద్ధి పోకడలు వివరింపుము.

Or

b. Explain the Agricultural Strategy and Agricultural policy
వ్యవసాయ అభివృద్ధి వ్యూహాలు మరియు విధానములు వివరింపుము.

11 a. Explain the Agricultural crisis and land reforms.
వ్యవసాయ సంక్షోభము మరియు భూసంస్కరణలను వివరింపుము.

Or

b. Explain the Tax system and resent changes in Indian Economy

12 a. Write an essay on Atmanirbhar bharat package

ఆత్మ నిర్భర్ పేకేజి గూర్చి వివరింపుము

Or

b. Explain the Recent recommendations of Finance commission

ఆర్థిక సంఘము క్రొత్తగా చేసిన ప్రతిపాదనలను వివరింపుము.

13 a. Explain the basic characteristics of AP economy after bifurcation in 2014

ఆంధ్రప్రదేశ్ విభజన అనంతరం లక్షణాలను వివరింపుము.

Or

b. Explain the Recent recommendations of Finance commission

ఇటీవల కాలంలో ఆర్థిక కమీషన్ చేసిన సిఫార్సులను వివరించండి

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination - At the End of IV Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA – III Semester

Paper -4 - **Economic Development- India And Andhra Pradesh**

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.A. Degree Examination – At the End of IV Semester
2020-21 Batch – RCBCS Syllabus (Semester wise)
Part – I (CORE) II BA – III Semester
Paper -5 **- Statistical Methods for Economics**

SYLLABUS

B.Sc/B.A.	Semester – IV	Credits: 4
Course:5	Statistical Methods for Economics	Hrs/Wk: 5

UNIT I:
Nature and Definition of Statistics: Introduction to Statistics – Definition, scope, importance and limitations of Statistics – Primary and Secondary data- Census and Sampling techniques and their merits and demerits.

UNIT III:
Diagrammatic Analysis: Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation - diagram and graphic presentation of data – Histogram, Frequency Polygon, Cumulative Frequency Curves - Bar Diagrams and Pie Diagram.

UNIT IV:
Measures of Central Tendency and Dispersion: Measures of Central Tendency and Dispersion - Types of averages- Arithmetic Mean, Geometric Mean, Harmonic Mean – Median – Mode – Dispersion - Range, Quartile Deviation, Mean Deviation, Standard Deviation- Coefficient of Variation.**Correlation and Regression:** Correlation and Regression - Meaning, Definition and uses of Correlation- Types of Correlation- Karl Pearson's Correlation coefficient - Spearman's Rank Correlation- Regression Equations - utility of regression analysis – Demand forecasting.

UNIT V:
Time Series and Index Numbers: Time Series and Index Numbers: Definition and components of Time Series – Measurement of Time Series – Moving Average and the Least Squares Method – Index Numbers - Concepts of Price and Quantity Relatives - Laspeyer's, Paasche's and Fisher's Ideal Index Numbers – Uses and Limitations of IndexNumbers.

REFERENCE BOOKS:

1. B. R. Bhat, T. Srivenkataramana and K.S. MadhavaRao (1996): ***Statistics: ABeginner's Text,*** Vol. I, New Age International (P)Ltd.
2. Goon A.M, Gupta M.K., Das Gupta B. (1991), ***Fundamentals of Statistics,*** Vol. I,World Press,Calcutta.
3. M. R. Spiegel (1989): ***Schaum's Outline of Theory and Problems inStatistics***
4. F.E.Croxton,D.J.CowdenandS.KelinS(1973),***AppliedGeneralStatistics,***Prentice Hall of India. 2.
5. S.P. Gupta, ***Statistical Methods*** , S. Chand & Co,1985
6. S. C. Guptha, ***Fundamentals of Statistics,*** Himalaya Publishing House,Hyderabad.
7. Digambar Patri and D. N. Patri, ***Statistical Methods for Economics,*** KalyaniPublishers, Ludhiana, 2017.
8. Telugu Akademy Book, ParimanathmakaPaddathulu (ForB.A.).

Recommended Co-curricular Activities:

1. Assignments of the application of various statisticalmethods
2. Student Seminar on themes requiring usage of tables, diagrams, statistical analysis andinterpretation
3. `Group project work for collection of data on locally relevant economicproblems
4. Market survey on demand, supply, sales, prices of different kinds of projects like fooditems, FMCG, other consumable durables etc., etc., and Statistical Analysis- Mini Project and also income elasticity of demand for suchproducts

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
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III B.A. Degree Examination – At the End of IV Semester
2020-21 Batch – RCBCS Syllabus (Semester wise)
Part - I (CORE) II BA – III Semester
Paper -5 - **Statistical Methods for Economics**
MODEL QUESTION PAPER

Time : 3 Hrs Max.Marks: 75

SECTION – A

Write Short Answer for any FIVE of the following
Each Question carries 5 Marks 5 x 5 = 25 M

1. Primary Data
   ప్రాథమిక దత్తాంశం
2. Quentinary
   ప్రశ్నావళి
3. Frequency Series
   పౌనఃపున్య శ్రేణులు
4. Features of a good average
   మంచి సగటు లక్షణాలు
5. Types of Correlation
   సహ సంబంధం యొక్క రకాలు
6. Distinguish between the concepts of correlation and regression analysis.
   సహ సంబంధ మరియు ప్రతిగమనం భావనల మధ్య తేడా
7. Compounds of Time series
   కాలశ్రేణుల భాగాలు
8. Uses of Index Numbers
   సూచీ సంఖ్యల ఉపయోగాలు

SECTION – B

Answer the following questions
Each Question carries 10 Marks 5 x 10 = 50 M

9 a. Define statistics. Explain the Scope , Importance and limitation of Statistics.
గణాంక శాస్త్రం ను నిర్వచించి, గణాంక శాస్త్రం యొక్క పరిధి , ప్రాముఖ్యత మరియు పరిమితులు వివరింపుము.

Or

b. What is Primary Data? Discuss the different methods of collecting primary data and these merits and demerits.
ప్రాథమిక ధత్తంశము అనగానేమి? ప్రాథమిక దత్తాంశాన్ని సేకరించే వివిధ పద్ధతులను వాటి గుణదోషాలను వివరింపుము

10 aWhat is a schedule and a questionnaire. Explain the essentials of a good questionnaire.
షెడ్యూల్ మరియు ప్రశ్నావళి అనగానేమి? మంచి ప్రశ్నావళికి ఉండవలసిన లక్షణాలు ఏవి?

Or

b. What is frequency is distribution. Explain the types of frequency distribution.

పౌనఃపుణ్య విభజనము అనగానేమి? పౌనఃపుణ్య విభజనము యొక్క రకాలను వివరింపుము.

11 a. What are the measures of central tendency. Explain its merits and demerits.

కేంద్ర స్థానపు కొలతలను తెలిపి వాటి గుణదోషాలను వివరింపుము.

Or

b.Compute co-efficient of quartile deviation for the following data

ఈ దత్తాంశమునకు చతుర్థాంశ విచలనం యొక్క గుణకమును కనుగొనుము.

CI తరగతులు	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency పౌనఃపున్యము	8	4+	22	30	24	12	6

12 a. Compute Rank Correlation from the following table

ఇవ్వబడిన దత్తాంశమునకు కోటి సహ సంబధ గుణకాన్ని లెక్కించండి.

X	415	434	420	430	424	428
Y	330	332	328	331	327	325

Or

b. Find the regression lines from the given data

ఇవ్వబడిన దత్తాంశమునకు ప్రతిగమన రేఖలను కనుగొనుము

X	1	2	3	4	5
Y	11	20	17	25	27

13 a. Define Time Series and Explain how the time series are measured.

కాలశ్రేణులను నిర్వచించి, కాలశ్రేణులు ఎలా గణించవచ్చునో వివరింపుము.

Or

b. Compute Larpeyes Paarele's and Fisher's quantity index number for the following data

ఇవ్వబడిన దత్తాంశమునకు లాస్పియర్స్, పాషే, ఫిషర్ పరిమాణ సూచి సంఖ్యలను కనుగొనుము.

Commodity	Base year		Current Year	
	Quantity	Price	Quantity	Price
A	12	10	15	12
B	15	07	20	05
C	24	05	20	09
D	05	16	05	14

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

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III B.A. Degree Examination – At the End of IV Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA - III Semester

Paper -5 - **Statistical Methods for Economics**

Instructions to paper setters

Time : 3 Hrs

Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination – At the End of IV Semester
CERTIFICATE COURSE FOR II BA STUDENTS

TITLE : STOCK MARKET OPERATIONS

(w.e.f. 2020-21 admitted batch)
SYLLABUS

Module -- 1: Meaning, Nature and Functions of Primary Market - Role of Primary Market-- Methods of floatation of capital – Problems of New Issues Market –SEBI measures for primary market.

Module – 2: Meaning, Nature, Functions of Secondary Market - Organisation and Regulatory framework for stock exchanges in India – Defects in working of Indian stock exchanges.

Module - - 3: Listing of Securities : Meaning – Merits and Demerits

Module - - 4 Listing requirements, procedure, fee – Listing of rights issue, bonus issue, further issue – Listing conditions of BSE and NSE.

Suggested Readings:

1.Punithavathy Pandian, Security Analysis and Portfolio Management Vikas Publishing House Pvt. Ltd.

2.V. A. Avadhani, Investment and Securities Market in India, Himalaya Publishing House.

3.Prasanna Chandra, Security Analysis and Portfolio Management, Tata McGraw-Hill.

4.Sanjeev Agarwal, A Guide to Indian Capital Market, Bharat Publishers

5. Ravi Puliani and Mahesh Puliani, Manual of SEBI, Bharat Publication

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the End of IV Semester

CERTIFICATE COURSE FOR II BA STUDENTS

TITLE : STOCK MARKET OPERATIONS

(w.e.f. 2020-21 admitted batch)

MODEL QUESTION PAPER

Answer any Five of the following questions **5 x 10 = 50 M**

1. What is meant by Primary Market? Explain the function of the Primary Market.
2. Analysie the Problems of New Issues of Stock Market
3. What is meant by Secondary Market? Explain the function of the Secondary Market.
4. Explain the functions of SEBI
5. Discuss the Defects in working of Indian stock exchanges.
6. Explain the Listing of Securities merits and demerits
7. Elucidate the Listing requirements, procedure of Stock Markets.
8. Discuss the BSE and NSE

D.N.R.COLLEGE(AUTONOMOUS):: BHIMAVARAM
BOARD OF STUDIES MEETING 2021-22
DEPARTMENT OF POLITICS

List of Members

SL. NO	NAME OF THE PERSON	DESIGNATION	
1	Sri M. Srinivas Lecture-in-Charge D.N.R.College(A), Bhimavaram	Chairman	M. Srinivas
2	Smt S.Usha Rani Lecturer in Politics D.N.R.College(A), Bhimavaram	Member	Attend online
3	Smt.R.Chittamma, Lecturer in Politics Department of Politics, Ch.S.D.S.Theresa's College for Women,Eluru	University Nominee	Absent
4	Dr.K.S.V.Ranga Rao Lecturer in Politics D.N.R.Government College Palakol Cell: 9440832144 svr.gakarunila@gmail.com	Subject Expert	online
5	Sri N.Srinivasa Rao Head, Department of Politics Sir C.R.Reddy College Eluru Cell: 9441447057	Subject Expert	online
6	Dr.G.David Livingstone Former Principal, D.N.R.College(A),Bhimavaram	Special Invitee	online
7	Sri A.B.Baig, Retd., Lecturer, D.N.R.College(A), Bhimavaram	Alumni Member	online
8	Mr.T Mahesh III B.A – HEP, Roll NO.20, D.N.R.College(A), Bhimavaram	Student Representative	online

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

BOARD OF STUDIES MEETING NOTICE

DEPARTMENT OF POLITICS

There will be a meeting of the Board of Studies in Politics, D.N.R. College(A), Bhimavaram through online on Thursday the **15-11-2021 at 02.00 P.M** to discuss and decide on the following subjects.

All the members are requested to attend the meeting without fail.

AGENDA

Subject No. 1 : To approve the syllabi for 3rd and 4th Semester course of B.A. Politics in papers III & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject No. 2 : To approve the structure of the question papers, model question papers for B.A. Politics course of Paper III & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject No. 3: To review the break-up of the Internal assessment test marks 25 in III and IV semester B.A. Politics course of papers III and V for adoption and implementation under Revised Choice Based Credit System.

Subject No.4: To approve the qualifying marks in B.A. Politics Course for papers I and II of 1st and 2nd semester end theory examination for adoption and implementation under revised CBCS.

Subject No. 5: To review the model question paper and abstract question papers of V and VI semesters of III B.A. with the maximum marks: 75 for semester End examinations and abstract question papers and model question papers of Internal assessment test with maximum marks: 25 for adoption and implementation form the academic year 2021-22 under CBCS(admitted batch of 2018-21)

Subject No. 6: To review the breakup of the internal assessment test marks: 25 of V and VI Semesters of III BA Degree Courses given below for adoption and implementation from the academic year 2021-22 under CBCS (admitted batch of 2018-21)

a) Written Examination : 15 Marks
b) Assignment / Seminar : 05 Marks
c) Co-curricular activities : 05 Marks
d)

Subject No.7: To review the existing syllabi, model question papers of both theory of V and VI semester B.A. Politics course in papers 3, 4,5, 4A, 4B, 5B, 6B.

Subject No. 8: To approve the syllabus for Certificate course Gandhian Studies and Ambedkar Studies and Bridge Course.

Subject No.9: To approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III and IV in II B.A. Politics Course

Subject No.10: To procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, E-journals for library to make it more resourceful for both students and faculty members.

Subject No. 11: To organize National / International / Seminars / Webinars / Workshops / Conferences.

Subject No. 12: Chairman of Board of Studies is authorized to include, delete or make any sort of modification in any subject(s) duly following the guidelines, communicated by the affiliating university/ APSCHE.

Subject No. 13: Any other matter with the permission of the chair.

Chairman
Board of Studies in Politics
D.N.R.College (Autonomous),Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
BOARD OF STUDIES MEETING
Resolutions

Resolution No. 1 : It is Resolved to approve the syllabi for 3rd and 4th Semester course of B.A. Politics in papers III & IV for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Resolution No.2 : It is Resolved to approve the structure of the question papers, model question papers for B.A. Politics course of Paper IIII & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No. 3: It is Resolved to approve the break-up of the Internal assessment test marks 25 in III and V semester B.A. Politics course of papers III and V for adoption and implementation under Revised Choice Based Credit System.

Resolution No.4: It is Resolve to approve the qualifying marks in B.A. Politics Course for papers I and II of 1st and 2nd semester end theory examination for adoption and implementation under revised CBCS.

Resolution No. 5: It is Resolved to design and approve the model question paper and abstract question papers of V and VI semesters of III B.A. with the maximum marks: 75 for semester End examinations and abstract question papers and model question papers of Internal assessment test with maximum marks: 25 for adoption and implementation form the academic year 2021-22 under CBCS(admitted batch of 2018-21)

Resolution No.. 6: It is Resolved to approve the breakup of the internal assessment test marks: 25 of V and VI Semesters of III BA Degree Courses given below for adoption and implementation from the academic year 2021-22 under CBCS (admitted batch of 2018-21)

a) Written Examination : 15 Marks
b) Assignment / Seminar : 05 Marks
c) Co-curricular activities : 05 Marks

Resolution No..7: It is Resolved to review the existing syllabi, model question papers of both theory of V and VI semester B.A. Politics course in papers 3, 4, 5, 4A, 4B, 5B, 6B.

Resolution No. 8: It is Resolve to approve the syllabus for Certificate course Gandhian Studies and Ambedkar Studies and Bridge Course.

Resolution No..9: It is Resolved to approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III and IV in II B.A. Politics Course

Resolution No..10: It is Resolved to procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, E-journals for library to make it more resourceful for both students and faculty members.

Resolution No.. 11: It is Resolve approve to organize National / International / Seminars / Webinars / Workshops / Conferences.

Resolution No.. 12: It is Resolve to approve Chairman of Board of Studies is authorized to include, delete or make any sort of modification in any subject(s) duty following the guidelines, communicated by the affiliating university/ APSCHE.

Resolution No. 13: Nil

Chairman
Board of Studies in Politics
D.N.R.College (Autonomous),Bhimavaram

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination – At the End of THIRD Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA – III Semester

Paper -3 - **Indian Government And Politics**

SYLLABUS

B.A	Semester: III	Credits: 4
Course: 3	Indian Government And Politics	Hrs/Wk: 5

Learning Outcomes:

On successful completion of the course the students will be able to:

- Acquire knowledge about the historical background of Constitutional development In India,appreciate philosophical foundations and salient features of the Indian Constitution.
- Analyze the relationship between State and individual Interms of Fundamental Rights andDirective Principles of State Policy.
- Understand the composition of and functioning of Union Government as well as State Government and finally
- Acquaint themselves with the judicial system of the country and its emerging trends such asjudicial reforms.

UNIT I:

SOCIAL AND IDEOLOGICAL BASE OF THE INDIAN CONSTITUTION:

1. Constitutional Development in India during British Rule-A Historical Perspective withreference to Government of India Acts, 1909,1919and 1935.
2. Constituent Assembly-Nature, Composition, Socio-Economic, Philosophical Dimensions and Salient Features of the Indian Constitution.

UNIT II:

INDIVIDUAL AND STATE:

1. Fundamental Rights, Directive Principles of State Policy and Fundamental Duties-Differences between Fundamental Rights and Directive Principles of State Policy.
2. The 'Doctrine of Basic Structure of the Constitution' with reference to Judicial Interpretationsand Socio-Political Realities.

UNIT III:

UNION EXECUTIVE:

1. President of India-Mode of Election, Powers and Functions.
2. Parliament-Composition, Powers and Functions, Legislative Committees, Prime Minister and Council of Ministers-Powers andFunctions, Role in Coalition Politics

UNIT IV:

STATE EXECUTIVE:

1. Governor-Mode of Appointment, Powers and Functions.
2. Legislature-Composition, Powers and Functions, Chief Minister and Council of Ministers-Powers and Functions

UNIT V:

THE INDIAN JUDICIARY:

1. Supreme Court-Composition and Appointments, Powers and Functions or Jurisdiction ofthe Supreme Court, Judicial Review, Judicial Activism.
2. High Court-Composition, Powers and Functions, Debates on the mode of appointment ofJudges-National Judicial Appointments Commission and Judicial Reforms.

REFERENCE BOOKS:

➢ M.V.Pylee	:	*Indian Constitution, Constitutional Government in India Constitutional History of India*
➢ Durga Das Basu	:	*An Introduction to the Constitution of India*
➢ Rajni Kothari	:	*Politics in India*
➢ SanghMittra	:	*Indian Constitution Acts (East India Company to Independence)*
➢ Hoshiar Singh, P.C.Mathur&Pankaj Singh (ed)	:	*Coalition Governments & Good Governance*
➢ B.C.Fadia	:	*Indian Government and Politics*
➢ SubhashC.Kashyap	:	*Concise Encyclopedia of Indian Constitution*
➢ P.B.Rathod&VimlaRathod	:	*Indian Constitution, Government and Political System*
➢ Verinder Grover (ed)	:	*Federal System, State Autonomy and Centre-State Relations in India.*
➢ Prof.Lalaiah,P.Venkataramana, K.SaiBaba&K.Mallesam, Prof.V.RaveendraSastry (ed)	:	*Indian Government-Politics*
➢ M.Lakshmikant	:	*Indian Polity*
➢ R.C.Agarwal& Mahesh Bhatnagar	:	*Constitutional Development and National Movement of India*
➢ Singh &Saxena	:	*Indian Politics : Contemporary Issues and Concerns*
➢ Austin Granville	:	*The Indian Constitution : Cornerstone of a Nation, Working of a Democratic Constitution : The Indian Experience*
➢ W.H.Morris Jones	:	*Government and Politics of India*
➢ M.P.Jain	:	*Indian Constitutional Law*
➢ Subhash C. Kashyap.	:	*Our Constitution, Our Parliament, Our Political*

		System
➢ A.S.Narang	:	*Indian Political System, Process and Development*
➢ Rajeev Bhargav	:	*Politics and Ethics of the Indian Constitution*
➢ Bipin Chandra	:	*Nationalism & Colonialism in Modern India*
➢ Paul R.Brass	:	*The Politics in India since Independence*
➢ K.SubrataMitra	:	*Politics in India : Structure, Process and Policy*
➢ S.H.Patil	:	*The Constitution, Government and Politics in India*
➢ VishnooBhagwan&VidyaBhusan	:	*Indian Administration*

ANNEXURE

CO-CURRICULAR ACTIVITIES

- All Co-curricular activities recommended at Course – I
- Peers and self-assessment outputs from individual and collaborative work.
- Individual observations in field studies and recordings in the areas related to syllabus
- Conduct of a Mock Parliament on important current issues for awareness about the proceedings of the Parliament, intensity of debates and understanding the outcomes.
- A Field Visit to a Court to observe the structure and its exercise of powers.
- Discussion of Previous Question Courses relating to Services (Service Commissions and other Recruitment Agencies) for an understanding of different approaches
- Study projects on selected local real time problems.

Approved

Chairperson
Board of Studies in Politics
D.N.R.College(Autonomous), Bhimavaram.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination – At the End of THIRD Semester
2020-21 Batch – RCBCS Syllabus (Semester wise)
Part – I (CORE) II BA – III Semester
Paper 3 - **Indian Government And Politics**
MODEL QUESTION PAPER

Time : 3 hrs Max.Marks : 75

SECTION A

(Answer any **five questions.** Each question carries **5 marks** (Total: 5x5=25 Marks)

1	Drafting Committee	-	రాజ్యాంగ రచనా కమిటీ
2	Amending Procedure of Constitution.	-	రాజ్యంగ సవరణ విధానము
3	Indian Federation		భారత సమిళ్య
4	Independent Judiciary	-	స్వతంత్ర ప్రతిపత్తిగల న్యాయస్థానం.
5	Financial Relations.	-	ఆర్థిక సంబంధములు
6	Concurrent list	-	ఉమ్మడి జాబితా
7	Right to equality	-	సమానత్వపు హక్కు
8	Right to Freedom of Religion	-	మత స్వాతంత్రపు హక్కు

SECTION B

(Answer all **questions.** Each question carries **10 marks** (Total: 5x10 = 50 Marks)

9 A) Explain the composition of Constituent Assembly of India.
భారత రాజ్యాంగ పరిషత్ నిర్మాణము వివరించుము.

or

B)Explain the History of Freedom movement of India.
భారత స్వాతంత్ర ఉద్యమ పోరాట చరిత్రను వివరించుము.

10 A) Describe the preamble of Indian Constitution.
భారత రాజ్యంగ పీఠికను వర్ణించుము.

or

B) Discuss the Basic Features of Indian Constitution.
భారత రాజ్యాంగ మౌళిక సూత్రాలను వివరించండి.

11 A) Write an essay on Fundamental Rights.
ప్రాధమిక హక్కులను గురించి ఒక వ్యాసం వ్రాయండి.

or

B) Explain the directive Principles of state policy.
ఆదేశ సూత్రములను వివరించండి.

12 A) Explain the importance of Directive Principles of State Policy
నిర్దేశిక నియమాలన ప్రాముఖ్యతను వివరించండి.

or

B) Explain the unitary and federal features of Indian constitution
భారత రాజ్యాంగ ఏక కేంద్ర – సమాఖ్య లక్షణాలను వివరించండి.

13 A) Write an essay on the composition of Supreme Court of India.
సుప్రీంకోర్టు నిర్మాణమును వివరింపుము.

or

B) Write an essay on Higher Judiciary in India.
భారత దేశంలో ఉన్నత న్యాయ స్థానం గురించి వ్యాసము వ్రాయుము.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination At the End of THIRD Semester

2020-21 Batch – RCBCS Syllabus (Semester wise)

Part – I (CORE) II BA – III Semester

Paper 3 - **Indian Government And Politics**

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with Potential for Excellence)

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the end of IV Semester

Paper-IV – B.A POLITICS – Paper -4

(w.e.f 2020-21 admitted batch) RCBCS – Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : INDIAN POLITICAL PROCESS

B.A	Semester: IV	Credits: 4
Course: 4	INDIAN POLITICAL PROCESS	Hrs/Wk: 5

Learning Outcomes:

On successful completion of the course the students will be able to :

- Know and understand the federal system of the country and some of the vital contemporary emerging issues.
- Evaluate the electoral system of the country and to identify the areas of electoral reforms.
- Know the constitutional base and functioning of local governments with special emphasison73rd& 74th Constitutional Amendment Acts.
- Understand the dynamics of Indian politics, challenges faced and gain a sensitive comprehension to the contributing factors.
- Apply the knowledge and critically comprehend the functioning of some of the regulatoryandgovernance institutions.
- Propose theoretical outline alternate models.

UNIT I:

FEDERAL PROCESSES:

1. Features of Indian Federal System- Centre-State Relations-Legislative, Administrative and Financial.
2. Emerging Trends in Centre-State Relations-Restructuring Centre- State Relations-Recommendations of Sarkaria Commission, M.M.Punchi Commission.

UNIT II:

ELECTORAL PROCESSES:

1. The Election Commission of India, Powers and Functions.
2. Issues of Electoral Reforms, Voting Behaviour-Determinants and Problems of Defections.

UNIT III:

GROSSROOT DEMOCRACY-DECENTRALISATION:

1. Panchayat Raj system-Local and Urban Governments-Structure, Powers and Functions.
2. Democratic Decentralization-Rural Development and Povertyalleviation with reference to 73rd and 74th Constitutional Amendment Acts, Challenges and Prospects.

UNIT IV:

SOCIAL DYNAMICS AND EMERGING CHALLENGES TO INDIAN POLITICAL SYSTEM:

1. Role of Caste, Religion, Language and Regionalism In India.
2. Politics of Reservation, Criminalization of Politics and Internal threats to Security.

UNIT V:

REGULATORY AND GOVERNANCE INSTITUTIONS:

1. NITI Ayog, Finance Commission, Comptroller and Auditor General of India.
2. Central Vigilance Commission, Central Information Commission, Lokpal and Lokayukta.

REFERENCE BOOKS:

➢ M.V.Pylee	:	*Indian Constitution* *Constitutional Government in India*
➢ D.D.Basu	:	*An Introduction to the Constitution of India*
➢ Rajni Kothari	:	*Politics in India, Caste in Indian Politics*
➢ PeuGhosh	:	*Indian Government and Politics*
➢ Prof.Lalaiah, P.Venkataramana, K.SaiBaba&K.Mallesam, Prof.V.RaveendraSastry (ed)	:	*Indian Government-Politics*
➢ M.R.Biju	:	*Democratic Political Process*
➢ J.K.Chopra (ed)	:	*Local Self-Government and Municipal Administration*
➢ Susan Bayly	:	*Caste, Society and Politics in India (From the Eighteenth Century to the Modern Age)*
➢ SubharataDutta	:	*Democratic Decentralisation and Grossroot Leadership in India*
➢ H.V.Hande	:	*Dr.B.R.Ambedkar& The Making of the Indian Constitution*
➢ S.K.Sharma&UshaSarma	:	*Politics and Administration in India- A Retrospective Survey*
➢ Hari Prasad Chhetri	:	*Panchayatraj System and Development Planning*
➢ B.C.Fadia	:	*Indian Government and Politics*
➢ UpendraBaxi&Biku Parekh	:	*Crisis and Change in Contemporary India*
➢ M.Lakshmikant	:	*Indian Polity,Governance in India*
➢ N.G.Jayal (ed)	:	*Democracy in India*
➢ Peter Ronald deSouza&E. Sridharan	:	*India's Political Parties*
➢ O.P.Tiwari	:	*Federalism and Centre-State Relations in India*
➢ AthulKohli (ed)	:	*The Success of India's Democracy*
➢ C.B.Raju	:	*Social Justice and the Constitution of India*
➢ V.K.Garg	:	*Caste and Reservation in India*

➢ U.Baxi	:	*The Indian Supreme Court and Politics* *Parliamentary Procedure, Law Privilege, Practice &Precedents*
➢ VishnooBhagwan&VidyaBhushan	:	*Indian Administration*
➢ S.H.Patil	:	*The Constitution, Government and Politics in India*

ANNEXURE

CO-CURRICULAR ACTIVITIES

- All Co-curricular activities recommended at Course – I & III
- A Field Visit to a Court / District Jail / Local Government Office to observe the structure and functioning
- Viva voce interviews.
- Computerised adaptive testing, literature surveys and evaluations.
- Encouragement to students to contribute articles to the magazines and seminars

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with Potential for Excellence)

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the end of IV Semester

Paper-IV – B.A – POLITICS – Paper -4

(w.e.f 2020-21 admitted batch) RCBCS – Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : INDIAN POLITICAL PROCESS

MODEL QUESTION PAPER

Max.Marks : 75 Time : 3 Hrs

SECTION A

(Answer any **five questions.** Each question carries **5 marks** (Total: 5x5=25 Marks)

1.
2.
3.
4.
5.
6.
7.
8.

SECTION B

(Answer all questions. Each question carries 10 marks (Total: 5x10 = 50 Marks)

9.A

(Or)

B

10. A.

(Or)

B.

11. A

(Or)

B

12. A

(Or)

B

13. A

(Or)

B

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with Potential for Excellence)

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the end of IV Semester

Paper-IV B.A – POLITICS – Paper -4

(w.e.f 2020-21 admitted batch) RCBCS – Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : INDIAN POLITICAL PROCESS

Instructions to paper setters

Time : 3 Hrs

Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks(1-8)
   Part – B – Essay answer questions. Each question carries '10' Marks(9-18)

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with Potential for Excellence)

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the end of IV Semester

Paper-IV – B.A – POLITICS – Paper - 5

(w.e.f 2020-21 admitted batch) RCBCS – Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : WESTERN POLITICAL THOUGHT

SYLLABUS

B.A Course: 5	Semester: IV WESTERN POLITICAL THOUGHT	Credits: 4 Hrs/Wk: 5

Learning Outcomes:

On successful completion of the course the students will be able to:

- Understand the fundamental contours classical, western political philosophy, basicfeaturesof medieval political thought and shift from medieval to modern era.
- Understand the Social Contract Theory and appreciate its implications on the perceptionofState in terms of its purposes and role.
- Acquaint with the Liberal and Marxist philosophy and analyze some trends in Western Political Thought.
- Critically analyse the evolution of western political thought.

UNIT I:

ANCIENT GREEK POLITICAL THOUGHT:

1. Plato-Rule of Philosopher Kings-Theory of Justice-Ideal State and Education
2. Arlstotle-Theory of State-Classification of Governments-Citizenship, Slavery and Theory of Revolutions.

UNIT II:

MEDIEVAL AND MODERN POLITICAL THOUGHT:

1. St:Augustine-Theory of Two Cities.
2. Niccolo Machiavelli-State and Statecraft.

UN IT III:

CONTRACTUAL POLITICAL THOUGHT:

1. Thomas Hobbes- Social Contract and Absolute Sovereignty.
2. John Locke- Human Nature, State of Nature, Social Contract, Natural Rights and Limited Government.
3. Jean Jacques Rousseau- Human Nature, State of Nature, Social Contract, General Will and Popular Sovereignty

UNIT IV:

UTILITARIAN POLITICAL THOUGHT:

1. Jermy Bentham-Theory of Utility, Law and Reforms.
2. J.S.Mill-Theory of Liberty and Representative Government.

UNIT V:

MARXIST POLITICAL THOUGHT:

1. Karl Marx-Dialectical Materialism, Theory of Surplus Value and Class Struggle.
2. Antonio Gramsci-Hegemony and Civil Society.

REFERENCE BOOKS:

➢ O.P.Gauba	:	*Western Political Thought*
➢ G.H.Sabine	:	*A History of Political Theory*
➢ E.Baker	:	*Greek Political Theory : Plato and His Predecessors*
➢ Subrata Mukherjee & Sushila Ramaswamy	:	*A History of Political Thought-Plato to Marx*
➢ ShefaliJha	:	*Western Political Thought -From Plato to Marx*
➢ B.N.Ray	:	*Western Political Thought*
➢ RadheyShamChaurasia	:	*History of Western Political Thought*
➢ P.B.Rathod	:	*Ancient and Medieval Political Thinkers-From Plato to Padua*
➢ Andrew Hakes	:	*Political Theory :Philosophy, Ideology and Science*
➢ HaratiDwarakanath, Prof.G.Lalaiah, K.Saibaba, K.Ramachandra Murthy &V.Bhogendracharyulu, Prof.V.RavindraSastry (ed)	:	*Political Thought*
➢ Anil Kumar Mukopadhyay	:	*An Introduction to Political Theory, Western Political Thought*
➢ William Ebenstien	:	*Great Political Thinkers-Plato to the Present Modern Political Thought, The Great Issues*
➢ J.P.Sudha	:	*History of Political Thought*
➢ H.J.Laski	:	*Political Thought from Bentham to Locke*
➢ C.L.Wayper	:	*Political Thought*

ANNEXURE

CO-CURRICULAR ACTIVITIES

- All Co-curricular activities recommended at Course – I & III
- Peers and self-assessment, out puts from individuals and collaborative work.
- Assignments that encourage the study of standard Reference Books available at Library
- Assignments of the emerging trends after Marxian Philosophy in the era of Globalisation

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

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II B.A. Degree Examination - At the end of IV Semester

Paper-IV – B.A POLITICS – Paper - 4

(w.e.f 2020-21 admitted batch) RCBCS – Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : WESTERN POLITICAL THOUGHT

MODEL QUESTION PAPER

Max.Marks : 75 Time : 3 Hrs

SECTION A

(Answer any five questions. Each question carries 5 marks (Total: 5x5=25 Marks)

1) Plato on Communism - ప్లేటో కమ్యూనిజమ్
2) Sophists - సోఫిస్టులు
3) Hobbe's views on the state nature - ప్రాకృతిక్ వ్యవస్థపై హాబ్స్ భావాలు
4) Bentham's Prison Reforms - బెంథామ్ జైలు సంస్కరణలు
5) Aristotle's Clasification of Governments -అరిస్టాటిల్ ప్రభుత్వాల వర్గీకరణ
6) Hobbes Human Nature - హాబ్స్ యొక్క మానవ స్వభావము
7) Features of Political thoughts - రాజనీతి తత్వ విచార లక్షణములు
8) Bentham utilitarianism - బెంథామ్ ఉపయోగితా వాదము

SECTION B

(Answer all questions. Each question carries 10 marks (Total: 5x10 = 50 Marks)

9. A) Write an essay on ancient Greek political thought.

ప్రాచీన గ్రీకు రాజనీతి తత్వవిచారముపై ఒక వ్యాసము వ్రాయుము.

OR

B) Explain the salient features of Plato's Ideal State.

ప్లేటో ఆదర్శరాజ్యమౌళిక లక్షణములను వివరించుము.

10 A) "Aristotle the father of Politics" - Discuss.

"అరిస్టాటిల్ - రాజనీతి శాస్త్ర పితామహుడు" చర్చించుము.

OR

B) Describe the views of Aristotle on Slavery and Revolutions.

బానిసత్వము విప్లవములపై అరిస్టాటిల్ భావములను వర్ణించుము.

11 A) "Machiavelli was the father of Modern Political thought" - Discuss.

"మాకియవెల్లి ఆధునిక రాజనీతి తత్వ విచారమునకు పితామహుడు" - చర్చించుము.

OR

B) Examine the social contract theory of Rousseau.

రూసో సామాజిక ఒడంబడిక సిద్ధాంతమును వివరించుము.

12 A) Discuss the social contract theory of Thomas Hobbes.

థామస్ హాబ్స్ సామాజిక ఒడంబడిక సిద్ధాంతాన్ని చర్చించుము.

OR

B) Explain the John Lock's theory of Social Contract.

జాన్‌లాక్ సామాజిక ఒడంబడిక సిద్ధాంతమును వివరించుము.

13 A) Write about "Aristotle the father of Politics"

"అరిస్టాటిల్ - రాజనీతి శాస్త్ర పితామహుడు

OR

B) Write about salient features of Plato's Ideal State.

ప్లేటో ఆదర్శరాజ్యమౌఖిక లక్షణాలు పై ఒక వ్యాసము వ్రాయుము.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with Potential for Excellence)

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination - At the end of IV Semester

Paper-IV B.A – POLITICS – Paper - 4

(w.e.f 2020-21 admitted batch) RCBCS Revised Choice Based credit System

Semester: IV – POLITICAL SCIENCE

Title : WESTERN POLITICAL THOUGHT

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

3. Syllabus is divided into 5 units.
4. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks(1-8)
   Part – B – Essay answer questions. Each question carries '10' Marks(9-18)

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
Essay Question	02	02	02	02	02

D.N.R.COLLEGE (AUTONOMOUS): BHIMAVARAM
DEPARTMENT OF POLITICS
BRIDGE COURSE SYLLABUS

SL.NO	Syllabus	No. of Hours required
01	Meaning, Definition, Scope of Political Science	2
02	Difference between politics and political science Behavioral approach	1
03	Is Politics a Science or an art	1
04	Importance of Political science, Relevance of Political Science	3
05	Meaning of Sovereignty, Liberty, Equality, Rights	2
06	Classification of Governments unitary- federal, Parliamentary- Presidential	2
07	Theory of Separation of Politics	2
08	Political Parties - Electorate	2

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

CERTIFICATE COURSE ON GANDHIAN STUDIES SYLLABUS

UNIT-I

CHAPTER-1 INTRODUCTION –GANDHIJI CHILDHOOD AND EDUCATION

CHAPTER-2 PROFESSIONAL CAREER AND GANDHIJI ENTER IN TO INDIAN NATIONAL CONGRESS

UNIT-II

CHAPTER-3 GANDHIJI CONTRIBUTION TO THE INDIAN CONSTIUTION

CHAPTER-4 GANDHIJI THOUGHT AND PHILOSOPHY

PERIODS	:	40 PERIODS
		4 PERIODS IN A WEEK
10 WEEKS	:	40 DAYS
EXAMINATION	:	TO BE CONDUCTED BY THE AUTONOMOUS SECTION
MARKS	:	50

ESSAY QUESTION	:	2X10= 20 MARKS
SHORT QUESTION	:	4X5= 20 MARKS
MULTIPLE QUESTIONS	:	10X1=10 MARKS
TOTAL	:	50 MARKS

D.N.R. College (Autonomous): Bhimavaram

Certificate Course for IInd B.A and IIIrd B.A

Gandhian Studies

Syllabus

Unit – I

Chapter-I: **Introduction:** M.K. Gandhi – Childhood and Education.

మహాత్మా గాంధీ – బాల్యం మరియు విద్యాభ్యాసం.

Chapter-II: Professional Career & enter into Indian National Congress.

వృత్తి వాధ జీవితం మరియు భారత జాతీయ కాంగ్రేస్ లోకి ప్రవేశం.

Unit –II

Chapter-III: M.K. Gandi's Contribution in Indian Independence.

భారత దేశానికి స్వాతంత్ర సముపార్జనలో గాంధీజీ కృషి.

Chapter –IV: Philosophy and Thought of M.K. Gandhi.

మహాత్మా గాంధీ ఆలోచన మరియు తాత్వీక వాధం.

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Certificate Course for IInd B.A and IIIrd B.A
Gandhian Studies

MODEL QUESTION PAPER

Time : 2 hrs Max Marks : 50

Answer the following questions:

1. Describe the law practice of Gandhiji in Indian & South Africa.

   భారత దేశం దక్షిణాఫ్రికాలో గాంధీజీ చేసిన న్యాయ వాద వృత్తిని వివరింపుము.

2. Examine the Family customs & Traditions of Gandhiji.

   గాంధీజీ కుటుంబ ఆచార, సాంప్రదాయాలు వివరింపుము.

3. Discuss the role of Gandhi in Colour Discrimination.

   దక్షిణాఫ్రికా పై వర్ణవివక్షత పై గాంధీజీ పాత్ర చర్చించుము.

4. Discuss the methods & Benefits of Satyagraha.

   సత్యగ్రహ పద్ధతులను, ప్రయోజనాలను చర్చించుము.

5. Explain the political ideas of M.K.Gandhi.

   మహాత్మా గాంధీగారి రాజనీతి భావాలను వివరింపుము.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

CERTIFICATE COURSE ON AMBEDKAR STUDIES SYLLABUS

UNIT-I

CHAPTER-1 INTRODUCTION –AMBEDKAR CHILDHOOD AND EDUCATION

CHAPTER-2 PROFESSIONAL CAREER AND AMBEDKAR MOVEMENT ON CASTE ANNIHILATION

UNIT-II

CHAPTER-3 AMVBEDKAR CONTRIBUTION TO THE INDIAN CONSTITUTION

CHAPTER-4 AMBEDKAR THOUGHT AND PHILOSOPHY

PERIODS	:	40 PERIODS
		4 PERIODS IN A WEEK
10 WEEKS	:	40 DAYS
EXAMINATION	:	TO BE CONDUCTED BY THE AUTONOMOUS SECTION
MARKS	:	50

ESSAY QUESTION	:	2X10= 20 MARKS
SHORT QUESTION	:	4X5= 20 MARKS
MULTIPLE QUESTIONS	:	10X1=10 MARKS
TOTAL	:	50 MARKS

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Certificate Course for IInd B.A and IIIrd B.A

Dr. B.R. Ambedkar's Studies

Syllabus

Unit – 1

Chapter-I: **Introduction:** Childhood & Education of Ambedkar.

ఉపోద్ఘాతము – అంబేద్కర్ బాల్యం మరియు విద్యాభ్యాసం.

Chapter-II: Professional Career & Movement on Caste Annihilation.

వృత్తి వాద జీవితం మరియు కులనిర్మూలన మీద ఉద్యమం.

Unit –II

Chapter-III: Ambedkar's Contribution in Indian Constitution.

భారత రాజ్యాంగ రచనలో అంబేద్కర్ చేసిన కృషి.

Chapter –IV: Ambedkar's Philosophy and Thought.

అంబేద్కర్ తాత్వీక వాదం మరియు ఆలోచనలు విధానం.

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Certificate Course for IInd B.A and IIIrd B.A
Dr. B.R. Ambedkar's Studies

MODEL QUESTION PAPER

Time : 2 hrs. Max Marks : 50

Answer the following questions:

1. Explain the Childhood and Education of Ambedkar.

   అంబేద్కర్ యొక్క బాల్యం మరియు విద్యాభ్యాసం వివరింపుము.

2. Examine the role of Ambedkar in Annihilation of Caste.

   కుల నిర్మూలనలో అంబేద్కర్ పాత్రను వివరింపుము.

3. Briefly explain the Ambedkars Contribution in Constitution of India.

   భారత రాజ్యంగ రచనలో అంబేద్కర్ చేసిన కృషిని వివరింపుము.

4. Discuss the writings and philosophy of Dr. B.R. Ambedkar.

   డా.బి.ఆర్ .ఆంబేద్కర్ యొక్క రచనలు, తాత్వీక వాదం ను వివరింపుము.

5. Write a note on political ideas of Ambedkar..

   అంబేద్కర్ యొక్క రాజనీతి భావాల మీద ఒక వ్యాసం వ్రాయము.

D N R COLLEGE (AUTONOMOUS):: BHIMAVARAM

(Affiliated to AdikaviNannayya University, Rajahmahendravaram)

DEPARTMENT OF MATHEMATICS

BOARD OF STUDIES MEETING 2021-22

Minutes of the Life skill course titled ANALYTICAL SKILLS, Boardof Studies meeting held on 15.11.2021 at 11am through ONLINE

S.No.	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	Sri V. Rajasekhar, LECTURER-IN-CHARGE , Dept. ofMathematics, DNR College (A), BHIMAVARAM	Chairman	V. R. Sekhar
2	Prof AKS Chandrasekhar Rao, Principal , DNR College (A), BHIMAVARAM	Special Invitee	
3	Sri K.C. TammiRaju, Lecturer in Mathematics, DNR College (A), BHIMAVARAM	Member	
4	Kum P.S.M. Gayathri Devi, Lecturer in Mathematics, DNR College (A), BHIMAVARAM	Member	P.S.M.Gayathri Devi
5	Smt. V. VijayaDurga, Lecturer in Mathematics, DNR College (A), BHIMAVARAM	Member	V. Vijaya Durga
6	Kum M.Sunitha, Lecturer in Mathematics, DNR College (A), BHIMAVARAM	Member	M. Sunitha
7	Dr. Ch. Srinivasulu, Head of the Department of Mathematics, Govt. Arts College(A), RAJAHMUNDRY chittarusrinu@gmail.com, 9948617181	University Nominee	Attended Through online
8	Sri G.Sridhar, Lecturer in Mathematics, VKV Govt.degree college, Kothapeta sridharsvkp@gmail.com , 9490642499	Subject Expert	Attended Through online
9	Sri G.Chandrasekhar, Lecturer and Incharge in Mathematics, SCIM Govt. College, Tanuku, chandrasekhargokavarapu@gmail.com,9666664242	Subject Expert	Attended Through online
10	Sri M.V.N. BhaskaraRaju, Lecturer In Mathematics, Ch VPMR Govt.degree college, Ganapavaram mvnbr62@gmail.com, 9440117879	Special Invitee	Attended Through online
11	Kum P. DurgaBhavani, Lecturer in Mathematics, D.N.R. Colleg(A), BHIMAVARAM	Alumni Member	P.D.Bhavani
12	R.Pavani, III B.Sc ,MPC	Student Representative	R. Pavani

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

DEPARTMENT OFMATHEMATICS

BOARD OF STUDIES MEETING ON 15.11.2021 at 11am through ONLINE

AGENDA

Subject 1 :	To design and approve the syllabus for Life Skill course titled Analytical Skills of III semester of II B.A/B.Com /B.Voc/B.Sc degree course from the academic year 2021-22 under RCBCS
Subject 2 :	To design and approve the abstract question paper, model question paper of Semester end examination with maximum marks 50 duration 2 hours and question bank of Life skill courses titled Analytical Skills of III semester of II B.A/B.Com/B.Voc/B.Sc degree course from the academic year 2021-22 under RCBCS
Subject 3 :	To approve the list of recommended textbooks and reference books at end of the syllabi
Subject 4 :	Nil

Chairman

Board of Studies of Mathematics,
D.N.R. College (Autonomous)
BHIMAVARAM

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

DEPARTMENT OF MATHEMATICS

BOARD OF STUDIES MEETING ON 15.11.2021 at 11am through ONLINE

RESOLUTIONS

Resolution 1 : The syllabus for the Life skill courses titled Analytical Skills of III semester B.A/B.Com /B.Voc/B.Sc degree course has been designed unanimously resolved to adopt and implement from the academic year 2021-22 under RCBCS.

Resolution 2 : The following is the design of the abstract question paper maximum marks 50 and duration 2 hours, 50 multiple choice questions and each question carries 1 mark. It is unanimously resolved to adopt and implement this abstract question paper , model question paper and question bank of the Life skill course titled Analytical Skills of III semester of II B.A/B.Com/B.Voc /B.Sc degree course has been designed unanimously resolved to adopt and implement from the academic year 2021-22 under RCBCS.

Resolution 3 : Resolved to approve the list of recommended textbooks and reference books which are listed at the end of the syllabi of Life skill course titled Analytical Skills of III Semester of II B.A/B.Com/B.Voc/B.Sc degree course

- Quantitative Aptitude for Competitive Examination by R.S. Agrawal, S.Chand Publications.
- Analytical skills by Showick Thorpe, published by S Chand And Company Limited, Ramnagar, New Delhi-110055.
- Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.
- Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw Hill Publications.

Resolution 4 : Nil

Chairman

Board of Studies of Mathematics,
D.N.R. College (Autonomous)
BHIMAVARAM

D. N. R College (Autonomous) ::Bhimavaram

(Affiliated to AdikaviNannayya University)

Revised Choice Based Credit System (w.e.f. 2021-22)

Programme: B.A/ B.Com/ B.Voc/B.Sc	Year: II	Semester: III
Life skill course titled Analytical skills		
Total Theory Hours: 30	2hours per week	Total Credits: 2

Syllabus (w.e.f 2021-22 admitted Batch)

UNIT – 1 (10 Hrs)

Arithmetic ability: Algebraic operations BODMAS, Fractions, Divisibility rules, LCM & GCD(HCF)

Verbal Reasoning: Number Series, Coding & Decoding, Blood relationship, Clocks, Calendars

UNIT – 2 (10 Hrs)

Quantitative aptitude: Averages, Ratio and proportion, Problems on ages, Time-distance–speed

Business computations: Percentages, Profit & loss, Partnership, simple compound interest

UNIT – 3 (07 Hrs)

Data Interpretation: Tabulation, Bar Graphs, Pie Charts, line Graphs ,Venn diagrams

Recommended Co-Curricular Activities (03 Hrs)

Surprise tests / Viva-Voice / Problem solving/Group discussion.

Text Book: Quantitative Aptitude for Competitive Examination by R.S. Agrawal, S.Chand Publications.

Reference Books:

1. Analytical skills by Showick Thorpe, published by S Chand And Company Limited, Ramnagar, New Delhi-110055.

2. Quantitative Aptitude and Reasoning by R V Praveen, PHI publishers.

3. Quantitative Aptitude for Competitive Examination by Abhijit Guha, Tata Mc Graw Hill Publications.

D.N.R College (Autonomous) , Bhimavaram

II B.A / B.Com / B.Voc / B.Sc Degree Course , Semester – III

(w.e.f 2021 – 2022)

Life Skill Course titled Analytical Skills

Time : 02 Hours **Max.Marks : 50**

ABSTRACT QUESTION PAPER

Note :

- All are Multiple Choice Questions
- Answer All Questions
- To each question four choices A, B, C and D are given. The candidate has to write the correct choice in the brackets provided against each question
- 50 questions are set in proportion from Unit – I , Unit – II and Unit – III as specified below
- Each question carries 1 mark
- No Negative Marks

Blue Print

Questions	No. Of Questions	Unit #
01 to 20	20	Unit I
21 to 40	20	Unit II
41 to 50	10	Unit III

Distribution of questions

Question #	Unit #	Questions are to be set from the topics
01 to 04	Unit I	Algebraic Operations ; BODMAS
05 and 06	Unit I	Fractions
07 and 08	Unit I	Divisibility Rules
09 and 10	Unit I	HCF and LCM
11 and 12	Unit I	Calendars
13 and 14	Unit I	Clock
15 and 16	Unit I	Blood Relations
17 and 18	Unit I	Numerical Series
19 and 20	Unit I	Coding and Decoding
21 to 24	Unit II	Averages
25 and 26	Unit II	Ratio and Proportion
27 and 28	Unit II	Problems On Ages
29 and 30	Unit II	Time , Distance & Speed
31 and 32	Unit II	Percentages
33 and 34	Unit II	Profit and Loss
35 and 36	Unit II	Partnership
37 and 38	Unit II	Simple Interest
39 and 40	Unit II	Compound Interest
41 to 50	Unit III	Data Analysis : Tabulation

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Revised choice based credit system – with effect from 2021-2022)

II B . A./ B.COM/B.VOC/B.SC. Degree Examination (At the end of Third semester)

Life skill course titled : Analytical Skills

Model Question paper with effect from 2021 - 2022

TIME : 02 hours **Max.Marks:50**

Answer ALL questions of the following

1) If : stands for addition ; - stands for division ; x stands for substraction ; and + stands for multiplication then $\frac{(36 \times 4) - 8 \times 4}{4+0 \times 2+16 \div 4} = ?$ ( )

a) 0 b) 8 c) 12 d) 16

2) which of the four interchanges in sings and numbers would make the equation $6 \times 4 + 2 = 16$ correct ? ( )

a) + and × ; 2 and 4 b) + and × ; 2 and 6 c) + and × ; 4 and 6 d) None of these

3) The value of $25 - 5[2 + 3\{2 - 2(5 - 3) + 5\} - 10] \div 4$ ( )

a) 5 b) 23.25 c) 23.75 d) 256

4) The square root of $\frac{0.75^2}{1-0.75} + \{0.75 + 0.75^2 + 1\}$ is ( )

a) 4 b) 3 c) 2 d) 1

5) The product of two fractions is $\frac{14}{15}$ and their quotient is $\frac{35}{24}$, the greater fraction is ( )

a) $\frac{4}{5}$ b) $\frac{7}{6}$ c) $\frac{7}{4}$ d) $\frac{7}{3}$

6) $7.5 \times 7.5 + 37.5 + 2.5 \times 2.5$ is equal to ( )

a) 100 b) 80 c) 60 d) 30

7) How many of 264, 396, 462, 792, 968, 2178, 5184,6336 are divisible by 132 ( )

a) 4 b) 5 c) 6 d) 7

8) If the number 635xy is disivible by 90 then x+y is ( )

a) 2 b) 3 c) 4 d) 6

9) Two numbers are in the ratio 3 :4 their LCM is 84, Then the greater number is ( )

a) 21 b) 24 c) 28 d) 84

10) The ration of two numbers is 3:4 and their HCF is 4 , then their LCM is ( )

a) 12 b) 16 c) 24 d) 48

11) In the series 3,9,15....., what will be the 21 st term ? ( )

a) 117 b) 121 c) 123 d) 129

12) Given set : (6,15,28) ( )

a) (46,56,66) b) (50,59,71) c) (60,67,72) d) (60,69,82)

13) In a certain code TRACHER is coded as VGCEJGT. How is CHILDREN written in that code ? ( )

a) EJKNEGTP b) EJKNFLTP c) EJKNFGTO d) EJKNFTGP

14) If GO = 82 , SHE = 49 Then SOME will equal to ( )

a) 56 b) 58 c) 62 d) 64

Question: Five persons namely P ,Q , X , Y and Z are sitting on a park. P is the mother of X who is the wife of Z . Y is the brother of P and Q is the Husband of P

15) How is P realted to Z ? ( )

a) Mother b) Aunt c) Sister d) Mother -In - Law

16) How is X related to Q ? ( )

a) Daughter b) Daughter- In- Law c) Niece d) Aunt

17) A clock is started at noon. By 10 minutes past 5 , hour hand turned through ( )

a) 145^0 b) 150^0 c) 155^0 d) 160^0

18) How many times in a day , are the hands of a clock at right angles ( )

a) 22 b) 24 c) 44 d) 38

19) Today is wednesday. After 96 days it will be ( )

a) Friday b) Saturday c) Sunday d) Monday

20) Which of the following not a leap year ( )

a) 800 b) 1600 c) 600 d) 2400

21) If A : B 3 : 4 and B : C = 8 : 9 then A : c is ( )

a) 3 : 9 b) 3 : 2 c) 2 : 3 d) 1 : 2

22) If 15% of x = 20% of y , then x : y is ( )

a) 3 : 4 b) 4 : 3 c) 17 :16 d) 16 : 17

23) Present ages of X and Y are in the ratio 5 : 6 seven years hence this ratio will become 6 : 7 what is the present age of x in years

a) 35 b) 42 c) 49 d) 52 ( )

24) A man is 24 years older then his son. In two years, his age will be twice the age of his son. The present age of his son is

a) 14 years b) 18 years c) 20 years d) 22 years ( )

25) What is the speed of a car in m/sec which moves at a speed of 80 km /hr ? ( )

a) 8 m/sec b) $20\frac{1}{9}$ m/sec c) $22\frac{2}{9}$ m/sec d) None of these

26) A person crosses a 600m long street in 5 min. What is his speed in km/hr ? ( )

a) 3.6 b) 7.2 c) 8.4 d) 10

27) $\frac{1}{2}$ is what percent of 50 ( )

a) 3% b) 4% c) 9% d) 2%

28) If P% of P is 36, then P is equal to ( )

a) 12 b) 60 c) 600 d) 3600

29) A man buys an article for Rs. 27.50 and sells for Rs. 28.50. find his gain % ( )

a) 4% b) 3% c) 5% d) 1%

30) Find the selling price when cost price is Rs.56.25, gain is 20% ( )

a) Rs. 67.50 b) Rs. 40.00 c) Rs. 68.50 d) None of these

31) A , B ,C enter into a partnership investing Rs. 35,000 , Rs. 45,000 and Rs. 55,000 respectively. The respective shares of A,B,C in an annual profit of Rs.40,500 are ( )

a) Rs. 10,500, Rs. 13,500, Rs.16,500 b) Rs. 11,500, Rs. 13,000, Rs.16,000 c) Rs. 11,000, Rs. 14,000, Rs.15,000 d) None of these

32) Anand and Deepak started a business investing Rs.22,500 and 35,000 respectively. Out of total profit of Rs.13,800, Deepak 's share is ( )

a) Rs. 5400 b) Rs. 7200 c) Rs. 8400 d) Rs. 9600

33) Find the simple interest on Rs. 3000 at $6\frac{1}{4}$% per annum for the period from 4th feb 2005 to 8th april 2005 ( )

a) Rs. 38.50 b) Rs. 40.00 c) Rs. 39.00 d) Rs. 37.50

34) At what rate percent per annum will a sum of money double in 16 years ? ( )

a) $6\frac{1}{4}$% p. a b) $3\frac{1}{2}$% p.a c) $4\frac{1}{4}$% p .a d) None of these

35) What will be the compound interest on a sum of Rs. 25,000 after 3 years at the rate of 15% per annum ? ( )

a) Rs. 3009 b) Rs. 3109 c) Rs.3899 d) Rs.4000

36) Find the compound interest on Rs.15,25 for 9 months at 16% per annum compound quarterly ( )

a) Rs. 1951 b) Rs. 1851 c) Rs.1941 d) Rs. 1961

37) Find the average of first 20 multiples of 7 ( )

a) 70 b) 72 c) 73.2 d) 75

38) The average of the first nine prime number is ( )

a) 9 b) 11 c) $11\frac{1}{9}$ d) $11\frac{2}{9}$

39) If the mean of a,b,c is M and ab+bc+ca = 0 , Then the mean of a^2,b^2,c^2 is ( )

a) M^2 b) $3M^2$ c) $6M^2$ d) $9M^2$

40) The mean of $1^2,2^2,3^2,4^2,5^2,6^2,7^2$ is ( )

a) 10 b) 20 c) 30 d) 40

Question:

Student	Subjects		
	Maths	Physics	Chemistry
A	60	70	80
B	50	45	55
C	70	60	55
D	75	80	75

41) In which subject student B got the highest marks ? ( )

a) Maths b) Physics c) chemistry d) can not be determined

42. Who got the least marks in physics in the class ? ( )

a) Student A b) Student B C) Student C d) Student D

Question:

Subject	Marks out of 50				
	40 and above	30 and above	20 and above	10 and above	0 and above
History	9	32	80	92	100
Economics	4	21	66	81	100
Average	7	27	73	87	100

43. The number of students scoring less than 40% marks in aggregate is ( )

a) 13 b) 19 c) 34 d) 27

44. If at least 60% marks in History is required for pursuing higher studies in history, how many students will be eligible to pursue higher studies in History. ( )

a) 27 b) 32 c) 34 d) 4

Question:

	Item of Expenditure				
	Salary	Fuel and Transport	Bonus	Interest on loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

45) The total expenditure of the company over these items during year 2000 is ( )

a) 544.41 lakhs b) 501.11 lakhs c) 446.46 lakhs d) 478. 87 lakhs

46) Total expenditure on all these items in 1998 was approximately what percentage of total expenditure in 2002 ( )

a) 62 % b) 66 % c) 69% d) 71%

Question:

Years	Types of batteries (thousands)					
	4AH	7AH	32AH	35AH	55AH	Total
2002	75	144	114	102	108	543
2003	90	126	102	84	126	528
2004	96	114	75	105	135	525
2005	105	90	150	90	75	510
2006	90	75	135	75	90	465
2007	105	60	165	45	120	495
2008	115	85	160	100	145	605

47) The total Sales of all the seven years is the maximum for which battery ( )

a) 4 AH b) 7 AH c) 32 AH d) 35 AH

48) What is the difference in the number of 35 AH batteries sold in 2003 and 2007 ( )

a) 24000 b) 28000 c) 35000 d) 39000

Question:

	YEAR					
STATES	1997	1998	1999	2000	2001	2002
A	67	72	69	78	79	82
B	82	84	85	85	87	88
C	78	81	84	87	89	91
D	56	65	69	71	75	77
E	89	93	94	95	95	97
F	85	88	91	93	95	82

49) The population of the state C in 1997 and 1998 were in the ration 2 : 3 what is the ratio of their literate population ? ( )

a) 51 : 82 b) 15 : 18 c) 9 : 13 d) 26 : 27

50) If the average population of all these states in 1999 wars 12 .5 lakhs , then what was the average literate population in that year ? ( )

a) 10.25 lakhs b) 10.75 lakhs c) 11 lakhs d) 15 lakhs

D.N.R. COLLEGE (AUTONOMOUS) :: BHIMAVARAM

DEPARTMENT OF STATISTICS

BOARD OF STUDIES MEETING 2021- 2022

Minutes of the Statistics Board of studies meeting held on 15 / 11 / 2021 at 11.00 A.M. in the Department of Statistics, D.N.R. College (A), Bhimavaram , through online

SL.NO	NAME OF THE PERSON	DESIGNATION	Signature
1.	Smt V. Deepthi In-charge of the Department, Department of Statistics D.N.R.College(A), Bhimavaram. (W.G)	Chairman	
2.	Smt. A.S.Sucharitha Lecturer in Statistics, D.N.R.College(A), Bhimavaram (W.G)	Member	
3.	Dr. D. V. Ramana Murthy In-charge Dept.of Statistics S.K.V.T. College, Rajamahendravaram (E.G)	University Nominee	online .
4.	Smt. K. Bhavani Lecturer in Statistics V.S.K. College, Bhimavaram	Subject Expert	online .
5	Smt. Dr. Madhavi In-charge Dept. of Statistics Gov. Arts &Science college(A) Tanuku(w.G)	Subject Expert	online .
6	Sri G.Moses In-charge Dpt. Math & Statistics PR\s GOV.college(A) Kakinada (E.G)	Special Invite	online .
7	Sri CH. Surya Chandra Rao Assistant Statistical officer M.R.O Office (Divisional Dyso) Veeravasaram Mandal (W.G)	Alumni Member	Absent .
8	Ms. V. Bhavani II B.Sc., M.S.Cs Roll No: 764 D.N.R.College(A),Bhimavar(W.G)	Student representative	online .
9	Mr. CH.Premash II B.Sc., SMP Roll No: 260 D.N.R.College(A),Bhimavar(W.G)	Student representative	Absent .

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Department of Statistics

Board of studies meeting in the department of Statistics on 15-11-2021.

AGENDA

Subject 1: To discuss and ratify the syllabi for 1st and 2nd Semester course(s) of Statistics in papers I & II for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2020-21 onwards.

Subject 2: To discuss and ratify the structure of the question papers, model question papers for Statistics course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards.

Subject 3: To discuss and ratify the syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Statistics course(s), of papers I and II for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards.

Subject 4: To discuss and ratify the break-up of the Internal assessment test marks 25 in 1st and 2nd semester Statistics course(s) of papers I and II for adoption and implementation under Revised Choice Based Credit System.

Subject 5: To discuss and ratify the qualifying marks in Statistics Course(s) for papers I and II of 1st and 2nd semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject 6: To approve the syllabi for 3rd and 4th Semester course(s) of Statistics in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject 7 : To approve the structure of the question papers, model question papers for Statistics course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum

marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject 8: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Statistics course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject 9: To approve the break-up of the Internal assessment test marks 25 in 3rd and 4th semester Statistics course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Subject 10: To approve the qualifying marks in Statistics Course(s) for papers III, IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject 11: To review the existing syllabi, model question papers of both theory and practical of V and VI semester Statistics course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject 12: To discuss and ratify the Proposal to introduce a new Combination in B.Sc. course with Statistics, as one of the subjects, along with Geology and Computer Science.

Subject 13: Any other matter with the permission of the chair.

Chairman
Board of studies of Statistics
D.N.R.College (A)
Bhimavaram

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Department of Statistics

Board of studies meeting in the department of Statistics on 15-11-2021

RESOLUTION

Resolution 1: The syllabi for 1st and 2nd Semester course(s) of Statistics in papers I & II for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 2: The structure of the question papers, model question papers for Statistics course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 3: The syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Statistics course(s), of papers I and II for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 4: The break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 1st and 2nd semester Statistics course(s) of papers I and II for adoption and implementation under Revised CBCS is ratified.

Resolution 5: It is ratified that the qualifying marks in Statistics Course(s) for papers I and II of 1st and 2nd semester end theory examination is 40 marks (External-26, Internal-14) and practical examination is 20 marks for adoption and implementation under revised CBCS.

Resolution 6: It is resolved to approve the syllabi for 3rd and 4th Semester course(s) of Statistics in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Resolution 7: It is resolved to approve the structure of the question papers, model question papers for Statistics course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with

maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 8: It is resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Statistics course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 9: It is resolved to approve the break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 3rd and 4th semester Statistics course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Resolution 10: It is resolved to approve the qualifying marks in Statistics Course(s) for papers III, IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Resolution 11: It is reviewed and resolved the existing syllabi, model question papers of both theory and practical of V and VI semester Statistics course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution 12: The Proposal to introduce a new Combination in B.Sc. course with Statistics, as one of the subjects, along with Geology and Computer Science is ratified.

Resolution 13: Any other matter with the permission of the chair.

Chairman
Board of studies of Statistics
D.N.R.College(A)
Bhimavaram

D.N.R.COLEGE(AUTONOMOUS)::BHIMAVARAM

B.Sc Statistics Syllabus (w.e.f:2020-2021)

DETAILS OF COURSE TITLES & CREDITS

Sem	Course no.	Course Name	Course type (T/L/P)	Hrs./Week (Science: 4+2)	Credits (Science: 4+1)	Max. Marks Cont./ Internal/Mid Assessment	Max. Marks Sem-end Exam
I	I	Descriptive Statistics	T	4	4	25	75
		Practical	L	2	1	-	50
II	II	Probability Theory and Distributions	T	4	4	25	75
		Practical	L	2	1	-	50
III	III	Statistical Inference	T	4	4	25	75
		Practical	L	2	1	-	50
IV	IV	Sampling Techniques and Design of Experiments	T	4	4	25	75
		Practical	L	2	1	-	50
	V	Applied Statistics	T	4	4	25	75
		Practical	L	2	1	-	50

Note: *Course type code: T: Theory, L: Lab, P: Problem solving

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: I	Credits: 4
Paper: 1	Descriptive Statistics	Hrs/Wk: 4

Course Learning Outcomes:Students will acquire:

- Knowledge of Statistics and its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc.
- Knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc.
- knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes,
- Insights into preliminary exploration of different types of data.
- Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple correlations.

UNIT I:

Introduction to Statistics: Importance of Statistics. Scope of Statistics in different fields. Concepts of primary and secondary data. Diagrammatic and graphical representation of data: Histogram, frequency polygon, Ogives, Pie. Measures of Central Tendency: Mean, Median, Mode, Geometric Mean and Harmonic Mean. Median and Mode through graph.

UNIT II:

Measures of Dispersion: Range, Quartile Deviation, Mean Deviation and Standard Deviation, Variance. Central and Non-Central moments and their interrelationship. Sheppard's correction for moments. Skewness and kurtosis.

UNIT III:

Curve fitting: Bi- variate data, Principle of least squares, fitting of degree polynomial. Fitting of straight line, Fitting of Second degree polynomial or parabola, Fitting of power curve and exponential curves.

Correlation: Meaning, Types of Correlation, Measures of Correlation: Scatter diagram, Karl Pearson's Coefficient of Correlation, Rank Correlation Coefficient (with and without ties), Bi-variate frequency distribution, correlation coefficient for bi-variate data and simple problems. Concept of multiple and partial correlation coefficients (three variables only) and properties

UNIT IV:

Regression : Concept of Regression, Linear Regression: Regression lines, Regression coefficients and it's properties, Regressions lines for bi-variate data and simple problems. Correlation vs regression.

UNIT-V

Attributes : Notations, Class, Order of class frequencies, Ultimate class frequencies, Consistency of data, Conditions for consistency of data for 2 and 3 attributes only , Independence of attributes , Association of attributes and its measures, Relationship between association and colligation of attributes, Contingencytable: Square contingency, Mean square contingency, Coefficient of mean square contingency, Tschuprow's coefficient of contingency.

TEXT BOOKS:

1. V.K.Kapoor and S.C.Gupta: Fundamentals of MathematicalStatistics,Sultan Chand &Sons, NewDelhi.
2. BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr M.Jaganmohan Rao,Dr N.Srinivasa Rao, Dr P.Tirupathi Rao, Smt.D.Vijayalakshmi.
3. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC. PHI

REFERENCE BOOKS:

1. Willam Feller: Introduction to Probability theory and its applications. Volume –I,Wiley
2. Goon AM, Gupta MK, Das Gupta B : Fundamentals of Statistics , Vol-I, the World Press Pvt.Ltd.,Kolakota.
3. Hoel P.G: Introduction to mathematical statistics, Asia Publishinghouse.
4. M. JaganMohan Rao and Papa Rao: A Text book of StatisticsPaper-I.
5. Sanjay Arora and Bansi Lal: New Mathematical Statistics: Satya Prakashan , NewDelhi

D.N.R.COLLEGE(AUTONOMOUS)::BHIMAVARAM
B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: I	Credits: 1
Paper: 1	Practical	Hrs/Wk: 2

List of the experiments:

1. Graphical presentation of data (Histogram, frequency polygon,Ogives).
2. Diagrammatic presentation of data (Bar andPie).
3. Computation of measures of central tendency(Mean, Median andMode)
4. Computation of measures of dispersion(Q.D, M.D andS.D)
5. Computation of non-central, central moments, $\beta 1$ and $\beta 2$ for ungroupeddata.
6. Computation of non-central, central moments, $\beta 1$ and $\beta 2$ and Sheppard's corrections forgrouped data.
7. Computation of Karl Pearson's coefficients of Skewness and Bowley's coefficients of Skewness.
8. Fitting of straight line by the method of least squares
9. Fitting of parabola by the method of least squares
10. Fitting of power curve of the type by the method of least squares.
11. Fitting of exponential curve of the type and by the method of least squares.
12. Computation of correlation coefficient and regression lines for ungrouped data
13. Computation of correlation coefficient, forming regression lines for grouped data
14. Computation of Yule's coefficient of association
15. Computation of Pearson's, Tcherprows coefficient of contingency

Note: Training shall be on establishing formulae in Excel cells and derive the results. The excel output shall be exported to MS word for writing inference.

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -I

Paper: DESCRIPTIVE STATISTICS

Time: 3 Hrs. Max Marks: 75

SECTION-A

Answer any five questions. All questions carry equal marks. 5 x 5= 25M

1. Distinguish between questionnaire and schedule.
2. Write short note on Diagrams and its types?
3. Explain Standard Deviation with its merits and demerits.
4. In a frequency distribution, the co-efficient of skewness based upon the quartiles is 0.6. If the sum of the upper and lower quartiles is 100 and median is 38, find the value of the upper and lower quartiles.
5. Explain Method of Least squares
6. Explain Association of attributes
7. Explain concept of Skewness
8. Correlation vs Regression

SECTION-B

Answer ALL the questions. All questions carry equal marks. 5 x 10 = 50M

9. a) What do you understand by collection of data? What are its objectives? Discuss different methods

(OR)

b) Describe the different measures of central tendency and discuss theirMerits and demerits.

10. a) Explain the methods of measuring skewness and kurtosis of a frequency Distribution.

(OR)

b) Define the raw and central moments of a frequency distribution. Derive theRelationship between them.

11. a) Explain Karl Pearson's coefficient of Correlation

(OR)

b) Fit a Second Degree Equation to the following data

X	2	4	6	8	10	12
y	10	14	19	25	31	36

a) Explain Karl Pearson's coefficient of Correlation

(OR)

c) Explain Regression X on Y and Y on C with its Properties

12. a) The Rank of 15 students in Mathematics and Statistics are given below. Obtain rank correlationcoefficient between them

Rank of Maths	1	2	6	9	11	15	10	8	4	7	5	14	13	12	3
Rank of Statistics	10	7	8	11	9	13	15	1	6	3	4	12	14	5	2

b) Explain Consistency of data for Single ,double and triple attributes

13. a) The Rank of 15 students in Mathematics and Statistics are given below. Obtain rank correlationcoefficient between them

Rank of Maths	1	2	6	9	11	15	10	8	4	7	5	14	13	12	3
Rank of Statistics	10	7	8	11	9	13	15	1	6	3	4	12	14	5	2

b) Explain Consistency of data for Single,double and triple attribute.

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B.Sc Statistics Syllabus (w.e.f : 2020-21 Admitted Batch)

STRUCTURE OF THE QUESTION PAPER (Semester End)UG DEGREE Practical EXAMINATIONS

SEMESTER -I

Paper: I

Time : 3 Hrs **Max.Marks:50 Marks**

Answer the following any three questions the following 3 x 12 = 36 Marks

1

2

3

4

5

Record - 10 Marks

Viva - 4 Marks

D.N.R.COLLEGE(AUTONOMOUS)::BHIMAVARAM
B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: II	Credits: 4
Paper: 2	PROBABILITY AND PROBABILITY DISTRIBUTIONS	Hrs/Wk: 4

Course Learning Outcomes:
Students will acquire:

- ability to distinguish between random and non-random experiments,
- Knowledge to conceptualize the probabilities of events including frequentist and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Baye's Theorem,
- knowledge related to concept of discrete and continuous random variables and their probabilitydistributions including expectation and moments,
- knowledge of important discrete and continuous distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric, normal, uniform, exponential, beta and gamma distributions,
- acumen to apply standard discrete and continuous probability distributions to different situations.

UNIT I:
Introduction to Probability: Basic Concepts of Probability, random experiments, trial, outcome, sample space,event, mutually exclusive and exhaustive events, equally likely and favourable outcomes. Mathematical, Statistical, axiomatic definitions of probability. Conditional Probability and independence of events,Addition and multiplication theorems of probability for 2 and for n events. Boole's inequality and Baye's theorem and its applications in real life problems.

UNIT II:
Random variable: Definition of random variable, discrete and continuous random variables, functions of random variable. Probability mass function. Probability density function,Distribution function and its properties. For given pmf, pdf calculation of moments, coefficient of skewness and kurtosis. Bivariate random variable - meaning, joint, marginal and conditional Distributions, independence of random variables and simple problems.

UNIT III:
Mathematical Expectation : Mathematical expectation of a random variable and function of a random variable. Moments and covariance using mathematical expectation with examples. Addition and Multiplication theorems on expectation. Definitions of M.G.F, C.G.F, P.G.F, C.F and their properties. Chebyshev and Cauchy - Schwartz inequalities.

UNIT IV:
Discrete Distributions: Binomial, Poisson, Negative Binomial, Geometric distributions: Definitions, means, variances, M.G.F, C.F, C.G.F, P.G.F, additive property if exists. Possion approximation to Binomial distribution. Hyper-geometric distribution: Defination, mean and variance.

UNIT V:

Continuous Distributions: Rectangular, Exponential, Gamma, Beta Distributions: mean , variance, M.G.F, C.G.F, C.F. Normal Distribution: Definition, Importance, Properties, M.G.F, CF, additive property.

TEXT BOOKS:

4. V.K.Kapoor and S.C.Gupta: Fundamentals of MathematicalStatistics,Sultan Chand &Sons, NewDelhi.
5. BA/BSc I year statistics - descriptive statistics, probability distribution - Telugu Academy - Dr M.Jagammohan Rao,Dr N.Srinivasa Rao, Dr P.Tirupathi Rao, Smt.D.Vijayalakshmi.
6. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC, PHI

REFERENCE BOOKS:

6. Willam Feller: Introduction to Probability theory and its applications. Volume –I,Wiley
7. Goon AM, Gupta MK, Das Gupta B : Fundamentals of Statistics , Vol-I, the World Press Pvt.Ltd.,Kolakota.
8. Hoel P.G: Introduction to mathematical statistics, Asia Publishinghouse.
9. M. JaganMohan Rao and Papa Rao: A Text book of StatisticsPaper-I.
10. Sanjay Arora and Bansi Lal: New Mathematical Statistics: Satya Prakashan , NewDelhi

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: II		Credits: 1
Paper: 2	Practical		Hrs/Wk: 2

List of Experiments:

1. Fitting of Binomial distribution – Direct method.
2. Fitting of binomial distribution – Recurrence relation Method.
3. Fitting of Poisson distribution – Direct method.
4. Fitting of Poisson distribution - Recurrence relation Method.
5. Fitting of Negative Binomial distribution.
6. Fitting of Geometric distribution.
7. Fitting of Normal distribution – Areas method.
8. Fitting of Normal distribution – Ordinates method.
9. Fitting of Exponential distribution.

Note: Training shall be on establishing formulae in Excel cells and derive the results. The excel output shall be exported to MS word for writing inference.

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -II

Paper: PROBABILITY AND PROBABILITY

Time: 3 Hrs. **Max Marks: 75**

SECTION-A

Answer any five questions. All questions carry equal marks. **5 x 5= 25M**

1. Write short note on Probability
2. Explain Boole's Inequality
3. Define (i) Mutually Exclusive events
   (ii) Exhaustive events
   (iii) Equally likely events
4. Explain Bivariate random variable
5. Define Uniform Distribution and its properties
6. Give the applications of Normal distribution
7. Explain Cauchy - Schwartz inequalities
8. Define Exponential distribution with its properties

SECTION-A

Answer ALL the questions. All questions carry equal marks. **5 x 10 = 50M**

9. a) Explain Types of Probability and Explain properties of Probability

   (OR)

   b) Define Conditional Probability and Explain Baye's theorem with its applications

10. a) Explain types of Random Variables and Explain p.m.f and p.d.f with its properties

    (OR)

    b) A random variable X has the following probability function

X = x	0	1	2	3	4	5	6	7
P(X=x)	0	K	2k	2k	3k	K^2	$2k^2$	$7k^2+k$

    a) Find K, P (X < 6), P (X > 6), P (0 < X < 5). b) Find Distribution function. c)Its graph.

11. a) Prove the following results

    (i)E (X + Y) = E (X) + E (Y), (ii) E (XY) = E(X) E(Y)

    (OR)

    b) Explain MGF and CGF with its properties

12. a) Write about Binomial distribution and its properties

(OR)

b) Write about Poisson distribution and its properties

13. a) Define Normal distribution. Mention its properties

(OR)

b) Write short note on Beta and Gamma Distribution

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B.Sc Statistics Syllabus (w.e.f : 2020-21 Admitted Batch)

STRUCTURE OF THE QUESTION PAPER (Semester End)UG DEGREE Practical EXAMINATIONS

SEMESTER -II

Paper: II

Time : 3 Hrs **Max.Marks:50 Marks**

Answer the following any three questions the following 3 x 12 = 36 Marks

1

2

3

4

5

Record - 10 Marks

Viva - 4 Marks

D.N.R.COLLEGE(AUTONOMOUS)::BHIMAVARAM
B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: III	Credits: 1
Paper: 3	Practical	Hrs/Wk: 2

List of Experiments:

1. Large sample test for difference of means
2. Large sample test for single proportion
3. Large sample test for difference of proportions
4. Large sample test for difference of standard deviations
5. Large sample test for correlation coefficient
6. Small sample test for single mean
7. Small sample test for difference of means
8. Small sample test for correlation coefficient
9. Paired t-test (paired samples).
10. Small sample test for single variance(χ 2 - test)
11. Small sample test for difference of variances(F-test)
12. χ 2 - test for goodness of fit and independence of attributes
13. Nonparametric tests for single sample(run test, sign test and Wilcoxon signed rank test)
14. Nonparametric tests for related samples (sign test and Wilcoxon signed rank test)
15. Nonparametric tests for two independent samples (Median test, Wilcoxon –Mann-Whitney - U test,Wald - Wolfowitz' s runs test)

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: IV	Credits: 4
Paper: 4	SAMPLING TECHNIQUES AND DESIGN OF EXPERIMENTS	Hrs/Wk: 4

Course Learning Outcomes

The students shall get

- Introduced to various statistical sampling schemes such as simple, stratified and systematic sampling.
- an idea of conducting the sample surveys and selecting appropriate sampling techniques,
- Knowledge about comparing various sampling techniques.
- carry out one way and two way Analysis of Variance,
- understand the basic terms used in design of experiments,
- use appropriate experimental designs to analyze the experimental data.

UNIT I:

Simple Random Sampling (with and without replacement): Notations and terminology, various probabilities of selection. Random numbers tables and its uses. Methods of selecting simple random sample, lottery method, method based on random numbers. Estimates of population total, mean and their variances and standard errors, determination of sample size, simple random sampling of attributes.

UNIT II:

Stratified random sampling: Stratified random sampling, Advantages and Disadvantages of Stratified Random sampling, Estimation of population mean, and its variance. Stratified random sampling with proportional and optimum allocations. Comparison between proportional and optimum allocations with SRSWOR.

Systematic sampling: Systematic sampling definition when N = nk and merits and demerits of systematic sampling - estimate of mean and its variance. Comparison of systematic sampling with Stratified and SRSWOR.

UNIT III:

Analysis of variance: Analysis of variance (ANOVA) –Definition and assumptions. One-way with equaland unequal classification, Two way classification.

Design of Experiments: Definition, Principles of design of experiments, CRD: Layout, advantages and disadvantage and Statistical analysis of Completely Randomized Design(C.R.D).

UNIT IV:

Randomized Block Design (R.B.D) and Latin Square Design (L.S.D) with their layouts and Analysis, MissingplottechniqueinRBDandLSD.EfficiencyRBDoverCRD,EfficiencyofLSDoverRBDand CRD.

UNIT V: Factorial experiments – Main effects and interaction effects of 2^2 and 2^3 factorial experiments andtheir Statistical analysis. Yates procedure to find factorial effect totals.

TEXT BOOKS:

1. Telugu Academy BA/BSc III year paper - III Statistics - applied statistics - Telugu academy by Prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.Papaiah Sastry.
2. K.V.S. Sarma: Statistics Made Simple: Do it yourself on PC.PHI.

REFERENCE BOOKS:

1. Fundamentals of applied statistics : VK Kapoor and SCGupta.
2. Indian Official statistics - MR Saluja.
3. Anuvarthita Sankyaka Sastram - TeluguAcademy.

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: IV	Credits: 1
Paper: 4	Practical	Hrs/Wk: 2

List of Experiments:

Sampling Techniques:

Estimation of population mean and its variance by

1. Simple random sampling with and without replacement. Comparison between SRSWR and SRSWOR.
2. Stratified random sampling with proportional and optimum allocations. Comparisonbetween proportional and optimum allocations with SRSWOR.
3. Systematic sampling with N=nk. Comparison of systematic sampling with Stratifiedand SRSWOR.

Design of Experiments:

4. ANOVA - one - way classification with equal and unequal number of observations
5. ANOVA Two-way classification with equal number of observations.
6. Analysis of CRD.
7. Analysis of RBD Comparison of relative efficiency of CRD with RBD
8. Estimation of single missing observation in RBD and its analysis
9. Analysis of LSD and efficiency of LSD over CRD and RBD
10. Estimation of single missing observation in LSD and its analysis
11. Analysis of 2^2 with RBD layout
12. Analysis of 2^3 with RBD layout

Note: Training shall be on establishing formulae in Excel cells and deriving the results. Theexcel output shall be exported to MS Word for writing inferences.

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -IV

Paper: SAMPLING TECHNIQUES AND DESIGN OF EXPERIMENTS

Time: 3 Hrs. Max Marks: 75

SECTION-B

Answer any five questions. All questions carry equal marks. **5 x 5= 25M**

1. Distinguish between census survey and sample surveys.
2. Differences between SRSWR and SRSWOR.
3. Explain the purpose of ANOVA.
4. Explain about CRD
5. What are different types of sampling
6. Explain types of allocation in stratified sampling.
7. Explain about Yates procedure to find factorial effectotals
8. Explain about methods of drawing random samples from Simple random Sampling

SECTION-B

Answer ALL the questions. All questions carry equal marks. **5 x 10 = 50M**

9. a) What are principal steps in a sample survey.

(OR)

b) Discuss Sampling and non-sampling errors.

10. a) Derive the variance of the sample mean in SRSWOR.

(OR)

b) If the population consists of linear trend, then prove that $V(\bar{Y}_{st}) \leq V(\bar{Y}_{sys}) \leq V(\bar{Y}_n)_R$

11. b) Discuss about basic principles of experimentation

(OR)

b) Explain Two way ANOVA Classification

12. a) Explain LSD and merits, demerits of LSD

(OR)

b) Explain the analysis of RBD with one missing observation.

13. a) Explain about Main effects and interaction effects of 2^2

(OR)

b) Main effects and Interaction effects of 2^3 factorial experiments

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STRUCTURE OF THE QUESTION PAPER (Semester End)UG DEGREE Practical EXAMINATIONS

SEMESTER -IV
Paper: IV

Time : 3 Hrs Max.Marks:50 Marks

Answer the following any three questions the following 3 x 12 = 36 Marks

1

2

3

4

5

Record - 10 Marks

Viva - 4 Marks

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

B. Sc	Semester: IV	Credits: 4
Paper: 5	APPLIED STATISTICS	Hrs/Wk: 4

Course Learning Outcomes

After completion of this course, the students will know about

- Time series data, its applications to various fields and components of time series,
- Fitting and plotting of various growth curves such as modified exponential, Gompertz and logisticcurve, Fitting of trend by Moving Average method,
- Measurement of Seasonal Indices by Ratio-to-Trend , Ratio-to-Moving Average and LinkRelative methods,
- Applications to real data by means of laboratory assignments.
- Interpret and use a range of index numbers commonly used in the business sector
- Perform calculations involving simple and weighted index numbers
- Understand the basic structure of the consumer price index and perform calculationsinvolvingits use
- Various data collection methods enabling to have a better insight in policy making,planningand systematic implementation, Construction and implementation of life tables, Population growth curves, population estimates and projections,
- Real data implementation of various demographic concepts as outlined above through practicalassignments.

UNIT I:

Time Series: Time Series and its components with illustrations, additive, multiplicativemodels. Trend: Estimation of trend by free hand curve method, method of semi averages.Determination of trend by least squares (Linear trend, parabolic trend only), moving averages method.

UNIT II:

Seasonal Component: Determination of seasonal indices by simple averages method, ratio to moving average, Ratio to trend and Link relative methods, Depersonalization.

UNIT III:

Growth curves: Modified exponential curve, Logistic curve and Grompertz curve, fitting of growth curves by the method of three selected points and partial sums.Detrending. Effect of elimination of trend on other components of the time series

UNIT IV:

Index numbers: Concept, construction, problems involved in the construction of index numbers, uses and limitations. Simple and weighted index numbers. Laspayer's, Paasche's and Fisher's index numbers, Criterion of a good index number, Fisher's ideal index numbers. Cost of living index number and wholesale price index number.

UNIT V:

Vital Statistics: Introduction, definition and uses of vital statistics, sources of vital statistics, easures of different Mortality and Fertility rates, Measurement of population growth. Life tables: construction and uses of life tables.

TEXT BOOKS:

1. Fundamentals of applied statistics : VK Kapoor and SCGupta.
2. BA/BSc III year paper - III Statistics - applied statistics - Telugu academy by prof.K.Srinivasa Rao, Dr D.Giri. Dr A.Anand, Dr V.PapaiahSastry.

REFERENCE BOOKS:

1. Anuvarthita Sankyaka Sastram - TeluguAcademy.
2. Mukopadhyay, P (2011). Applied Statistics, 2nd ed. Revised reprint, Books and Allied Pvt. Ltd.
3. Brockwell, P.J. and Devis, R.A. (2003). Introduction to Time Series Analysis. Springer.
4. Chatfield, C. (2001). Time Series Forecasting., Chapman & Hall.
5. Srinivasan, K. (1998). Demographic Techniques and Applications. Sage Publications
6. Srivastava O.S. (1983). A Text Book of Demography. Vikas Publishing House

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B. Sc	Semester: IV	Credits: 1
Paper: 5	Practical	Hrs/Wk: 2

List of Experiments:

Time Series:

1. Measurement of trend by method of moving averages(odd and evenperiod)
2. Measurement of trend by method of Least squares(linear andparabola)
3. Determination of seasonal indices by method simpleaverages
4. Determination of seasonal indices by method of Ratio to movingaverages
5. Determination of seasonal indices by method of Ratio totrend
6. Determination of seasonal indices by method of Linkrelatives

Index Numbers:

7. Computation of simple indexnumbers.
8. Computation of all weighted index numbers.
9. Computation of reversaltests.

Vital Statistics:

10. Computation of various Mortalityrates
11. Computation of various Fertilityrates
12. Computation of various Reproductionrates.
13. Construction of LifeTables

Note: Training shall be on establishing formulae in Excel cells and deriving the results. Theexcel outputshall be exported to MS Word for writing inferences.

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B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -IV

Paper: APPLIED STATISTICS

Time: 3 Hrs. Max Marks: 75

SECTION-A

Answer any five questions. All questions carry equal marks. 5 x 5= 25M

1. Explain the method of Simple averages
2. Explain Cost of living Index numbers
3. Explain Graphical Method
4. What are the sources of vital statistics
5. Explain the use of index numbers
6. Explain Gross reproduction rate and Net reproduction rate.
7. Explain Method of least squares in time series.
8. Explain about logistic curve

SECTION-B

Answer ALL the questions. All questions carry equal marks.5 x 10 = 50M

9. a) Explain the components of Time series

   (OR)

   b) Explain methods of trend

10. a) Explain the problems involved in the construction of index numbers

    (OR)

    b) Explain the criteria of a good index number.

11. a) Explain Link Relative Method with its merits and demerits

    (OR)

    b) Explain about seasonal components methods

12. a) Explain about various death rates

    (OR)

    b) Explain life tables and its construction.

13. a) Explain about Growth curves

    (OR)

    b) Explain fitting of growth curves by the method of three selected points and partial sums

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B.Sc Statistics Syllabus (w.e.f : 2020-21 Admitted Batch)

STRUCTURE OF THE QUESTION PAPER (Semester End)UG DEGREE Practical EXAMINATIONS

SEMESTER -IV

Paper: V

Time : 3 Hrs **Max.Marks:50 Marks**

Answer the following any three questions the following 3 x 12 = 36 Marks

1

2

3

4

5

Record - 10 Marks

Viva - 4 Marks

D.N.R.COLLEGE(AUTONOMOUS)::BHIMAVARAM

B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -VI

Paper –VI: Project work

Project work:100 Marks (25+75)

Viva Voce: 50 Marks ---------- 150Marks

Guide lines for project of the cluster

1. The students who wants to do the project should follow the following
2. To select the topic with clear Aim and Objectives
3. To collect the previous information regarding the topic
4. To set the clear idea after getting reference material
5. Before solving to discuss the topic, every student has to do at least 3 seminars on cluster topic
6. Finally to come with results and conclusions
7. Defense Journals/ Books should be maintained

Evolution pattern for project work

Total --------150 Marks

Step: 1

Seminar 25 Marks(Internal) Avg 25 Marks.

1st seminar 25 Marks , 2 nd seminar 25 Marks

Step: 2

Project report 75 Marks (Internal valuation:37 ½ Marks + External valuation:37 ½ marks)

1. Introduction (Selection of the topic, Aim and Objectives)
2. Review of information
3. Methodology
4. Analysis and discussions suggestions and conclusions

Step: 3

Project work viva voice (External 50 Marks)

1. Presentation------ 25Marks
2. Viva voice--------- 25 Marks

D.N.R.COLLEGE(AUTONOMOUS)::BHIMAVARAM

B.Sc Statistics Syllabus (w.e.f:2020-21 A.Y)

MODEL QUESTION PAPER (Semester End)UG DEGREE EXAMINATIONS

SMESTER -VI

Paper –VI: Project WORK

Some of the suggested topics for project work:

1.The project work shall be done on any one of the following topics:

- Population statistics
- Crime statistics
- Census statistics
- Medical statistics
- Election statistics
- Educational statistics
- Accident statistics
- Agricultural statistics

2.The project work shall be submitted as one book

3.The project analysis and reports can be using excel and stat disk software. Of exceeded, min tab SPSS statistical software can be used.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
BOARD OF STUDIES MEETING 2021-22
DEPARTMENT OF HISTORY

Minutes of History Board of Studies Meeting held on 15-11-2021 at 2 to 3 PM through online in the department of History, D.N.R. College (A), Bhimavaram.

Sl.No	NAME OF THE PERSON	DESIGNATION	CELL.NO.	SIGNATURE
1	Dr. B.Brahmaiah Head of the Dept.of History D.N.R.College, Bhimavaram. b.brahmaiah69@gmail.com	Chairman	9603051741	
2	Smt G.Hemalatha Lecturer in History D.N.R.College, Bhimavaram. gollamandalahemalatha@gmail.com	Member	9908093225	Attended through online
3	Dr. M Estaru Kalyani Lecturer in History, Ch.S.D.S.Therasa's Degree College for women, Eluru, W.G.Dist. kalyaniasirvadam@gmail.com	University Nomine	9848081025	Attended through online
4	Prof.Dr B.S.Santha Kumari A.S.N.M. Govt.Degree College, palakollu. santhakumaridnr@gmailcom	Subject Expert	7702215899	Attended through online
5	K.Partha Saradhi Lecturer in History A.S.N.M. Govt.Degree College, Palakollu kommuparthasaradhi@gmail.com	Subject Expert	9618522211	Attended through online
6	Sri K.Panduranga Raju Retd HOD of History D.N.R.College(A) Bhimavaram.	Alumni Member	9666693636	Attended through online
7	D.V.V.Ch.Satyanarayana, Lecturer in Histirory, Govt.Degree College, Ganapavaram, WG.Dt. dhaphri2012@mail.com	Special invity	8185011983	Attended through online
8	P. Nirmala III B.A., HEP, Rg. No. 119110021, D.N.R.College(A), Bhimavaram.	Student Represent	9398038879	Attended through online

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
BOARD OF STUDIES MEETING
DEPARTMENT OF HISTORY

There will be a online meeting of the Board of Studies in History, D.N.R. College(A), Bhimavaram on Monday the 15th November, 2021 at 2.00 P.M to discuss and decide on the foiflowing subjects. All the members are requested to attend the meeting without fail.

AGENDA

Subject No. 1: To design and approve the syllabi for 3rd and 4th Semester course of B.A. History in paper III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Subject No. 2: To design and approve the structure of the question papers, model question papers for B.A course in Paper III, IV & V with maximum marks 75 of 3rd and 4 th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (R.C.B.C.S.) w.e.f. the academic year 2021-22onwards.

Subject No. 3: To discuss and approve the break-up of the Internal assessment test marks 25 in 3rd and 4th semester B.A. History course in papers III , IV & V for adoption and implementation under Revised Choice Based Credit system.

a) Written Examination : 15 Marks.

b) Assignment : 05 Marks.

c) Co-Curricular activities : 05 Marks.

Subject No.4: To discuss and approve the qualifying marks in B.A. History Course for papers III, IV & V of 3rd and 4th semesters end theory examination for adoption and implementation under revised C.B.C.S.

Subject No. 5: To review and approve the syllabi of Bridge course and discuss the mode of conduct of Bridge course classes for the academic year 2021-2022.

Subject No. 6: To approve the list of paper setters and examiners for B.A. History course.

Subject No.7: To review and approve the list of recommended text books and reference books which are listed at the end of syllabi in paper III, IV and V of B.A. History course.

Subject No. 8: To enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Subject No.9: To review and approve the existing syllabi, model question papers of theory of I, II,V and VI semesters in paper I, II, 3A, 3B, 4A, 4B, 5B, and 6B of B.A. History course.

Subject No.10: To procure latest editions of text books, reference books, journals , e- journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Subject No.11: To discuss and approve the syllabus for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revised C.B.C.S., for adoption and implementation from the academic year 2021-22 onwards.

Subject No. 12: To discuss and approve the model question paper, table marks and structure of question paper for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revise C.B.C.S., being implemented from the academic year 2021-22 onwards.

Subject No. 13: To discuss and approve the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revised C.B.C.S., for adoption and implantation from the academic year 2021-22 onwards.

Subject No. 14: To review and approve the list of recommended text books and reference books which are listed at the end of syllabi for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes.

Subject No. 15: To discuss and approve "English" as medium of instruction in I and II semesters of B.A., History course as for Go.Ms.No. 49 issued on 16-09-2021 by the Government of Andhra Pradesh.

Subject No. 16: To organize National Seminars / International Seminars / conferences /Workshops / Webinars related to History.

Subject No. 17: Any other matter with the permission of Chairman, BOS of History.

Dr.B.Brahmaiah,
HOD,Chairman, Board of Studies of History,
D.N.R.College (A), Bhimavaram.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

BOARD OF STUDIES MEETING IN DEPARTMENT OF HISTORY

Resolutions

After discussing the subjects stated in the agenda, the following resolutions have been passed in the online meeting of the Board of Studies held on 15-11-2021 Monday at 2:00 PM in the Department of History.

Resolution No. 1: It is unanimously approved the syllabi for 3rd and 4th Semester course of B.A. History in paper III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Resolution No. 2: It is unanimously approved the structure of the question papers, model question papers for B.A course in Paper III, IV & V with maximum marks 75 of 3rd and 4 th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (R.C.B.C.S.) w.e.f. the academic year 2021-22onwards.

Resolution No. 3: It is unanimously approved the break-up of the Internal assessment test marks 25 in 3rd and 4th semester B.A. History course in papers III , IV & V for adoption and implementation under Revised Choice Based Credit system.

a) Written Examination : 15 Marks.

b) Assignment : 05 Marks.

c) Co-Curricular activities : 05 Marks.

Resolution No. 4: It is collectively approved the qualifying marks in B.A. History Course for papers III, IV & V of 3rd and 4th semesters end theory examination for adoption and implementation under revised C.B.C.S.

Resolution No. 5: It is collectively approved the syllabi of Bridge course and discuss the mode of conduct of Bridge course classes for the academic year 2021-2022.

Resolution No. 6: It is approved the list of paper setters and examiners for B.A., History course.

Resolution No.7: It is collectively approved the list of recommended text books and reference books which are listed at the end of syllabi in paper III, IV and V of B.A. History course.

Resolution No. 8: It is cooperatively approved to enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Resolution No.9: It is unanimously approved the existing syllabi, model question papers of theory of I, II,V and VI semesters in paper I, II, 3A, 3B, 4A, 4B, 5B, and 6B of B.A. History course.

Resolution No.10: It is communally agreed To procure latest editions of text books, reference books, journals , e- journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Resolution No.11: It is discussed and approved the syllabus for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revised C.B.C.S., for adoption and implementation from the academic year 2021-22 onwards.

Resolution No. 12: It is discussed and approved the model question paper, table marks and structure of question paper for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revise C.B.C.S., being implemented from the academic year 2021-22 onwards.

Resolution No. 13: It is collectively approved the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes under revised C.B.C.S., for adoption and implantation from the academic year 2021-22 onwards.

Resolution No. 14: It is reviewed and approved the list of recommended text books and reference books which are listed at the end of syllabi for certificate course on "Historical Application in Tourism" in 3rd B.A., Semester Programmes.

Resolution No. 15: It is unanimously approved "English" as medium of instruction in I and II semesters of B.A., History course as for Go.Ms.No. 49 issued on 16-09-2021 by the Government of Andhra Pradesh.

Resolution No. 16: It is collectively approved to organize National Seminars / International Seminars / conferences /Workshops / Webinars related to History.

Resolution No. 17: Nil

Dr.B.Brahmaiah
HOD,Chairman, BOS of History
D.N.R.College (Autonomous),Bhimavaram

D.N.R.College (Autonomous),Bhimavaram
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(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
II B.A., Semester- III
Subject- History, Paper-3,
(w.e.f : 2020-21 academic year)
Title: Modern Indian History & Culture (1764-1947 A. D)
Syllabus

B.A.	Semester:III	Credits:4
Course:3	Modern Indian History & Culture (1764-1947 A. D)	Hrs/Wk:5

Learning Outcomes:
After successful completion of this course, the student will be able to:

- Unearth the true nature of the British rule and its disastrous impact on Indian economy and society
- Gauge the disillusionment of people against the Company's rule even during the early 19th century
- Assess the causes and effects of Reformation movements and also inspire the public to overthrow inequalities of the present day society
- Rise above petty parochial issues after understanding the sacrificial saga of freedom struggle
- Evaluate the undercurrent of communal politics that led to India's partition and identify the enemies of India's integrity and sovereignty
- Visualize where places are in relation to one another through map pointing

UNIT I:
Policies of Expansion Warren Hastings, Cornwallis - Subsidiary Alliance & Doctrine of Lapse – Causes & Results of 1857 Revolt - Lytton, Rippon, Curzon
UNIT II:
Social, Religious & Self-Respect Movements – Raja Rammohan Roy, DayanandaSaraswathi, Swami Vivekananda, JyotibaPhule,Savitribai, Narayana Guru, Periyar, Dr. B. R. Ambedkar
UNIT III:
Causes for the growth of Nationalism - Freedom Struggle from 1885 to 1920 , Moderate Phase – –Militant Phase: Vandemataram Movement - Home Rule Movement
UNIT IV:
Freedom Struggle from 1920 to 1947: Gandhiji's Role in the National Movement – Revolutionary Movement – Subhas Chandra Bose
UNIT V:
Muslim League & the Growth of Communalism – Partition of India -- Advent of Freedom – Integration of Princely States into Indian Union – Sardar Vallabhai Patel

REFERENCES BOOKS:

1. Anil Seal, Emergence of Indian Nationalism
2. Banerjee, Sekhar, From Plassey to Partition
3. Bipan Chandra, Rise and Growth of Economic Nationalism in India
4. Chandra, Bipan, et. al., India's Struggle for Independence
5. Bipan Chandra, Modern India
6. Joshi, P.C., Rammohun and the Forces of Modernisation in India
7. R.P.Dutt, India Today

D.N.R.COLLEGE (Autonomous), Bhimavaram
II B.A., semester-III
Subject: History, Paper-3 (2A),
MODEL QUESTION PAPER
Title: Modern Indian History & Culture (1764-1947 A. D)

Time : 3 Hrs Max. Marks: 75

Part-A భాగం –ఎ

Answer any FIVE of the following question and each question carries 5 marks.
ఈ క్రింది వాని లో ఏవైనా ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 5 మార్కులు .

5x5=25 Marks

1.Lord Curzon కర్జన్ ప్రభువు

2. Narayana Guru నారాయణ గురు

3. Reforms of Jyotiba Pule జ్యోతిబా పూలే సంస్కరణలు

4. Annie Besant and Helena Petrovna Blavatsky

అన్నీ బెసెంట్ మరియు హెలెనా పెట్రోవ్నా బ్లావాట్స్కీ

5. Dadabai Nauroji దాదాబాయి నౌరోజీ

6 Bhagat Singh భగత్ సింగ్

7.Aravind Ghosh అరవింద్ ఘోష్

8. Muslim League ముస్లిం లీగ్

Part -B భాగం -బి

Answer FIVE questions and each question carries 10 marks ఈ క్రింది వానిలో ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 10 మార్కులు .

5x10 =50 Marks

9
a) Discuss the Doctrine of Laps theory of Lord Dalhousie

లార్డ్ డల్హౌసీ యొక్క రాజ్య సంక్రమణ సిద్ధాంతమును గురించి చర్చింపుము

b) What are the causes the results for the 1857 revolt?

1857 తిరుగుబాటుకు గల కారణాలు మరియు ఫలితాలు ఏవి ?

10.

a) Explain services of **Raja Ram Mohan Roy** to the Indian society?

భారత సమాజానికి రాజా రామ్ మోహన రాయ్ చేసిన సేవలను వివరింపుము

(Or)

b) What are the services of Dr. B.R. Ambedkar to Indian society

డాక్టర్ బి.ఆర్. అంబేడ్కర్ భారతీయ సమాజానికి చేసిన సేవ ఎట్టిది?

11.

a) Discuss the reasons for growth of Nationalism in India

భారతదేశంలో జాతీయవాదం పెరగడానికి గల కారణాలను చర్చించండి

(Or)

b) What is the role of moderates in freedom movement?

స్వాతంత్ర్య ఉద్యమంలో మితవాదుల పాత్ర ఏమిటి?

12.

a) Write about Home rule movement in India

భారతదేశంలో జరిగిన హోమ్ రూల్ ఉద్యమం గురించి రాయండి

(Or)

b) What is the role of Gandhiji in freedom movement?

స్వాతంత్ర్య ఉద్యమంలో గాంధీజీ పాత్ర ఏమిటి?

13.

a) What is the role of Subhas Chandra Bose in freedom struggle?

స్వాతంత్ర్య సంగ్రామంలో సుభాస చంద్రబోస్ యొక్క పాత్ర ఏమిటి?

(Or)

b) What is the role of Sardar Vallabhai Patel in integration of princely states into Indian Union?

భారతదేశ స్వదేశీ సంస్థానాల విలీనములో సర్దార్ వల్లభాయ్ పటేల్ పాత్ర ఎట్టిది?

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with potencial for excellence)
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II B.A., Semester-III

Subject: History, Paper- 3

(w.e.f. 2020-21 academic year)

Title: Modern Indian History & Culture (1764-1947 A. D) Semester: III

Department of History

Blueprint for paper setter

Time: 3 hrs **Max.Marks: 75**

1. Syllabus is derived into 5 units

2. Question Paper is to be set in two parts. Part- A and Part-B.

Part –A- short answer questions. Each question carries '5' marks (1-8)

Part- B- Essay answer questions. Each question carries '10' (9-13)

Questions	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V
Short answer questions	01	02	02	01	02
Essay Questions	02	02	03	02	01

(Dr.B.Brahmaiah),
HOD,Chairman,Board of Studies of History,
D.N.R.College (A), Bhimavaram.

D.N.R.COLLEGE (Autonomous), Bhimavaram
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II B.A., semester-IV
Subject: History, Paper-4,
(w.e.f : 2020-21 academic year)
Title: History & Culture of Andhra (from 1512 to 1956 AD)
Syllabus:

B.A.	Semester:III	Credits:4
Course:4	History & Culture of Andhra (from 1512 to 1956 AD)	Hrs/Wk:5

Learning Outcomes:

After successful completion of this course, the student will be able to:

- Interpret social and culture transformation from medieval to modern Andhra
- Relate key historical development during medieval period occurring in costal Andhra and Telangana regions and analyze socio-political and economic changes under Qutbshahi rules
- Understand gradual change, or change in certain aspects of society in Andhra, rather than rapid or fundamental changes.
- Explain how the English East India company became the most dominant power and outline the impact of colonial on different aspects in Andhra.
- Outline the issues related to caste, women, widow remarriage , child marriage, social reforms and the laws and policies of colonial administration towards these issues.
- Take pride in the non-violence struggle for Indian Independence and relate the important of peace in every life.
- Apply the knowledge of the regional history to understand the regional, linguistic and other cultural aspirations of the present day society
- Visualize where places are in relation to one another through map pointing

UNIT I:

Andhra through 16th & 19th Centuries AD: Evolution of Composite culture- the Quatbshahi of Golkonda- Administration, Society &Economy - Literature & architecture: Advent of European and settlements inAndhra - Occupation of Northren Cricars and Ceeded Districts - Early revolts against the British.

UNIT II:

Andhra Under British ruel: Administration - Land revenue settlements -Society - Education - Religion -Impact of Industrial revolution on economy- peasantry &famines - contribution of sir thomas munroe &C.P. Brown - impact of 1857 revolts in Andhra.

UNIT III:

Social Reforms,Adi Andhra, Dalit &New literary Movements : Kandukuri Veeresalingam, Ragupathi Venkatarathnam Naidu, Gurazada AppaRao,Kommarraju Venkata Laxman Rao ; New literacy movements :Rayaprolu SubbaRao, Viswanath Satyanarayana, Gurram Jashua , Boyi Bhimanna, Sri Sri.

UNIT IV:

Freedom Movement in Andhra (1885-1947): Vandemataram Movement– Home Rule Movement in Andhra - Non-Cooperation Movement - AlluriSeetarama Raju &Rampa Revolt (1922-24) – Civil Disobedience Movement – Quit India Movement.

UNIT V:

Movement for separate Andhra State (1953) and AP (1956): Causes – Andhra Maha Sabha – Conflict between Coastal Andhra &Rayalaseema – Sri Bagh Pact - work of various Committees – Martyrdom of PottiSriramulu – Formation of separate Andhra State (1953); Movement for formation of Andhra Pradesh (1956): VisalandhraMahasabha – Role of Communists – States Reorganization Committee – Gentlemen's Agreement - Formation of Andhra Pradesh

REFERENCES BOOKS:

1. H.K.Sherwani, History of the KutubShahi Dynasty
2. K. Sathyanarayana, A Study of the History and Culture of Andhras
3. B. Kesava Narayana, Political and Social Factors in Modern Andhra
4. K.V.Narayana Rao, The Emergence of Andhra Pradesh
5. M. VenkataRangaiah, The Freedom Struggle in Andhra Pradesh
6. P.R.Rao, History of Modern Andhra
7. SarojiniRegani, Highlights of Freedom Movement
8. SarojiniRegani,
9. V. Ramakrishna, Social Reform Movement in Andhra
10. B. Kesava Narayana, Modern Andhra & Hyderabad – 1858 – 1956 A.D., 2016
11. K. Koti Reddy, History of Modern Andhra, Telugu Academy, Hyderabad

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to **ADIKAVI NANNAYA UNIVERSITY**)
II B.A., semester-IV
Subject: History, Paper-4,
Title: History & Culture of Andhra (from 1512 to 1956 AD)
Model Question Paper

Time: 3 hrs Max.Marks: 75

Part-A భాగం –ఎ

Answer any FIVE of the following question and each question carries 5 marks.
ఈ క్రింది వాని లో ఏవైనా ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 5 మార్కులు .

5X5=25 marks

1. Quli Qutub Shah కులీ కుతుబ్ షా

2. Datta Mandalalu దత్త మండలాలు

3. Dalit దళిత

4.Vande Mataram వందే మాతరం

5. Veeresalingam pantulu వీరేశలింగం పంతులు

6.Rayaprolu Subbarao రాయప్రోలు సుబ్బారావు

7.Andhra ఆంధ్ర

8. Sri Bagh Pact శ్రీ బాగ్ ఒప్పందం

Part – B భాగం -బి

Answer FIVE questions of the following and each question carries 10 marks
ఈ క్రింది వానిలో ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 10 మార్కులు .

5x10 =50 marks

9.
a) Discuss the Social andeconomic conditions of Qutub Shahis

కుతుబ్ షాహీల సామాజిక మరియు ఆర్థిక పరిస్థితుల గురించి చర్చించండి

(or లేదా)

b) Describe the early rev of Anolts in Adhra Desa

ఆంధ్ర దేశపు తొలి తిరుగుబాట్లను గురించి వివరించండి

10.

a) Explain the impact of Industrial revolution on Andhra economy

ఆంధ్ర దేశ ఆర్థిక వ్యవస్థపై పారిశ్రామిక విప్లవ ప్రభావాన్ని వివరింపుము

(or లేదా)

b) Discuss the impact of 1857 revolt on Andhra.

ఆంధ్రపై 1857 తిరుగుబాటు ప్రభావాన్ని చర్చింపుము.

11.

a) Write the modern reforms of the Gurujada Venkata Apparao

గురుజాడ వెంకట అప్పారావు ఆధునిక సంస్కరణలను గురించి వ్రాయండి

(or లేదా)

b) "Gurram Jashuva used literary for social development"- Explain

"గుర్రం జాషువా సామాజిక అభివృద్ధి కోసం సాహిత్యాన్ని ఉపయోగించారు"- వివరించండి

12.

a) Write about Home rule movement in Andhra

ఆంధ్రలో బరిగిన హోమ్ రూల్ ఉద్యమం గురించి రాయండి

(or లేదా)

b)Explain the patriotism of Alluri Seetarama Raju

అల్లూరి సీతారామరాజు దేశభక్తిని వివరింపుము

13.

a) Write an essay about Martyrdom of PottiSriramulu.

అమరజీవి పొట్టి శ్రీరాములు బలిదానం గురించి ఒక వ్యాసం రాయండి

(or లేదా)

b)Explain the Formation of Andhra Pradesh

ఆంధ్రప్రదేశ్ ఏర్పాటును వివరించుము

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
II B.A., Semester-III

Subject: History, Paper- 4

(w.e.f. 2020-21 academic year)

Title: History & Culture of Andhra (from 1512 to 1956 AD)

Blueprint for paper setter

Time: 3 hrs **Max.Marks: 75**

1. Syllabus is derived into 5 units

2. Question Paper is to be set in two parts. Part- A and Part-B.

Part –A- short answer questions. Each question carries '5' marks (1-8)

Part- B- Essay answer questions. Each question carries '10' (9-13)

Questions	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V
Short answer questions	01	02	02	01	02
Essay Questions	02	02	03	02	01

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
II B.A., semester-IV
Subject: History, Paper-5,
(w.e.f : 2020-21 academic year)
Title:History of Modern World (From 15th Cent. AD to 1945 AD)
Syllabus

B.A.	Semester:III	Credits:4
Course:5	History of Modern World (From 15th Cent. AD to 1945 AD)	Hrs/Wk:5

Learning Outcomes:
After successful completion of this course, the student will be able to:

- Demonstrate advanced factual knowledge of world histories, politics, and cultures
- Assess and appraise the developments in art, literature, and society during the Renaissance and utilize content knowledge of the Reformation and Counter Reformation to make predictions about the evolution of Christianity in Europe and abroad.
- Evaluate the causes for the Glorious Revolution and American Revolution and identify the background for the evolution of human rights movement.
- Understand the main events of the French Revolution and its significance in the shift in European culture from Enlightenment to Romanticis.
- Think how Russia's traditional monarchy was replaced with the world's first Communist state.
- Know how the world wars affected people all over the world and the destruction they caused.
- Develop the intellectual curiosity and habits of thought that will lead to life-long learning and continued engagement with European history, literature, culture, languages, and current affairs and acquire advanced international and intercultural competency through coursework in international studies.
- Visualize where places are in relation to one another through map pointing.

UNIT I:
Transformation from Medieval to Modern Era – Chief Characteristics; Glorious Revolution (1688) Origin of Parliament Bill of Rights – Results
UNIT II:
American Revolution (1776); French Revolution (1789) – Causes, Course and Results
UNIT III:
Unification of Italy; Unification of Germany –impact.
UNIT IV:
Communist Revolution in Russia; World War I: Causes - - Results of the War – Paris Peace Conference; League of Nations
UNIT V:
World War II: Causes, Fascism & Nazism – Results; The United Nations Organization: Structure, Functions and Challenges.

REFERENCES BOOKS:
1. Burke, Peter, The Renaissance

2. C.J.H. Hayes, Modern Europe up to 1870
3. C.D. Hazen, Modern Europe up to 1945
4. Christopher Hill, From Reformation to Industrial Revolution
5. Elton, G.R., Reformation Europe, 1517-1559
6. Ferguson, The Renaissance
7. Gilmore, M.P., The World of Humanism, 1453-1517
8. Hilton, Rodney, Transition from Feudalism to Capitalism
9. J.H.Parry, The Age of Renaissance
10. J.N.L. Baker, History of Geographical Discoveries and Explorations
11. The New Cambridge Economic History of Europe, Vol. I, VII

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
II B.A., semester-IV
Subject: History, Paper-5,
(w.e.f : 2020-21 academic year)
Title: History of Modern World (From 15th Cent. AD to 1945 AD)

Model Question Paper

Time: 3 hrs Max.Marks: 75

Part-A భాగం --ఎ

Answer any FIVE of the following question and each question carries 5 marks.
ఈ క్రింది వాని లో ఏవైనా ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 5 మార్కులు .

5X5=25 Marks

1. Modern era
2. Bill of Rights హక్కుల బిల్లు
3. George Washington జార్జ్ వాషింగ్టన్
4. Nepoleon నెపోలియన్
5. Young Italy-యంగ్ ఇటలీ
6. Zollverein or customs Union-జోల్వెరిన్ లేదా కస్టమ్స్ యూనియన్
7. League of Nations నానాజాతి సమితి
8. Fascism ఫాసిజం

Part – B భాగం -బి

Answer FIVE questions of the following and each question carries 10 marks ఈ క్రింది వానిలో ఐదు ప్రశ్నలకు సమాధానం వ్రాయుము మరియు ప్రతి ప్రశ్నకు 10 మార్కులు .

5X10=50 Marks

9.

a) What is the significance of the Glorious Revolution (1688) ?
మహా విప్లవం (1688) యొక్క ప్రాముఖ్యత ఏమిటి?

(or లేదా)

b) write an essay about origin of Parliament

పార్లమెంట్ పుట్టుకను గురించి ఒక వ్యాసం వ్రాయుము

10.
a) Explain the causes for American Revolution (1776)
అమెరికా విప్లవానికి గల కారణాలను వివరించుము (1776)

(or లేదా)

b) Discuss the causes of the French Revolution (1789)
ఫ్రెంచి విప్లవనికి (1789) గల కారణాలను చర్చింపుము

11.
a) Write about the regime reforms introduced by Bismarck in Germany

బిస్మార్క్ జర్మనీలో ప్రవేశపెట్టిన పాలన సంస్కరణలను గూర్చి వ్రాయుము

(or లేదా)

b) What was the role of Majini, Count Kaur and Gary Balti in the unification of Italy?

మాజిని, కౌంట్ కావూరు , గారి బాల్టి ఇటలీ ఏకీకరణలో వహించిన పాత్ర ఎట్టిది ?

12.

a) Explain the causes of 1917 Russian communist revolution.

రష్యాలో 1917 కమ్యూనిస్ట్ విప్లవానికి గల కారణాలను గూర్చి వివరింపుము

(or లేదా)

b) Write down the causes and results for the First World War

మొదటి ప్రపంచ యుద్ధానికి గల కారణాలను మరియు ఫలితాలను వ్రాయుము

13.

c) Explain the causes and results for the Second World War?

రెండవ ప్రపంచ యుద్ధానికి గల కారణాలు మరియు ఫలితాలను వివరింపుము

(or లేదా)

b) What are the achievements and defects of United Nations Organization?

ఐక్యరాజ్యసమితి సాధించిన విజయాలు మరియు దానిలోని లోపాలు ఏవి ?

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
II B.A., semester-IV
Subject: History, Paper-5,
(w.e.f : 2020-21 academic year)
Title:History of Modern World (From 15th Cent. AD to 1945 AD)

Blueprint for paper setter

Time: 3 hrs **Max.Marks: 75**

1. Syllabus is divided into 5 units

2. Question Paper is to be set in two parts. Part- A and Part-B.

   Part - A- short answers questions. Each question carries '5' marks (1-8)

   Part- B- Essay answers questions. Each question carries '10' (9-13)

Questions	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V
Short answer questions	01	01	02	02	02
Essay Questions	02	02	02	02	02

Dr.B.Brahmaiah,
HOD,Chairman,Board of Studies of History,
D.N.R.College (A), Bhimavaram.

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
Department of History
Bridge Course

Sl.No.	Syllabus	Number of hours required
1	Meaning, Definition, Scope of History	2
2	What is History History	1
3	History is a social science	1
4	Importance of History	2
5	Ancient Civilisations	3
6	Administration - polity, Economy, Religion	2
7	Indian Heritage and Culture	2
8	Bhakti Movement Composite Culture	2

Dr. B.Brahmaiah
HOD, Chairman, BOS in History
D.N.R. College (Autonomous) Bhimavara

D.N.R.COLLEGE (Autonomous), Bhimavaram
(College with potencial for excellence)
(Affiliated to ADIKAVI NANNAYA UNIVERSITY)
Certificate Course for II B.A.
Paper title: **Historical Application in Tourism**
Department of History

Syllabus:

Chanter-1: Tourism, Definition, Nature & Sope, Concepts- History of Tourism and its development Motivations for travel- Types of Tourism.

Chapter-II: Social and Economic significances of Tourism. Tourism as an Industry-Components of Tourism industry- Attraction, transport of Accommodation, shopping, Entertainment Hospitality

Chapter-II: Archeological Importance Ajanta, Ellora, Sanchi, Amaravathi, Nagarjunakonda, Mahabalipuram, and Kanchi.

References:

1. Lucas Jr., H. C. *Information Technology for Management*, McGraw Hill, 2005
2. Shobita Chopra, *Tourism and Development in India,* New Delhi, 1992
3. Singh Ratandeep : *Handbook of Environmental Guidelines for Indian Tourism*
4. Bhatia, A.K., *Tourism Development Principles and Practices*, New Delhi, 1983
5. Bhatia, A.K., *Tourismin India*, New Delhi
6. VirendraKaul, *Tourism and the Economy,* New Delhi, 1994
7. Gopal Singh, *The Geography of India* , Delhi ,1988
8. Ghulam Yazdan, The Art and Architecture of Deccan
9. Burkart A.J. and Medlik , Tourism: Past Present & Future : (London, Heinemann)
10. M.P. Bezbaruah, Tourism : Future Challenges and Opportunities.
11. John Anderson, Catalogue and Handbooks of the Archaeological Collections in the Indian
12. Museum, 2 Volumes
13. Seth P.N. *Successful Tourism - Planning and Management,* New Delhi, 1987
14. Allchin F.R. *Cultural Tourism in India; Its scope and Development,* New Delhi

DNR College (Autonomous) Bhimavaram
Certificate Course for II B.A.
Title: Historical Application in Tourism
Model Question Paper

Time: 2 hours Max Marks: 50

Answer the following Questions

1.Explain the Nature and scope of Tourism
పర్యాటకం యొక్క స్వభావం మరియు పరిధిని వివరించుము.

2. Explain the Advantages and limitations of Tourism.
పర్యాటకం యొక్క ప్రయోజనాలు మరియు పరిమితులను వివరించుము.

3. Write about the Andhra Pradesh Tourism development Corporation.
ఆంధ్రప్రదేశ్ పర్యాటక అభివృద్ధి సంస్థ గురించి వ్రాయుము.

4. What are the plans to develop Tourism of Andhra Pradesh.
ఆంధ్రప్రదేశ్ టూరిజం అభివృద్ధికి ఎలాంటి ప్రణాళికలు ఉన్నాయి.

5. Write about the Tourist Resources of Andhra Pradesh.
ఆంధ్రప్రదేశ్ పర్యాటక వనరుల గురించి వ్రాయుము.

DNR College (Autonomous) Bhimavaram

Certificate Course for II B.A

Title: Historical Application in Tourism

Periods, marks and exam:

1	2	3	4	5	6	7	8
Weekly	Total weeks	Total periods	Total marks	Exam time	Pattern of exam	Allotted marks to each essay	Conducted authority
4 periods	10	40	50	2 hours	Essay	10	Autonomous section

Dr. B.Brahmaiah,
HOD, Chairman, BOS in History,
D.N.R. College (Autonomous) Bhimavara

D.N.R.COLLEGE(AUTONOMOUS):: BHIMAVARAM
BOARD OF STUDIES MEETING 2021-2022
DEPARTMENT OF CHEMISTRY

Minutes of the Chemistry Board of Studies meeting held on 15-11-2021at02.00 P.M. through ONLINE in the Department of Chemistry, D.N.R. College (A), Bhimavaram.

Members :

S.NO.	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	Sri S.Anil Dev Lecturer In -Charge Department of Chemistry D.N.R.College(A), Bhimavaram	Chairman	S. Anil Dev
2	Sri K.Sivaji Raju Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	K. Sivaji Raju
3	Sri R.B.Somayajulu Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	R.B.Somayajulu
4	Mrs. K.T.Bhavani Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	K.T.Bhavani
5	Mrs. D. Bala Durga Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	D. Baladurga.
6	Miss P. Divya Sri Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	P. Divya Sri
7	Mrs. P. Durga Jyothi Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	P. Durga Jyothi
8	Miss . P. Vani Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	P. Vani
9	Miss.V.Sravani Lecturer in Chemistry D.N.R.College(A), Bhimavaram	Member	V. Sravani
10	Dr.B.Ananda Kumar, Lecturer in Chemistry Govt Art College (A),RJY bokkaak2003@gmail.com, 9912020823	University Nominee	ATTENDED THROUGH ONLINE
11	Sri N.V.N.B. Srinivasa Rao Lecturer in Chemistry S.Ch.V.P.M.R GOVT Degree College, Ganapavaram naaduri75@gmail.com, 9440510771	Subject Expert	ATTENDED THROUGH ONLINE
12	Sri K.Rama Krishna Lecturer in Chemistry SKSD Mahila Kalasala (A) , Tanuku Kantipudiramakrishna78@gmail.com 94848692244	Subject Expert	ATTENDED THROUGH ONLINE
13	Dr.N.Vijaya Kumar Lecturer in Chemistry ASNM Govt., College(A), Palakol	Special Invitee	ATTENDED THROUGH ONLINE
14	Sri A.V.R.Gajapathi Raju Lecturer in Chemistry S.Ch.V.P.M.R.Govt, Degree College, Ganapavaram	Alumni Member	ATTENDED THROUGH ONLINE
15	Sri G.Panduranga Raju Chairman, Delta Paper Mill Ltds.Vendra	Industrial Expert	ABSENT
16	Ms.Hema Madhavi III B.Sc., (BZC), R.No. 865	Student Representative	P. Hema Madhavi

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES MEETING ON 15-11-2021 AT 2:00 To 03:00 PM
THROUGH ONLINE

AGENDA

Subject No. 1: To approve the syllabi for 3rd and 4th Semester course of Chemistry in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject No. 2: To approve the structure of the question papers, model question papers For Chemistry courses of paper I, II, III, IV & V with maximum marks 75 of 1st, 2nd, 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject No. 3: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Chemistry courses, of papers III, IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject No. 4: To approve the break-up of the internal assessment test marks 25 in 3rd and 4th Semester Chemistry Course(s) of papers III, IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f the academic year 2021-22 onwards.

Subject No. 5: To approve the qualifying marks in Chemistry course(s) for papers III, IV and V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No. 6: To review the existing syllabi, model question papers of both theory and practicals of I,II V and VI semester Chemistry course(s) in papers I,II, 3A, 3B, 4B, 5B, 6B.

Subject No. 7: To review the syllabi of Bridge course and discuss the mode of conduct of Bridge course classes for the academic year 2021-22.

Subject No. 8: To approve the list of paper setters and examiners for Chemistry course(s).

Subject No. 9: To approve the list of recommended text books and reference books which arelisted at the end of syllabi of papers III, IV and V in Chemistry courses.

Subject No. 10: To enter into MOUs with reputed Institutions, Organisations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.

Subject No. 11: To procure latest editions of text books, reference books, journals, e-journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Subject No. 12: To approve the introduction of English Medium in B.Sc. Chemistry Courses in pursuance to the G.O.Ms. No.49 dt., 16-09-2021 issued by Govt. Of Andhra Pradesh.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

RESOLUTIONS

Resolution No. 1: Resolved to approve the syllabi for the 3rd and 4th semester course of Chemistry In papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No. 2: Resolved to approve structure of the question paper, model question papers for Chemistry course of papers I, II III, IV and V with maximum marks 75 of 1st, 2nd, 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No. 3: It is Unanimously resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in break up Marks in Chemistry Course of papers III, IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

1. Written
2. Record / Field work
3. Viva Voice

Resolution No. 4: It is Unanimously resolved to approve the break-up of marks of the Internal assessment test 25 marks in 3rd and 4th semester in Chemistry course(s), paper III, IV and V as given below from the academic year 2021-22 for adoption and implementation under Revised CBCS. Written examination – 15 Marks, Assignment / Seminar / Multiple Choice questions-5, E.C.A - 5 Marks.

Resolution No. 5 : It is unanimously resolved to approve the qualifying marks in Chemistry course(s), papers III, IV and V of 3rd and 4th Semesters end examinations (Theory examination 40 marks and practical examination 20 marks.)

Resolution No. 6: The existing syllabi, model question papers of both theory and practicals of I, II, V and VI semester Chemistry Course in papers I, II, 3A,3B, 4A,4B, 5B and 6B have been reviewed thoroughly.

Resolution No. 7: Resolved to approve the syllabi of Bridge course and to conduct Bridge course classes through online for the academic year 2021-22.

Resolution No. 8: Resolved to approve the following list of paper setters and examiners for Chemistry course(s).

Resolution No. 9: Resolved to approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III, IV and V in Chemistry Course(s).

Resolution No. 10: Reviewed the functioning of MoU's on hand and resolved to checkout modalities to enter into further MoU's with academically renowned Institutions, Organisations, Research Laboratories, Industries based upon the need of revised CBCS curriculum.

Resolution No. 11: Resolved to procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resourceful for both students and faculty members.

Resolution No. 12: Resolved to approve the introduction of English Medium in B.Sc. Chemistry Course in pursuance to the G.O. Ms.No.49 dt. 16-09-2021 issued by Govt. Of Andhra Pradesh.

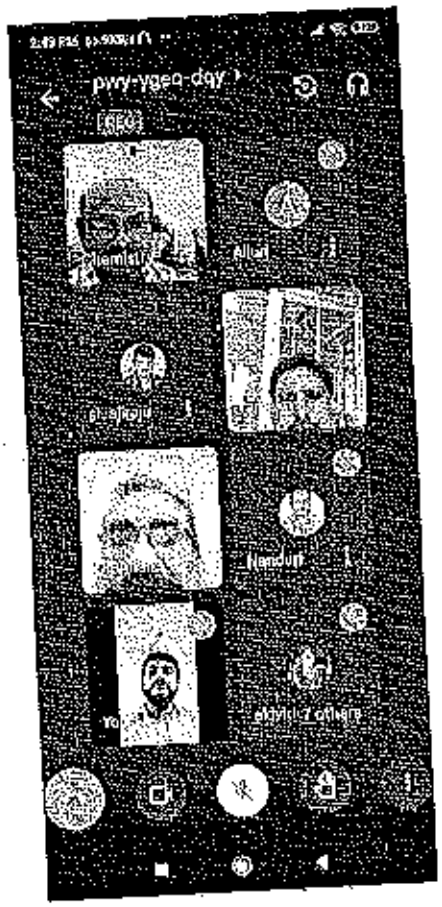
DNR CHEMISTRY UG

oday at 4:34 am

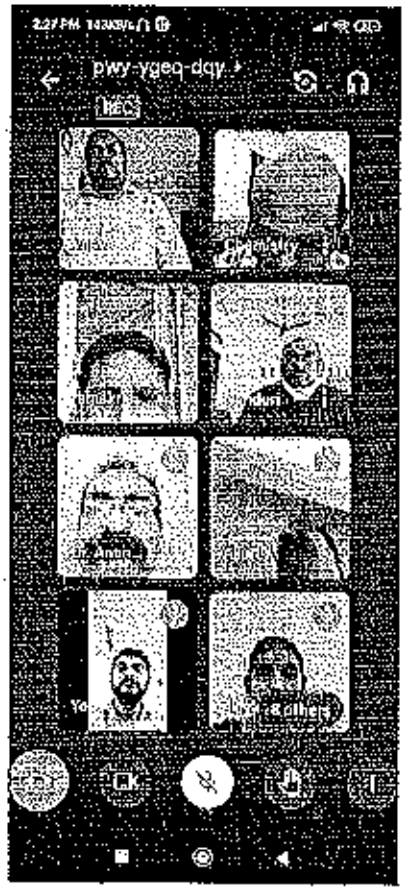
4, 8:53 AM

@:DNR CHEMISTRY UG

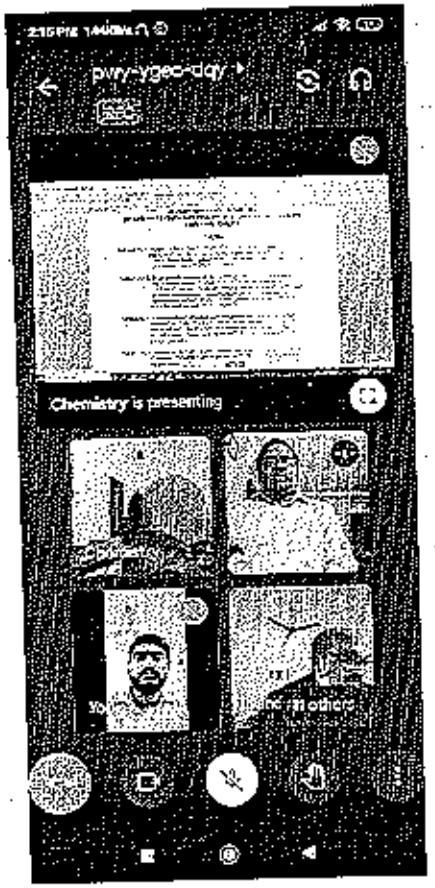
Today at 4:34 am



R @ DNR CHEMISTRY UG
today at 4:44 am



today at 4:34 am



4 of 5

SEMESTER – I

Course 1 (Inorganic & Physical Chemistry) **60 hrs.(4H/W)**

Course outcomes:

At the end of the course, the student will be able to;

1. Understand the basic concepts of p-block elements
2. Explain the difference between solid, liquid and gases in terms of inter molecular interactions.
3. Apply the concepts of gas equations, pH and electrolytes while studying other chemistry courses.

INORGANICCHEMISTRY 24 H

UNIT –I

Chemistry of p-block elements 8 H

Group 13: Preparation & structure of Diborane, Borazine

Group 14: Preparation, classification and uses of silicones

Group 15: Preparation & structures of Phosphonitrilic halides $\{(PNCl_2)_n$ where n=3, 4

Group 16: Oxides and Oxoacids of Sulphur (structures only)

Group 17: Pseudo halogens, Structures of interhalogen compounds.

UNIT-II

Chemistry of d-block elements 6 H

Characteristics of d-block elements with special reference to electronic configuration,variable valence, magnetic properties, catalytic properties and ability to form complexes.Stability of various oxidation states.

Chemistry of f-block elements 6 H

Chemistry of lanthanides - electronic structure, oxidation states, lanthanide contraction, consequences of lanthanide contraction, magnetic properties. Chemistry of actinides - electronic configuration, oxidation states, actinide contraction, comparison of lanthanides and actinides.

Theories of bonding in metals 4 H

Valence bond theory and Free electron theory, explanation of thermal and electrical conductivity of metals based on these theories, Band theory- formation of bands, explanation of conductors, semiconductors and insulators.

PHYSICALCHEMISTRY 36 H

UNIT-III

Solid state 10 H

Symmetry in crystals. Law of constancy of interfacial angles. The law of rationality of indices. The law of symmetry. Miller indices, Definition of lattice point, space lattice, unit cell. Bravais lattices and crystal systems.X-ray diffraction and crystal structure. Bragg's law. Powder method. Defects in crystals. Stoichiometric and non-stoichiometric defects.

UNIT-IV

Gaseous state 6 H

Van der Waal's equation of state. Andrew's isotherms of carbon dioxide, continuity of state. Critical phenomena. Relationship between critical constants and vander Waal's constants. Law of corresponding states. Joule- Thomson effect. Inversion temperature.

Liquid state 4 H

Liquid crystals, mesomorphic state. Differences between liquid crystal and solid/liquid. Classification of liquid crystals into Smectic and Nematic. Application of liquid crystals as LCD devices.

UNIT-V

Solutions, Ionic equilibrium & dilute solutions

Solutions 6 H

Azeotropes: HCl-H_2O system and ethanol-water system. Partially miscible liquids-phenol- water system. Critical solution temperature (CST), Effect of impurity on consulate temperature. Immiscible liquids and steam distillation. Nernst distribution law. Calculation of the partition coefficient .Applications of distribution law.

Ionic equilibrium 3 H

Ionic product, common ion effect, solubility and solubility product. Calculations based on solubility product.

Dilute solutions 7 H

Colligative properties- RLVP, Osmotic pressure, Elevation in boing point and depression in freezing point. Experimental methods for the determination of molar mass of a non-volatile solute using osmotic pressure, Elevation in boiling point and depression in freezing point. Abnormal colligative properties.Van't Hoff factor.

Co-curricular activities and Assessment Methods

1. Continuous Evaluation: Monitoring the progress of student'slearning
2. Class Tests, Worksheets andQuizzes
3. Presentations, Projects and Assignments and Group Discussions: Enhancescritical thinking skills andpersonality
4. Semester- end Examination: critical indicator of student's learning and teaching methods adopted by teachers throughout thesemester.

List of Reference Books

1. Principles of physical chemistry by Prutton andMarron
2. Solid State Chemistry and its applications by Anthony R.West
3. Text book of physical chemistry by K L.Kapoor
4. Text book of physical chemistry by SGlasstone
5. Advanced physical chemistry by Bahl andTuli
6. Inorganic Chemistry by J. E.Huheey
7. Basic Inorganic Chemistry by Cotton andWilkinson
8. A textbook of qualitative inorganic analysis by A.I.Vogel
9. Atkins,P.W.&Paula,J.deAtkin'sPhysicalChemistryEd.,OxfordUniversityPress 10thEd(2014).
10. Castellan, G.W.Physical Chemistry4th Ed. Narosa(2004).
11. Mortimer, R. G.Physical Chemistry3rdEd. Elsevier: NOIDA, UP(2009).
12. Barrow, G.M.PhysicalChemistry

D.N. R. COLLEGE (A), BHIMAVARAM
(Revised Choice Based Credit System – w.e.f. 2020 – 21)
I B.Sc. Degree Examination (At the end of First semester)
Subject: CHEMISTRY
COURSE I: INORGANIC & PHYSICAL CHEMISTRY
Model Question Paper with effect from 2021–2022

Time: 3Hours Max.Marks: 75M

Answer any FIVE Questions 5 X 10=50M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

SECTION – A

1. Explain classification, preparation and uses of silicones.
   సిలికోన్ల వర్గీకరణ, తయారీ మరియు ఉపయోగాలను వివరింపుము.
2. What are interhalogens? Explain the structures of AX_3 and AX_5 interhalogen compounds.
   అంతర హాలోజన్ సమ్మేళనాలు అనగా నేమి? AX_3మరియు AX_5 అంతర హాలోజన్ సమ్మేళనాల నిర్మాణాలను వివరింపుము.
3. What are d-block elements? Explain the following properties of d-block elements
   d-బ్లాక్ మూలకాలు అనగా నేమి? క్రింద ఇవ్వబడిన d-బ్లాక్ మూలకాల ధర్మాలను వివరింపుము.
   i) Electronic configuration ఎలక్ట్రాన్ విన్యాసము
   ii) Oxidation states ఆక్సీకరణ స్థితులు
4. What is lanthanide contraction? Explain the consequences of lanthanide contraction.
   లాంథనైడ్ సంకోచము అనగా నేమి? లాంథనైడ్ సంకోచము యొక్క పర్యవసానాలను వివరింపుము.
5. Explain about conductors, semiconductors and insulators using band theory.
   వాహకాలు, అర్ధ-సంవాహకాలు మరియు విసంవాహకాలను పట్టీ సిద్ధాంతము ద్వారా వివరింపుము.
6. What is Bragg's law? Explain the determination of structure of a crystal by powder method.
   బ్రాగ్ నియమము అనగా నేమి? చూర్ణ పద్ధతి ద్వారా స్ఫటిక నిర్మాణము నిర్ణయించుటను వివరింపుము.
7. Derive the relation between critical constants and Vaderwaal constants.
   సందిగ్ధ స్థిరాంకాలకు మరియు వాండర్ వాల్ స్థిరాంకాలకు మధ్యగల సంబంధమును ఉత్పాదించుము.
8. Write any five differences between liquidcrystals and liquids/solids.
   ద్రవ స్ఫటికాలకు మరియు ద్రవాలు/ఘనాలకు మధ్య ఏవైనా ఐదు తేడాలను వ్రాయుము.
9. Explain Nernst distribution law and explain its applications.
   నెర్నెస్ట్ వితరణ నియమము మరియు దాని అనువర్తనాలను వ్రాయుము.

10. What are colligative properties? Write experimental method for determination of molar mass of a non-volatile solute by using elevation of boiling point.
కణాధార ధర్మములు అనగా నేమి? భాష్పీభవన స్థానమును ఉపయోగించి అభాష్పశీలి ద్రావితపు అణుభారము నిర్ణయించు పద్ధతిని వ్రాయుము.

SECTION – B

Answer any FIVE Questions 5 X 5=25M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

11. Explain the preparation and structures of phosphonitrilic compounds.
ఫాస్ఫోనైట్రిలిక్ సమ్మేళనాల తయారీ మరియు నిర్మాణాలను వివరింపుము.

12. Explain the catalytic properties of d-block elements.
d-బ్లాక్ మూలకాల ఉత్ప్రేరక ధర్మములను వివరింపుము.

13. Write any two comparisons of lanthanides and actinides.
లాంథనైడ్లు మరియు ఆక్టినైడ్ల ఏవైనా రెండు పోలికలను వ్రాయుము.

14. Explain free electron theory.
స్వేచ్ఛా ఎలక్ట్రాన్ సిద్ధాంతమును వివరింపుము.

15. Explain crystal defects
స్ఫటిక దోషాలను వివరింపుము.

16. Describe Andrew's isotherm of carbon dioxide.
కార్బన్ డయాక్సైడ్ యొక్క ఆండ్రూస్ సమోష్ణోగ్రత వక్రమును వివరించుము.

17. What are smectic and Nematic liquid crystals? Explain.
స్మెక్టిక్ మరియు నెమాటిక్ ద్రవ స్ఫటికాలు అనగా నేమి? వివరింపుము.

18. Write an account on common ion effect and solubility product.
ఉమ్మడి అయాన్ ప్రభావము మరియు ద్రావణీయతా లబ్ధములను గూర్చి వ్రాయుము.

BLUE PRINT

UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
INORGANIC CHEMISTRY		
I CHEMISTRY OF P-BLOCK ELEMENTS	2	1
d-BLOCK ELEMENTS	1	1
f-BLOCK ELEMENTS	1	1
THEORIES OF BONDING IN METALS	1	1
PHYSICAL CHEMISTRY		
SOLID STATE	1	1
GASEOUS STATE	1	1
LIQUID STATE	1	1
SOLUTIONS, IONIC EQUILIBRIUM & DILUTE SOLUTIONS	2	1
	10	8

LABORATORY COURSE-I 30 H (2 H /W)

Practical-I Analysis of SALT MIXTURE (At the end of Semester-I)

Qualitative inorganic analysis (Minimum of Six mixtures should be analyzed)50 M

Course outcomes:

At the end of the course, the student will be able to;

1. Understand the basic concepts of qualitative analysis of inorganicmixture
2. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
3. Apply the concepts of common ion effect, solubility product and concepts relatedto qualitative analysis

Analysis of SALT MIXTURE 50M

Analysis of mixture salt containing two anions and two cations (From two different groups) from the following:

Anions: Carbonate, Sulphate, Chloride, Bromide, Acetate, Nitrate, Borate, Phosphate.

Cations: Lead, Copper, Iron, Aluminium, Zinc, Nickel, Manganese, Calcium, Strontium, Barium, Potassium and Ammonium.

D.N.R.COLLEGE (AUTONOMOUS) :: BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for I[st] B.Sc., Chemistry Practical – I (At the end of I semester)

w.e.f. 2020 - 2021

SYLLABUS

Qualitative inorganic mixture analysis

Analysis of mixture salt containing two anions and two cations (From two different groups) from the following:

Anions: Carbonate, sulphate, chloride, bromide, acetate, nitrate, borate, phosphate.

Cations: Lead, copper, iron, aluminum, zinc, manganese, nickel, calcium, strontium, barium, potassium and ammonium.

SCHEME OF VALUATION

Time: 3 Hours **Maximum Marks: 50M**

Record	Marks: 5M
Viva-Voce	Marks: 5M
Practical	Marks: 40M

For Preliminary Examination **Marks: 8M**

1. Colour		1 Marks
2. Structure		1 Marks
3. Solubility		2 Marks
4. Action of Heat		2 Marks
5. Flame colour test		2 Marks

For Anion **Marks: 16M**

6. Idenfication test for each anion	(2+2)	4 Marks
7. Confirmation tests for each anion without soda extrat	(3+3)	6 Marks

(For phosphate and sulphate 3 marks shall be added to the marks at item 8)

8. Procedure for the preparation of soda extrat		2 Marks
9. Confirmatory test for each anion with soda extract	(2+2)	4 Marks

(for carbonate and borate 2 marks shall be added to the marks at item 6 without this test)

For Cation **Marks: 14M**

10. Idenfication of the Groups	(2+2)	4 Marks
11. Colour of the ppt. in the identified Groups	(1+1)	2 Marks
12. Confirmatory test for cation in their respective individual Groups	(4+4)	8 Marks

Report **Marks: 2M**

SEMESTER – II

Course II – (Organic & General Chemistry) 60 hrs (4h/w)

Course outcomes:
At the end of the course, the student will be able to;

1. Understand and explain the differential behavior of organic compounds based on fundamentalconcepts learnt.
2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactantsinvolved.
3. LearnandidentifymanyorganicreactionmechanismsincludingFreeRadical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.
4. Correlateanddescribethestereochemicalpropertiesoforganiccompoundsand reactions.

ORGANICCHEMISTRY 36 H

UNIT-I

Recapitulation of Basics of Organic Chemistry

Carbon-Carbon sigma bonds (Alkanes and Cycloalkanes) 12 H

General methods of preparation of alkanes- Wurtz and Wurtz-Fittig reaction, Corey House synthesis, physical and chemical properties of alkanes, Isomerism and its effect on properties, Freeradicalsubstitutions; Halogenation, concept of relative reactivity v/s selectivity. Conformational analysis of alkanes (Conformations, relative stability and energy diagrams of Ethane,Propaneandbutane)Generalmolecularformulaeofcycloalkanesandrelativestability, Baeyer strain theory,Cyclohexaneconformationswithenergy diagram, Conformations of monosubstituted cyclohexane.

UNIT-II

Carbon-Carbon pi Bonds (AlkenesandAlkynes) **12 H**

General methods of preparation, physical and chemical properties. Mechanism of E1, E2, E1 cb reactions, Saytzeff and Hofmann eliminations, Electrophilic Additions ,mechanism (Markovnikov/Anti Markovnikov addition) with suitable examples,, syn and anti-addition; additionofH_2,X_2, HX.Oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, Diels Alderreaction,1,2- and1,4-addition reactions in conjugated dienes.Reactions of alkynes; acidity, electrophilic and nucleophilic additions, hydration to form carbonyl compounds, Alkylation of terminal alkynes.

UNIT-III

Benzene and its reactivity **12 H**

Concept of aromaticity, Huckel's rule - application to Benzenoid (Benzene, Naphthalene) and Non - Benzenoid compounds (cyclopropenylcation, cyclopentadienyl anion and tropyliumcation) Reactions-Generalmechanismofelectrophilicaromaticsubstitution,mechanismofnitration, Friedel- Craft's alkylation and acylation. Orientation of aromatic substitution - ortho, para and meta directing groups. Ring activating and deactivating groups with examples (Electronic interpretationofvariousgroupslikeNO2andPhenolic).Orientationof(i)Amino,methoxyand methyl groups (ii) Carboxy, nitro, nitrile, carbonyl and sulfonic acidgroups iii) Halogens (Explanation by taking minimum of one example from each type)

GENERALCHEMISTRY 24H

UNIT-IV

Surface chemistry and chemical bonding

Surface chemistry 6 H

Colloids- Coagulation of colloids- Hardy-Schulze rule. Stability of colloids, Protection of Colloids, Gold number.
Adsorption-Physicalandchemicaladsorption,Langmuiradsorptionisotherm,applicationsof adsorption.

ChemicalBonding 6 H

Valence bond theory, hybridization, VB theory as applied to ClF_3,$Ni(CO)_4$, Molecular orbital theory -LCAO method, construction of M.O. diagrams for homo-nuclear and hetero-nuclear diatomic molecules (N_2, O_2, CO and NO).

HSAB 2 H

Pearson's concept, HSAB principle & its importance, bonding in Hard-Hard and Soft-Soft combinations.

UNIT-V

Stereochemistry ofcarbon compounds 10 H

Molecular representations- Wedge, Fischer, Newman and Saw-Horse formulae.

Opticalisomerism:Opticalactivity-wavenatureoflight, planepolarisedlight,opticalrotation and specificrotation. Chiral molecules- definition and criteria (Symmetry elements)- Definition of enantiomers and diastereomers-Explanationofopticalisomerismwithexamples-Glyceraldehyde,Lacticacid, Alanine, Tartaric acid,2,3-dibromopentane. D,L, R,S and E,Z- configuration with examples. Definition of Racemic mixture – Resolution of racemic mixtures (any 3 techniques)

Co-curricular activities and Assessment Methods

Continuous Evaluation: Monitoring the progressofstudent'slearningClassTests,WorksheetsandQuizzesPresentations,Projectsand Assignments and Group Discussions: Enhances critical thinking skills and personality Semester-end Examination: critical indicator of student's learning and teaching methods adopted by teachers throughout thesemester.

List of Reference Books Theory:

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. &Wilen, S. H. Stereochemistry of Organic Compounds; Wiley: London, 1994.
5. Kalsi, P. S. Stereochemistry Conformation and Mechanism; New Age International, 2005.

D.N. R. COLLEGE (A), BHIMAVARAM
(Revised Choice Based Credit System – w.e.f. 2020 – 21)
I B. Sc. Degree Examination (At the end of second semester)
Subject: CHEMISTRY
COURSE II: ORGANIC & GENERAL CHEMISTRY
Model Question Paper with effect from 2021–2022

Time: 3Hours Max.Marks: 75M

Answer any FIVE Questions 5 X 10=50M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

SECTION – A

1. Explain halogenation of alkanes. Explain the reactivity and selectivity in free radical substitutions.
ఆల్కేన్ల హాలోజనీకరణను వివరింపుము. స్వేచ్ఛా ప్రాతిపదిక ప్రతిక్షేపణ లో చర్యావిధానము మరియు ఎంపికను వివరింపుము.

2. Draw the confirmations of cyclohexane and explain their stability by drawing energy profile diagram.
సైక్లోహెక్సేన్ యొక్క అనురూపకాలను గీయుము మరియు శక్తిస్థాయి చిత్రము ద్వారా అనురూపకాల స్థిరత్వమును వివరించుము.

3. A) Write any two methods of preparation of alkenes.
ఏవైనా రెండు ఆల్కీన్ల తయారీని వ్రాయుము.

B) Explain the mechanism of Markonikoff and anti-Markonikoff addition of HBr to alkene.
ఆల్కీన్ కు HBr సంకలనమును మార్కోనికోవ్ మరియు వ్యతిరేఖ మార్కోనికోవ్ చర్యావిధానమును వివరింపుము.

4. Explain the mechanism of nitration and Friedel-craft's alkylation of benzene.
బెంజీన్ యొక్క నైట్రీకరణము మరియు ఫ్రీడల్ క్రాఫ్ట్ ఆల్కైలీకరణము చర్యావిధానమును వివరింపుము.

5. Define Huckel rule? What are benzenoid and non-benzenoid aromatic compounds? Give examples.
హుకెల్ నియమమును నిర్వచించుము. బెంజినాయిడ్ మరియు నాన్-బెంజినాయిడ్ ఏరోమాటిక్ సమ్మేళనాలు అనగా నేమి? ఉదాహరణలనిమ్ము.

6. Differentiate physical and chemical adsorptions. Explain Langmuir adsorption isotherm.
భౌతిక మరియు రసాయన అధిశోషణముల తేడాలను తెలుపుము. లాంగ్ మ్యూర్ అధిశోషణ వక్రమును వివరింపుము.

7. Construct the molecular orbital diagram for O_2 and NO and explain their bond order and magnetic property.
O_2 మరియు NO అణుఆర్బిటాల్ చిత్రములను గీసి వాటి యొక్క బంధ క్రమము మరియు అయస్కాంత ధర్మములను వివరింపుము.

8. Explain the structures of ClF_3 and $Ni(CO)_4$ by valence bond theory.
సంయోజకతా బంధ సిద్ధాంతమును ఉపయోగించి ClF_3 మరియు $Ni(CO)_4$ నిర్మాణములను వివరింపుము.

9. Define racemic mixture. Explain any two techniques of resolution of racemic mixture.
రెసిమిక్ మిశ్రమము అనగా నేమి? రెసిమిక్ మిశ్ర పృథక్కరణ యొక్క ఏవైనా రెండు పద్ధతులను వివరింపుము.

10. A) Draw the R&S isomers of alanine and glyceraldehyde.
ఎలనైన్ మరియు గ్లిసరాల్డిహైడ్ ల యొక్కR&S సాదృశ్యములను గీయుము.

B) What are E, Z configuration?
E, Z విన్యాసము అనగా నేమి?

SECTION – B

Answer any FIVE Questions 5 X 5=25M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

11. Write different confirmations of n-butane. Explain their relative stability.
n-బ్యూటేన్ యొక్క వివిధ రకాల అణురూపకాలను వ్రాయుము. వాటి సాపేక్ష స్థిరత్వమును వివరింపుము.

12. Explain 1,2& 1,4 addition reactions of conjugated dienes.
సంయుగ్మడయీన్ల 1,2 & 1,4 సంకలన చర్యలను వివరింపుము.

13. How will you prepare acetaldehyde and acetone from alkynes.
ఆల్కైన్ల నుండి ఎసిటాల్డిహైడ్ మరియు ఎసిటోన్లను ఎలా తయారు చేస్తారు?

14. Explain the orientation effect of halogens on mono substituted benzene.
ఏకప్రతిక్షేపిత బెంజీన్ మీద హాలోజన్ల స్థానీకృత ప్రభావమును వివరింపుము.

15. Define Hardy-Schulze rule and gold number.
హార్డీ-షూల్జ్ నియమము మరియు గోల్డ్ సంఖ్యను నిర్వచించుము.

16. Write a note on Pearson's concept.
పియర్సన్ భావన పై వ్యాఖ్య వ్రాయుము.

17. What are hard and soft acids and bases? Explain with examples.
కఠిన మరియు మృదు ఆమ్లాలు మరియు క్షారాలు అనగా నేమి? ఉదాహరణలతో వివరించుము.

18. What are enantiomers and diastereomers? Give two examples for each.
ఎనాన్షియోమర్లు మరియు డయాస్టీరియోమర్లు అనగా నేమి? ప్రతీ దానికి రెండు ఉదాహరణలనిమ్ము.

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UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
ORGANIC CHEMISTRY		
ALKANES AND CYCLO ALKANES	2	1
ALKENES AND ALKYNES	1	2
BENZENE AND ITS REACTIVTITY	2	1
GENERAL CHEMISTRY		
SURFACE CHEMISTRY	1	1
CHEMICAL BONDING	2	--
HSAB	--	2
STEREO CHEMISTRY OF CARBON COMPOPUNDS	2	1
	10	8

LABORATORYCOURSE-II 30Hrs (2 H /W)

Practical-II Volumetric Analysis

(At the end of Semester-II)

Course outcomes:

At the end of the course, the student will be able to;

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Understand and explain the volumetric analysis based on fundamental concepts learnt in ionic equilibria
3. Learn and identify the concepts of a standard solutions, primary and secondary standards
4. Facilitate the learner to make solutions of various molar concentrations. This may include: The concept of the mole; Converting moles to grams; Converting grams to moles; Defining concentration; Dilution of Solutions; Making different molar concentrations.

Volumetric analysis 50M

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Determination of Fe (II) using $KMnO_4$ with oxalic acid as primary standard.
3. Determination of Cu (II) using $Na_2S_2O_3$ with $K_2Cr_2O_7$ as primary standard.
4. Estimation of water of crystallization in Mohr's salt by titrating with$KMnO_4$

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM
(Affiliated to Adikavi Nannaya University)

Syllabus and Scheme for I B. Sc. Chemistry Practical – II (At the end of II Semester)
w.e.f. 2020-21

SYLLABUS

50M

Titrimetric analysis

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Determination of Fe (II) using $KMnO_4$ with oxalic acid as primary standard.
3. Determination of Cu (II) using $Na_2S_2O_3$ with $K_2Cr_2O_7$ as primary standard.
4. Estimation of water of crystallization in Mohr's salt by titrating with $KMnO_4$

SCHEME OF VALUATION

Maximum Marks: 50M

Time: 3 Hours
Record — Marks: 5M
Viva-Voce — Marks: 5M

Writing procedure in 15 minutes	10 Marks
For tables and correct calculations	10 Marks
For value with < 0.1% error or less	20 Marks
(For every 0.1% error >0.1% 2 mark should be deducted from 20 marks)	
Minimun	2 Marks

LABORATORYCOURSE -III 30Hrs (2 H /W)

Practical Course-III Organic preparations and IR Spectral Analysis

(At the end of Semester- III)

Course outcomes:

On the completion of the course, the student will be able to do the following:

1. How to use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. How to calculate limiting reagent, theoretical yield, and percent yield
3. How to engage in safe laboratory practices by handling laboratory glassware, equipment, and chemical reagents appropriately
4. How to dispose of chemicals in a safe and responsible manner
5. How to perform common laboratory techniques including reflux distillation, recrystallization, vacuum filtration.
6. How to create and carry out work up and separation procedures
7. How to critically evaluate data collected to determine the identity, purity, and percent yield of products and to summarize findings in writing in a clear and concise manner

40M

Organic preparations:

1. Acetylation of one of the following compounds:
   Amines (aniline, o-, m-, p- toluidine and o-, m-, p-anisidine) and phenols

   (β- naphthol, vanillin, Salicylic acid) by any one method

A) Using conventional method.

B) Using green approach

2. Benzoylation of one of the following amines
   (aniline, o-, m-, p- toluidine and o-, m-, p-anisidine)

3. Nitration of any one of the following:
   Acetanilide/nitrobenzene by conventional method

   Salicylic acid by green approach (using ceric ammonium nitrate)

10M

IR Spectral Analysis

IR Spectral Analysis of the following functional groups with examples

1. Hydroxyl groups
2. Carbonyl groups
3. Amino groups
4. Aromatic groups

LABORATORYCOURSE -III 30Hrs (2 H /W)

Practical Course-III Organic preparations and IR Spectral Analysis

(At the end of Semester- III)

SCHEME OF VALUATION

Record	5M
Viva	5M
Practical	40M

I. Organic preparations -- 30M		
	Equation	5M
	Procedure in 10 min	10M
	M.P/B.P	5M
	Reporting yield	10M
II. IR Spectral analysis -- 10M		
	For each group data	10M

SEMESTER - IV

Course IV (INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY) 60Hrs (4 H / W)

Course outcomes:

At the end of the course, the student will be able to

To learn about the laws of absorption of light energy by molecules and subsequent photo chemical reactions.

To understand the concept of quantum efficiency and mechanisms of photo chemical reactions.

UNIT - I

Organo metallic Compounds 8 H

Definition and classification of organo metallic compounds on the basis of bond type, Concept of hapticity of organic ligands. Metal Carbonyls:18 electron rule, electron count of mononuclear, poly nuclear and substituted metal carbonyls of 3dseries.General methods of preparation of mono and bi nuclear carbonyls of 3dseries.

P-acceptor behavior of carbon monoxide. Synergic effects (VB approach) - (MO diagram of CO can be referred to for synergic effect to IR frequencies).

UNIT – II

Carbohydrates 8 H

Occurrence, classification and their biological importance, Monosaccharides: Constitution and absolute configuration glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth Projection And Conformational Structures;Inter conversions of aldoses and ketoses; Kiliani-Fischer synthesis and Ruff degradation; Disaccharides– Elementary Treatment Of Maltose, lactose and sucrose. Polysaccharides– Elementary Treatment Of starch.

UNIT- III

Amino acids and proteins 6 H

Introduction: Definition of Amino acids, classification of Amino acids into alpha, beta, and gamma amino acids. Natural and essential amino acids-definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples - Glycine, Alanine, valine and leucine) by following methods: a) from halogenated carboxylic acid b) Gabriel Phthalimide synthesis c) strecker's synthesis.Physical properties: Zwitter ion structure - salt like character - solubility, melting points, amphoteric character, definition of isoelectric point. Chemical properties: General reactions due to amino and carboxyl groups - lactams from gamma and delta amino acids by heating- peptide bond (amide linkage). Structure and nomenclature of peptides and proteins.

Heterocyclic Compounds 7 H

Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1, 4, -dicarbonyl compounds, Paul-Knorr synthesis. Properties: Acidic character of pyrrole - electrophilic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation un-dermild conditions- Diels Alder reaction in furan. Pyridine – Structure - Basicity - Aromaticity- Comparison with pyrrole- one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

UNIT- IV

Nitrogen Containing Functional Groups

Preparation, properties and important reactions of nitro compounds, amines and diazonium salts.

Nitro hydrocarbons 3 H

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerismof nitroalkanes leading to aci and ketoform, Preparation of Nitroalkanes, reactivity -halogenation, reaction with HONO (Nitrous acid), Nef reaction and Mannich reaction leading to Micheal addition and reduction.

Amines 11 H

Introduction, classification, chirality in amines (pyramidal inversion), importance and general methods of preparation. Properties : Physical properties, Basicity of amines: Effect of substituent, solvent and steric effects. Distinction between Primary, secondary and tertiary amines using Hinsberg's Method and Nitrous Acid. Discussion of the following reactions with emphasis on the mechanistic pathway: Gabriel Phthalimide synthesis, Hoffmann- Bromamide Reaction,Carbylamine Reaction, Mannich reaction, Hoffmann's exhaustive methylation, Hofmann-elimination reaction and Cope elimination. Diazonium Salts: Preparation and synthetic applications of diazonium salts including preparation of arenes, haloarenes, phenols, amino and nitro compounds. Coupling Reactions of Diazonium Salts (preparation of azo dyes).

UNIT- V

Photochemistry 5 H

Difference between thermal and photochemical processes, Laws of photochemistry- Grothus- Draper's law and Stark-Einstein's law of photo chemical equivalence, Quantum yield- Photochemical reaction mechanism- hydrogen- chlorine and hydrogen- bromine reaction. Qualitative description of fluorescence, phosphorescence, Jablonski diagram, Photosensitized reactions- energy transfer processes (simple example).

Thermodynamics

The first law of thermodynamics-statement, definition of internal energy and enthalpy, Heat capacities and their relationship, Joule-Thomson effect- coefficient, Calculation of work for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes, State function. Temperature dependence of enthalpy of formation-Kirchoffs equation,Second law of thermodynamics Different Statements of the law, Carnot cycle and its efficiency, Carnot theorem, Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes. Third law of thermodynamics, Nernst heat theorem, Spontaneous and non-spontaneous processes, Helmholtz and Gibbs energies-Criteria for spontaneity.

D.N. R. COLLEGE (A), BHIMAVARAM
(Revised Choice Based Credit System – w.e.f. 2020 – 21)
II B.Sc. Degree Examination (At the end of IV semester)
Subject: CHEMISTRY
COURSE IV: INORGANIC, ORGANIC & PHYSICAL CHEMISTRY
Model Question Paper with effect from 2020–2021

Time: 3Hours Max. Marks: 75M

SECTION – A

Answer any **FIVE** questions 5 X 10=50M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

1. What are organometallic compounds? How are they classified and explain with example?
కర్బన లోహ సమ్మేళనాలు అనగా నేమి? వాటిని ఏవిధముగా వర్గీకరిస్తారో ఉదాహరణలతో వివరించుము?

Or

How do you prepare mono and bi nuclear carbonyls of 3d-series?
3d-శ్రేణుల ఏక మరియు ద్వి కేంద్రక కార్బొనైల్ లను ఏ విధముగా తయారు చేస్తారు?

2. How is the straight chain structure of glucose established?
గ్లూకోజ్ యొక్క సరళమాళికా నిర్మాణము ఎట్లు నిర్ధరించబడినది?

Or

Write any two inter-conversions of carbohydrates.
ఏవైనా రెండు అంతరిక మార్పిడులను వ్రాయుము.

3. Write any two preparative methods of amino acids.
ఎమినో ఆమ్లాల యొక్క ఏవైనా రెండు తయారీ విధానములను వ్రాయుము.

Or

Discuss the aromatic character of hetero cyclic compounds.
విజాతీయ చక్రీయ సమ్మేళనాల యొక్క ఏరోమాటిక్ స్వభావమును చర్చించుము.

4. Explain the mechanisms of Nef reaction and Mannich reaction.
నెఫ్ మరియు మానిచ్ చర్యల చర్యావిధానమును వివరింపుము.

Or

How do you separate amines from Hinsberg's method?
హిన్స్ బర్గ్ పద్ధతి నుండి ఎమీన్లను ఏ విధముగా వేరుపరుస్తారు?

5. Explain Jablonski diagram.
జబ్లోన్స్కి చిత్రమును వివరింపుము.

Or

Explain Carnot theorem.
కార్నో సిద్ధాంతమును వివరింపుము.

SECTION – B

5 X 5=25M

Answer any FIVE questions
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

6. Explain 18-electron rule with examples.
   18-ఎలక్ట్రాన్ నియమమును ఉదాహరణలతో వివరింపుము.
7. Write a note on mutarotation.
   క్షీణభ్రామకత పై వ్యాఖ్య వ్రాయుము.
8. What are amino acids? How are they classified?
   ఎమినో ఆమ్లాలు అనగా నేమి? వాటిని ఏ విధముగా వర్గీకరిస్తారు?
9. How do you prepare furan from Paul-Knorr synthesis?
   పాల్-నార్ సంశ్లేషణ ద్వారా ఫ్యూరాన్ ను ఏ విధముగా తయారుచేస్తారు?
10. Explain tautomerism of nitro alkanes.
    నైట్రో ఆల్కేన్ల టాటోమెరిజమ్ ను వివరింపుము
11. Write any two synthetic applications of diazonium salts.
    డయజోనియం లవణాల యొక్క ఏవైనా రెండు సంశ్లేషక అనువర్తనాలను వ్రాయుము.
12. Write the laws of photochemistry.
    కాంతి రసాయనశాస్త్రము యొక్క నియమాలను వ్రాయుము
13. Derive Kirchoff's equation.
    కిర్చాఫ్ సమీకరణమును ఉత్పాదింపుము.

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UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
UNIT-I Organo metallic compounds	1 or 1	1
UNIT-II Carbohydrates	1 or 1	1
UNIT-III Amino acids and proteins, heterocyclic compounds	1 or 1	2
UNIT-IV Nitrogen containing functional groups Nitro hydrocarbons, amines, diazonium salts	1 or 1	2
UNIT-V Photo chemistry, thermodynamics	1 or 1	2
	5 X 2=10	08

LABORATORYCOURSE -IV 30Hrs (2 H /w)

Practical Course-IV Organic Qualitative analysis 50M

(At the end of Semester- IV)

Course outcomes:

At the end of the course, the student will be able to;

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Determine melting and boiling points of organic compounds
3. Understand Application of concepts of different organic reactions studied in theory part of organic chemistry

Organic Qualitative analysis 50M

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point with suitable derivatives.

Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids, Aromatic primary amines, amides and simple sugars

LABORATORY COURSE - IV 30Hrs (2 H /w)

Practical Course-IV Organic Qualitative analysis

(At the end of Semester- IV)

SCHEME OF VALUATION

Time: 3 Hours **Maximum Marks: 50M**

Record	Marks:5M
Viva-Voce	Marks:5M
Practical	Marks:40M

1. Colour	1 Marks
2. Structure	1 Marks
3. Odour	1 Marks
4. M.P/B.P	5 Marks
5. Ignition test	2 Marks
6. Litmus test	1Marks
7. Solubility	2 Marks
8. Dectection of extra element	5 Marks
9. Test for unsaturation	2 Marks
10. Identification of functional group	4 Marks
11. Conformation tests for functional group	6 Marks
12. Systematic recording of observations (Including negative tests)	8 Marks
13. Naming Of Compound	2 Marks

SEMESTER - IV

Course V (INORGANIC & PHYSICAL CHEMISTRY) 60 Hrs (4 H / W)

Course outcomes:

At the end of the course, the student will be able to;

Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation values

Application of Quantization to Spectroscopy.

Various types of spectra and their use in structure determination.

INORGANIC CHEMISTRY

UNIT – I

Coordination Chemistry 12H

IUPAC nomenclature of coordination compounds, structural and stereo isomerism in complexes with coordination numbers 4 and 6. Valence Bond Theory (VBT): Inner and outer orbital complexes. Limitations of VBT, Crystalfield effect, octahedral symmetry. Crystal field stabilization energy (CFSE), Crystal field effects for weak and strong fields. Tetrahedral symmetry, Factors affecting the magnitude of crystal field splitting energy, Spectro chemical series, Comparison of CFSE for Octahedral and Tetrahedral complexes, Tetragonal distortion of octahedral geometry, Jahn-Teller distortion, square planar coordination.

UNIT –II

Inorganic Reaction Mechanism: 4 H

Introduction to inorganic reaction mechanisms. Concept of reaction pathways, transition state, intermediate and activated complex. Labile and inert complexes, ligand substitution reactions-SN^1 and SN^2, Substitution reactions in square planar complexes, Trans-effect, theories of trans effect and its applications Stability of metal complexes: 2 H

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

Bio inorganic Chemistry: 8 H

Metal ions present in biological systems, classification of elements according to their action in biological system.Geochemical effect on the distribution of metals, Sodium / K - pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals. Toxicity of metal ions (Hg, Pb, Cd andAs), reasons for toxicity, Use of chelating agents in medicine, Cis-platin as an anti-cancer drug. Iron and its application in bio-systems, Haemoglobin, Myoglobin.Storage and transfer of iron.

PHYSICALCHEMISTRY 34H

UNIT-III

Phase rule 6 H

Concept of phase, components, degrees of freedom.Thermodynamic derivation of Gibbs phase rule. Phase diagram of one component system - water system, Study of Phase diagrams of Simple eutectic systems i) Pb-Ag system, desilverisation of lead ii) NaCl-Water system, Congruent and incongruent melting point- Definition and examples for systems having congruent and incongruent melting point , freezing mixtures.

UNIT-IV

Electrochemistry 14 H

Specific conductance, equivalent conductance and molar conductance-Definition and effect of dilution. Cell constant. Strong and weak electrolytes, Kohlrausch'slaw and its applications, Definition of transport number, determination of transport number by Hittorf's method.Debye- Huckel-Onsagar's equation for strong electrolytes (elementary treatment only), Application of conductivity measurements- conductometric titrations. Electrochemical Cells- Single electrode potential, Types of electrodes with examples: Metal- metal ion, Gas electrode, Inert electrode, Redox electrode, Metal-metal insoluble salt- salt anion. Determination of EMF of a cell, Nernst equation, Applications of EMF measurements- Potentiometric titrations.Fuel cells- Basic concepts, examples and applications.

UNIT-V

Chemical Kinetics: 14H

The concept of reaction rates.Effect of temperature, pressure, catalyst and other factors on reaction rates.Order and molecularity of a reaction, Derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal concentrations of reactants). Half–life of a reaction.General methods for determination of order of a reaction. Concept of activation energy and its calculation from Arrhenius equation. Theories of Reaction Rates: Collision theory and Activated Complex theory of bimolecular reactions. Comparison of the two theories (qualitative treatment only).Enzyme catalysis-Specificity, factors affecting enzyme catalysis, Inhibitors and Lock & key model. Michaels- Menten equation- derivation, significance of Michaelis-Menten constant.

D.N. R. COLLEGE (A), BHIMAVARAM
(Revised Choice Based Credit System – w.e.f. 2020 – 21)
II B.Sc. Degree Examination (At the end of Fourth semester)
Subject: CHEMISTRY
COURSE V: INORGANIC & PHYSICAL CHEMISRY

Model Question Paper with effect from 2020-2021

Time: 3Hours Max. Marks: 75M

SECTION – A

Answer any FIVE questions 5 X 10=50M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

1. A) Give the important postulates of crystal field theory. Explain the splitting of d-orbitals in octahedral and square planar complexes.
స్ఫటికక్షేత్ర సిద్ధాంత ముఖ్యాంశాలను పేర్కొని ఆక్టాహెడ్రల్ (అష్టముఖి) మరియు సమతల చతరస్ర సంశ్లిష్టాలలో విభజనను వివరించండి.

Or

B) Explain the formation, magnetic properties of the following complexes by valence bond theory.
సంయోజకతా బంధ సిద్ధాంతము ఆధారముగా క్రింది సంశ్లిష్టాల ఏర్పాటు, అయస్కాంత ధర్మాలను వివరించండి.

a) $[Co(NH_3)_6]^{3+}$
b) $[Ni(CO)_4]$

2. A) Explain Job's method and mole ratio method.
జాబ్ పద్ధతి మరియు మోల్ నిష్పత్తి పద్ధతులను వివరించుము.

Or

B) Write the biological functions of Haemoglobin and myoglobin.
హిమోగ్లోబిన్ మరియు మయోగ్లోబిన్ ల జీవరసాయన విధులను వ్రాయుము.

3. A) What is Gibb's phase rule? Explain the terms in phase rule with examples.
గిబ్స్ ప్రావస్థా నియమము అనగా నేమి? ప్రావస్థా నియమము నందలి పదాలను ఉదాహరణలతో వివరింపుము.

Or

B) Explain the phase diagram of lead-silver system.
లెడ్-సిల్వర్ వ్యవస్థ యొక్క ప్రావస్థా చిత్రమును వివరింపుము.

4. A) Write the experimental determination of transport number by Hitorff method.
ప్రయోగాత్మకముగా హిటార్ఫ్ పద్ధతి నుండి అభిగమన సంఖ్యను నిర్ణయించుటను వ్రాయుము.

Or

B) What are conductometric titrations? Write any two conductometric titrations with suitable examples.

వాహక అంశమాపనాలు అనగా నేమి? ఏవైనా రెండు అంశమాపనములను సరియైన ఉదాహరణలతో వ్రాయుము.

5. A) Derive the rate equation for first order reaction.
ప్రథమ క్రమాంక చర్యయొక్క రేటు సమీకరణంను ఉత్పాదించుము.

Or

B) Explain collision theory and activated complex theory
అభిఘాత సిద్ధాంతము మరియు సంశ్లిష్ట సిద్ధాంతములను వివరించుము.

SECTION – B

5 X 5=25M

Answer any FIVE questions
ఏవైనా ఐదు ప్రశ్నలకు సమాధానముల నిమ్ము

6. Write a note on John-Teller distortion.
జాన్-టెల్లర్ వక్రీకరణ పై వ్యాఖ్య వ్రాయుము.
7. What is trans effect? Write any two applications of trans effect.
ట్రాన్స్ ప్రభావము అనగా నేమి? ఏవైనా రెండు ట్రాన్స్ ప్రభావపు అనువర్తనాలను వ్రాయుము.
8. What are the factors affecting the stability of metal complexes?
లోహ సంశ్లిష్టల స్థిరత్వమును ప్రభావితము చేయు అంశాలు ఏమిటి?
9. Explain the phase diagram of single component system.
ఏక ఘటక వ్యవస్థ యొక్క ప్రావస్థా చిత్రమును వివరించుము.
10. Write a note on Debye-Huckel-Onsagar equation for strong electrolytes.
బలమైన విద్యుత్ విశ్లేష్యాల డిబై-హుకెల్-ఆన్ సాగర్ సమీకరణమును వ్రాయుము.
11. Write a note on single electrode potential.
ఏక ఎలక్ట్రోడ్ పొటన్షియల్ పై వ్యాఖ్య వ్రాయుము.
12. Explain any one method for determination of order of a reaction.
చర్య క్రమాంకమును నిర్ణయించు ఏదైనా ఒక పద్ధతిని వివరించుము.
13. Derive Michaels-Menten equation.
మైఖేల్-మెంటాన్ సమీకరణమును ఉత్పాదించుము.

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UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
UNIT-I Coordinate chemistry	1 or 1	1
UNI-II Inorganic reaction mechanism, stability of metal complexes and Bio inorganic chemistry.	1 or 1	2
UNIT-III Phase rule	1 or 1	1
UNIT-IV Electro chemistry	1 or 1	2
UNIT-V Chemical kinetics	1 or 1	2
	5 X 2=10	**08**

LABORATORY COURSE - V 30Hrs (2 H /w)

Practical Course-V Organic Qualitative analysis

(At the end of Semester- IV)

Course outcomes:

At the end of the course, the student will be able to:

1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory
2. Apply concepts of electrochemistry in experiments
3. Be familiar with electro analytical methods and techniques in analytical chemistry which study an analyte by measuring the potential (volts) and/or current (amperes) in an electrochemical cell containing the analyte.

Conductometric and Potentiometric Titrimetry 50M

1. Conductometric titration- Determination of concentration of HCl solution using standard NaOH solution.
2. Conductometric titration- Determination of concentration of CH_3COOH Solution using standard NaOH solution.
3. Conductometric titration- Determination of concentration of CH_3COOH and HCl in a mixture using standard NaOH solution.
4. Potentiometric titration- Determination of Fe (II) using standard $K_2Cr_2O_7$solution.
5. Determination of rate constant for acid catalyzed ester hydrolysis

LABORATORY COURSE - V 30 Hrs (2 H /w)
Practical Course-V Organic Qualitative analysis
(At the end of Semester- IV)

Scheme of Valuation

Time: 3 Hours Maximum Marks: 50M

Record Marks:5M

Viva-Voce Marks:5M

Practical Marks: 40M

Writing procedure in 15 minutes	10M
For graph with scale	5M
For tabular form and correct calculations	5M
For correct value	20M

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc., CHEMISTRY SYLLABUS – IIIA (At the end of V semester)

w.e.f. 2017-18

INORGANIC & PHYSICAL CHEMISTRY **45 Hrs (3 H/ W)**

INORGANIC CHEMISTRY

UNIT – I

1. Coordination Chemistry: 8H

IUPAC nomenclature - bonding theories - Review of Werner's theory and Sidgwick's concept of coordination - Valence bond theory - geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal filed theory - splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes - low spin and high spin complexes - factors affecting crystal-field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds - structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

2. Spectral and magnetic properties of metal complexes: 4H

Types of magnetic behavior, spin-only formula, calculation of magnetic moments, experimental determination of magnetic susceptibility-Gouymethod.

UNIT-II

1. Stability of metal complexes: 4H

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes, chelate effect, determination of composition of complex by Job's method and mole ratio method.

2. Reactivity of metal complexes: 4H

Labile and inert complexes, ligand substitution reactions - SN^1 and SN^2,substitution reactions of square planar complexes - Trans effect and applications of trans effect.

UNIT- III

1.Bioinorganic chemistry: 5H

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and Cl. Metalloporphyrins – Structure and functions of hemoglobin, Myoglobin and Chlorophyll.

PHYSICAL CHEMISTRY

UNIT- I

Thermodynamics 10H

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Calculation of w, for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes. State function. Temperature dependence of enthalpy of formation-Kirchoff's equation. Second law of thermodynamics. Different Statements of the law. Carnot cycle and its efficiency. Carnot theorem. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

UNIT-II

1. Chemical kinetics 5H

Rate of reaction - Definition of order and molecularity. Derivation of rate constants for first, second, third and zero order reactions and examples. Derivation for time half change. Methods to determine the order of reactions. Effect of temperature on rate of reaction, Arrhenius equation, concept of activation energy.

UNIT-III

2. Photochemistry 5H

Difference between thermal and photochemical processes. Laws of photochemistry- Grothus-Draper's law and Stark-Einstein's law of photochemical equivalence. Quantum yield- Photochemical reaction mechanism- hydrogen- chlorine, hydrogen- bromine reaction. Qualitative description of fluorescence, phosphorescence, Photosensitized reactions- energy transfer processes (simple example)

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc. Degree Examination at the end of V semester

Paper – III(A) Inorganic and Physical chemistry

(For the 2016-2017 admitted batch under CBCS only)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any FIVE questions choosing atleast TWO from each unit – I and unit –II 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము. ప్రతీ యూనిట్ I మరియు II నుండి కనీసము రెండు ప్రశ్నలకు సమాధానములు వ్రాయుము.

UNIT – I (INORGANIC CHEMISTRY)

1. Explain geometrical and optical isomerism in octahedral complexes.
ఆక్టాహెడ్రల్ సంశ్లిష్టాలలో జ్యామితీయ, దృక్ సాదృశ్యాలను వివరించుము.

2. A) Explain the electronic absorption spectrum of $[Ti(H_2O)_6]^{3+}$ ion.
$[Ti(H_2O)_6]^{3+}$ అయాన్ ఎలక్ట్రానిక్ శోషణ వర్ణపటమును వివరింపుము.

   B) Describe experimental determination of magnetic susceptibility by Gouy method.
గోయ్ పద్ధతి ద్వారా అయస్కాంతత్వ ఆవశ్యతను నిర్ణయించుటను వర్ణించుము.

3. Explain the ligand substitution in square planar complexes with examples.
సమతల చదర సంశ్లిష్టాలలో లైగాండ్ ప్రతిక్షేపణ చర్యలను ఉదాహరణలతో వివరించండి.

4. A) Discuss the effects of various factors on the stability constant of a metal complex with examples.
లోహ సంశ్లిష్టము స్థిరాంకముపై ప్రభావము చూపే అంశాలను ఉదాహరణతో వివరింపుము.

   B) Explain the determination of composition of complex by Job's method.
జాబ్ పద్ధతిని అనుసరించి సంశ్లిష్ట సంఘటనాన్ని నిర్ణయించుటను వివరించుము

5. Give the structure and function of heamoglobin and chlorophyll.
హిమోగ్లోబిన్ మరియు క్లోరోఫిల్ నిర్మాణము మరియు విధులను తెలపండి.

UNIT – II (PHYSICAL CHEMISTRY)

6. Explain Carnot cycle and its efficiency.
కార్నోచక్రమును, దాని దక్షతను వివరించుము.

7. Derive the rate constant equation for a second order reaction with same concentrations of reactants .
సమాన గాఢత కలిగిన క్రియాజనకాల ద్వితీయ క్రమాంక చర్య రేటు స్థిరాంకమునకు సమీకరణమును ఉత్పాదించుము.

8. Derive the equation of isothermal reversible expansion work of an ideal gas.
సమోష్ణోగ్రత వద్ద ఆదర్శవాయువుల వ్యాకోచములో గరిష్టమైన పనికి సంబంధించిన సమీకరణమును ఉత్పాదించుము.

9. A) State and explain first and second laws of photochemistry.
కాంతి రసాయన శాస్త్రము యొక్క ప్రథమ మరియు ద్వితీయ నియమాలను వ్రాసి వివరించండి.

B) Discuss the Jablonski diagram
జబ్లోన్స్కి పటమును చర్చించుము.

10. Derive PV^{γ} = constant in adiabatic process.
స్థిరోష్ణక ప్రక్రియలో PV^{γ} = స్థిరాంకము అని ఉత్పాదించుము.

SECTION – B

Answer any FIVE of the following questions 5X5=25M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానములను వ్రాయుము.

11. Explain structural isomerism of complex compounds.
సంశ్లిష్ట సమ్మేళనాలలో నిర్మాణాత్మక సాదృశ్యమును వివరించుము.

12. Write the biological significance of Na, K and Mg.
Na, K మరియు Mg ల జీవ ప్రాముఖ్యతను వ్రాయండి.

13. Explain Joule -Thomson effect.
జౌల్-థామ్సన్ ప్రభావమును వివరించుము.

14. Explain any one method to determine the order of reaction.
చర్యా క్రమాంకమును నిర్ధారించుటకు ఏదైనా ఒక పద్ధతిని వివరింపుము.

15. Time for 50% of a first order is 60 minutes. What is the time for completion 90% of a reaction?
ప్రథమ క్రమాంక చర్య 50% పూర్తి అగుటకు పట్టు కాలము 60 నిమిషాలు. 90% చర్య జరుగుటకు పట్టు కాలము ఎంత?

16. What is chelating effect? Give example and explanation.
కీలేటింగ్ ప్రభావము అనగా నేమి? ఉదాహరణతో వివరింపుము.

17. Define the following క్రింది వాటిని నిర్వచించుము

a) Quantum yield క్వాంటమ్ ప్రాప్తి

b) Fluorescence ఫ్లోరోసెన్స్

c) Phosphorescence ఫాస్ఫొరెసెన్స్

18. What is trans effect? Write two applications.
ట్రాన్స్ ఫలితము అనగా నేమి? రెండు అనువర్తనములు వ్రాయుము.

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TOPIC	ESSAY QUESTIONS	SHORT QUESTIONS
INORGANIC		
Coordination chemistry, Spectral and magnetic properties	2	1
Stability of metal complexes	1	1
Reactivity of metal complexes	1	1
Bio inorganic chemistry	1	1
PHYSICAL		
Thermodynamics	3	1
Chemical kinetics	1	2
Photo chemistry	1	1
TOTAL	10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM
(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc. Chemistry Practical – IIIA (Organic)
(At the end of V semester)
w.e.f. 2017-18

Syllabus
Organic Chemistry

30 hrs (2 H / W)

Organic Qualitative Analysis:

50M

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point.
Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids, Simple sugars, Aromatic Primary Amines, and Amides.

Scheme of Valuation

Time: 3 Hours **Maximum Marks:50**

Record	Marks:5
Viva-Voce	Marks:5
Practical	Marks:40

1. Colour	1 Marks
2. Structure	1 Marks
3. Odour	1 Marks
4. M.P/B.P	5 Marks
5. Ignition test	2 Marks
6. Litmus test	1Marks
7. Solubility	2 Marks
8. Dectection of extra element	5 Marks
9. Test for unsaturation	2 Marks
10. Identification of functional group	4 Marks
11. Conformation tests for functional group	6 Marks
12. Systematic recording of observations (Including negative tests)	8 Marks
13. Naming Of Compound	2 Marks

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III B.Sc., CHEMISTRY SYLLABUS –IVA (At the end of V semester)
w.e.f. 2017-18

ORGANIC CHEMISTRY 45 hrs (3 H / W)

UNIT- I

Nitro hydrocarbons: 5H

Nomenclature and classification-nitro hydrocarbons, structure -Tautomerism of nitroalkanes leading to aci and keto form, Preparation of Nitroalkanes, reactivity -halogenation, reaction with HONO (Nitrous acid),Nef reaction and Mannich reaction leading to Micheal addition and reduction.

UNIT – II

Nitrogen compounds 12H

Amines (Aliphatic and Aromatic): Nomenclature, Classification into 1°, 2°, 3° Amines and Quarternary ammonium compounds. Preparative methods – 1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromamide reaction (mechanism). Reduction of Amides and Schmidt reaction. Physical properties and basic character - Comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline - comparative basic strength of aniline, N-methylaniline and N,N-dimethyl aniline (in aqueous and non-aqueous medium), steric effects and substituent effects. Chemical properties: a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation e) Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophillic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines, Diazotization.

UNIT- III

Heterocyclic Compounds 8H

Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1,4,- dicarbonyl compounds, Paul-Knorr synthesis. Properties : Acidic character of pyrrole - electrophillic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan. Pyridine – Structure - Basicity - Aromaticity - Comparison with pyrrole - one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

UNIT-IV

Carbohydrates 12H

Monosaccharides: (+) Glucose (aldo hexose) - Evidence for cyclic structure of glucose (some negative aldehydes tests and mutarotation) - Proof for the ring size (methylation, hydrolysis and oxidation reactions) - Pyranose structure (Haworth formula and chair conformational formula). (-) Fructose (ketohexose) - Evidence of 2 - ketohexose structure (formation of pentaacetate, formation of cyanohydrin its hydrolysis and reduction by HI). Cyclic structure for fructose (Furanose structure and Haworth formula) - osazone formation from glucose and fructose – Definition of anomers with examples. Interconversion of Monosaccharides: Aldopentose to Aldohexose (Arabinose to D- Glucose, D-Mannose) (Kiliani - Fischer method). Epimers, Epimerisation - Lobry de bruyn van Ekenstein rearrangement. Aldohexose to Aldopentose

(D-Glucose to D- Arabinose) by Ruff degradation. Aldohexose to Ketohexose [(+) Glucose to (-) Fructose] and Ketohexose to Aldohexose (Fructose to Glucose)

UNIT- V

Amino acids and proteins 8H

Introduction: Definition of Amino acids, classification of Amino acids into alpha, beta, and gamma amino acids. Natural and essential amino acids - definition and examples, classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples - Glycine, Alanine, valine and leucine) by following methods: a) from halogenated carboxylic acid b) Malonic ester synthesis c) strecker's synthesis.

Physical properties: Zwitter ion structure - salt like character - solubility, melting points, amphoteric character, definition of isoelectric point.

Chemical properties: General reactions due to amino and carboxyl groups - lactams from gamma and delta amino acids by heating peptide bond (amide linkage). Structure and nomenclature of peptides and proteins.

D.N.R.COLLEGE (AUTONOMOUS) ::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc. Degree Examination at the end of V semester

Paper – IV(A) Organic chemistry

(For the 2016-2017 admitted batch under CBCS only)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any **FIVE** questions. Each question carries 10 Marks 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము. ప్రతీ ప్రశ్నకు 10 మార్కులు

1. A) Write any two methods for preparing nitro alkanes with equations.
   నైట్రో ఆల్కేన్లను తయారు చేసే ఏవైనా రెండు పద్ధతులను సమీకరణాలతో వ్రాయండి.

   B) Explain the reaction of nitro alkanes with nitrous acid and chlorine.
   నైట్రో ఆల్కేన్లు నైట్రస్ ఆమ్లము మరియు క్లోరిన్ లతో జరిపే చర్యలను వివరించండి.

2. Explain the following reactions ఈ క్రింది చర్యలను వివరించండి

   a) Gabriel synthesis గాబ్రియల్ సంశ్లేషణ

   b) Hofmann bromamide reaction హాఫ్ మన్ బ్రోమమైడ్ చర్య

3. How do you separate primary, secondary and tertiary amines from a mixture by Hinsberg's method?
   ప్రైమరీ, సెకండరీ మరియు టెర్షరీ ఎమీన్లను వాటి మిశ్రమము నుండి హిన్స్ బర్గ్ విధానము ద్వారా ఎలా వేరుచేస్తావు?

4. A) How do you prepare pyrrole and furan by Paul-knorr synthesis?
   పిర్రోల్ మరియు ఫ్యూరాన్ లను పాల్ నార్ సంశ్లేషణ ద్వారా ఎలా తయారు చేస్తావు?

   B) Discuss the aromatic character of pyrrole, furan and thiophene.
   పిర్రోల్, ఫ్యూరాన్ మరియు థయోఫిన్ ల ఏరోమాటిక్ స్వభావమును చర్చించుము.

5. Write one method of preparation of pyridine with equation, and compare the basic nature of pyridine with pyrrole.
   పిరిడిన్ ను తయారు చేసే ఒక పద్ధతిని సమీకరణముతో వ్రాసి మరియు పిరిడిన్ యొక్క క్షారస్వభావమును పిర్రోల్ తో పోల్చుము.

6. What are carbohydrates? Explain the open chain structure of glucose.
   కార్బోహైడ్రేట్ లు అనగా నేమి? గ్లూకోజ్ సరళమాళికా నిర్మాణమును వివరించుము.

7. A) Write the Howarth and chair confirmation structures of glucose.
   గ్లూకోజ్ యొక్క హావర్త్ మరియు కుర్చీ అనురూపక నిర్మాణాలను వ్రాయండి.

   B) How osazone is formed from fructose?
   ఫ్రక్టోజ్ నుండి ఒసజోన్ ఎలా ఏర్పడుతుంది?

8. How do you convert D-arabinose into D-glucose?
   D-అరబినోజ్ నుండి D-గ్లూకోజ్ గా ఎలా మారుస్తావు?

9. What are amino acids? Discuss their classification, write any three chemical reactions of amino acids.
ఎమినో ఆమ్లాలు అనగా నేమి? వీటి వర్గీకరణను చర్చించుము, ఎమినో ఆమ్లాల యొక్క ఏవైనా మూడు రసాయన చర్యలను వ్రాయండి.

10. Explain the following reactions క్రింది చర్యలను వివరించండి
   a) Strecker synthesis స్ట్రెకర్ సంశ్లేషణ
   b) Malonic ester synthesis for preparation of amino acids
   ఎమినో ఆమ్లాల తయారీకి గల మెలానిక్ ఎస్టర్ సంశ్లేషణ పద్ధతి.

SECTION – B

Answer any **FIVE** questions. Each question carries **5** marks 5 X 5=25M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము. ప్రతీ ప్రశ్నకు **5** మార్కులు

11. Explain Mannich reaction.
మానిచ్ చర్యను వివరించుము.

12. Compare the basic nature of aniline with N-methyl and N,N-dimethyl anilines.
N-మిథైల్ మరియు N,N-డైమిథైల్ ఎనిలీన్లతో ఎనిలీన్ యొక్క క్షార స్వభావమును పోల్చుము.

13. Discuss the following reactions
ఈ క్రింది చర్యలను చర్చించుము
   a) Acylation of aliphatic amines ఏలిఫాటిక్ ఎమీన్ల ఎసైలేషన్
   b) Carbyl amine reaction కార్బైల్ ఎమీన్ చర్య

14. Write Diels-Alder reaction of furan with equation.
డీల్స్-ఆల్డర్ చర్యను సమీకరణములతో వ్రాయండి.

15. Write a short note on acetic nature of pyrrole.
పిర్రోల్ ఆమ్ల స్వభావముపై లఘు వ్యాఖ్యను వ్రాయండి.

16. Explain muta rotation of glucose.
గ్లూకోజ్ యొక్క మ్యూటా భ్రమణము ను వివరించుము.

17. Explain the classification of carbohydrates according to their reducing nature, give examples.
క్షయకరణ సామర్థ్యము అనుసరించి కార్బోహైడ్రేట్ ల వర్గీకరణను ఉదాహరణలతో వివరించుము.

18. Define the following క్రింది వానిని నిర్వచించుము
   a) Zwitter ion జ్విట్టర్ అయాన్
   b) Isoelectric point సమ విద్యుత్ స్థానము
   c) Peptide bond పెప్టైడ్ బంధము

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UNIT	NAME	ESSAY QUESTIONS	SHORT QUESTIONS
I	Nitro hydro carbons	1	1
II	Nitrogen compounds	2	2
III	Hetero cyclic compounds	2	2
IV	Carbohydrates	3	2
V	Amino acids and proteins	2	1
Total		10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc., Chemistry Practical – IVA(Physical)

(At the end of V semester)

w.e.f. 2017-18

Syllabus

Physical Chemistry

30 hrs (2 H / W)

1. Determination of density of a liquid.
2. Determination of Viscosity of a liquid.
3. Determination of Surface tension of a liquid.
4. Partition coefficient of benzoic acid in Benzene and water and thereby determination of molecular status.
5. Adsorption of acetic acid on animal charcoal, verification of Freundlisch isotherm.
6. Determination of rate constant for acid catalyzed ester hydrolysis.

Scheme of Valuation

Time: 3 Hours		**Maximum Marks:50**
Record		Marks:5
Viva-Voce		Marks:5
Practical		Marks:40
Writing procedure in 10 minutes	5 Marks	
For tabular form and correct calculations	5 Marks	
Experiment up to 10% error	30 Marks	
From 10% to 15% error	30 – 25 Marks	
From 15% to 25% error	25 – 15 Marks	
More than 25% error	5 Marks	

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ELECTIVE VII-(B): (At the end of VI semester)

w.e.f. 2017-18

ENVIRONMENTAL CHEMISTRY 45 hrs (3 h / w)

UNIT-I

Introduction

9h

Concept of Environmental chemistry-Scope and importance of environment in now adays – Nomenclature of environmental chemistry – Segments of environment - Natural resources – Renewable Resources – Solar and biomass energy and Nonrenewable resources – Thermal power and atomic energy – Reactions of atmospheric oxygen and Hydological cycle.

UNIT-II

Air Pollution

9h

Definition – Sources of air pollution – Classification of air pollution – Acid rain – Photochemical smog – Green house effect – Formation and depletion of ozone – Bhopal gas disaster – Controlling methods of air pollution.

UNIT-III

Water pollution

9h

Unique physical and chemical properties of water – water quality and criteria for finding of water quality – Dissolved oxygen – BOD, COD, Suspended solids, total dissolved solids, alkalinity – Hardness of water – Methods to convert temporary hard water into soft water – Methods to convert permanent hard water into soft water – eutrophication and its effects – principal wastage treatment – Industrial waste water treatment.

UNIT-IV

Chemical Toxicology

9h

Toxic chemicals in the environment – effects of toxic chemicals – cyanide and its toxic effects – pesticides and its biochemical effects – toxicity of lead, mercury, arsenic and cadmium.

UNIT-V

Ecosystem and biodiversity

Ecosystem

9h

Concepts – structure – Functions and types of ecosystem – Abiotic and biotic components – Energy flow and Energy dynamics of ecosystem – Food chains – Food web – Tropic levels – Biogeochemical cycles (carbon, nitrogen and phosporus)

Biodiversity

Definition – level and types of biodiversity – concept - significance – magnitude and distribution of biodiversity – trends - biogeographical classification of india – biodiversity at national, global and regional level.

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III B.Sc Degree Examination at the end of VI semester

Paper – VII (E-B) ENVIRONMENTAL CHEMISTRY

(w.e.f. 2017-18 under CBCS)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any **FIVE** questions 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము .

1. What are renewable and non renewable resources? Explain them with one example.
   పునరుత్పాదకత మరియు పునరుత్పాదకత కాని శక్తి జనకాలు అనగా నేమి? వీటిని ఒక్కో ఉదాహరణతో వివరింపుము.
2. Explain the segments of environment.
   పర్యావరణ ఖండికలు గూర్చి వివరించండి.
3. What is air pollution? Give different types of primary air pollutants. Explain any two methods for controlling air polfution.
   వాయు కాలుష్యము అనగా నేమి? వివిధ రకాల ప్రాథమిక వాయు కాలుష్యకాలను తెలుపుము .వాయు కాలుష్యమును నివారించు ఏవైనా రెండు పద్ధతులను వివరింపుము.
4. Explain about క్రింది వానిని వివరించుము.

   I) Photo chemical smog కాంతి రసాయన స్మోగ్ II) Green house effect హరిత గృహ ప్రభావము
5. What is hardness of water? Explain any two methods to convert temporary and permanent hard water into soft water.
   నీటి కాఠిన్యత అనగా నేమి? తాత్కాలిక మరియు శాశ్వత కాఠిన జలమును మృదు జలముగా ఎలా మారుస్తారో వివరింపుము.
6. What is eutrophication? How industrial waste water is purified?
   యుట్రోఫికేషన్ అనగా నేమి? పరిశ్రమలలో వ్యర్థ జలమును ఎలా శుద్ధి చేస్తారు?
7. Explain the toxicity of lead, mercury and cadmium.
   లెడ్ ,మెర్క్యూరి మరియు కాడ్మియం యొక్క విష స్వభావాలను వివరించుము.
8. Explain the biochemical effects of pesticides.
   క్రిమిసంహారిణుల వల్ల కలుగు జీవ రసాయన ప్రభావమును వివరింపుము.
9. A) What are biotic and abiotic components of an eco system?
   పర్యావరణ వ్యవస్థలో జీవ మరియు నిర్జీవ అంశాలు అనగా నేమి?

   B) Explain bio-geo cycle of carbon and nitrogen.
   కార్బన్ మరియు నైట్రోజన్ యొక్క వలయాలు వివరించండి.
10. A) Explain bio diversity at national level.
    జాతీయ స్థాయిలో జీవ వైవిధ్యమును వివరింపుము.

    B) What is biodiversity insitu conversion?
    పరిస్థితుల లోపల సంరక్షణ అనగా నేమి?

SECTION – B

Answer any FIVE of the following questions 5X5=25M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానము నిమ్ము.

11. Explain hydrological cycle.
    జల వలయము గురించి వివరించండి.
12. Explain the formation of acid rains and give its adverse effects.
    ఆమ్ల వర్షాలు ఎలా ఏర్పడతాయో వివరించుము .మరియు వీటి దుష్పలితాలను తెలుపండి.
13. Explain the importance of environment in now-a-days.
    ప్రస్తుత రోజులలో పర్యావరణము యొక్క ప్రాముఖ్యతను వివరింపుము.
14. Give the water quality parameters according to ISI.
    ISI ప్రకారము నీటి గుణాలకు గల పరామితులు నిమ్ము.
15. Explain the toxic effects of cyanide
    సయనైడ్ యొక్క విష ప్రభావమును వివరింపుము.
16. Explain bio-geochemical cycle of phosphorus.
    ఫాస్ఫరస్ యొక్క జీవ-భూరసాయన వలయమును వివరింపుము.
17. What is TDS? How it is measured?
    మొత్తము విద్రావిత ఘనపదార్థాలు)TDS)అనగా నేమి? దానిని ఎట్లా కొలిచెదరు?
18. Describe the types of eco system.
    ఆవరణ వ్యవస్థ లోని రకాలను వర్ణించుము.

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TOPIC	ESSAY QUESTIONS	SHORT QUESTIONS
Introduction	2	2
Air pollution	2	1
Water pollution	2	2
Chemical toxicology	2	1
Eco system and biodiversity	2	2
TOTAL	10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc., Chemistry Practical – VII, **Elective.**

(At the end of VI semester)

w.e.f. 2017-18

Syllabus

30 hrs (2 h/W)

1. Determination of carbonate and bicarbonate in water samples (acidity and alkalinity)
2. Determination of hardness of water using EDTA
   a) Permanent hardness
   b) Temporary hardness
3. Determination of Acidity
4. Determination of Alkalinity
5. Determination of chlorides in water samples

Scheme of Valuation

Time: 3 Hours **Maximum Marks:50**

Record	Marks:5
Viva-Voce	Marks:5
Practical	Marks:40

Writing procedure in 10 minutes	10 Marks
For tabular form and correct calculations	10 Marks
Experiment up to 10% error	15 Marks
From 10% to 20% error	10 Marks
Above 20%	5 Marks
Report	5 Marks

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

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III B.Sc Degree Examination at the end of VI semester

Paper – VIII (C – 1) ORGANIC SPECTROSCOPIC TECHNIQUES

(w.e.f. 2017-18 under CBCS)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any **FIVE** questions 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము .

1. Explain the following క్రింది వానిని వివరించండి
   a) Chemical shift రసాయన స్థానాంతరణము
   b) Shielding కవచత్వము
   c) De shielding అనుకవచత్వము
2. Write a note on spin decoupling and deuterium exchange.
   భ్రమణ యుగళత్వము మరియు డ్యుటీరియం మార్పు పై వ్యాఖ్య వ్రాయుము.
3. Explain the various transitions occur in UV- Visible spectroscopy.
   అతినీలలోహిత మరియు దృగ్గోచర వర్ణపట శాస్త్రము ప్రకారము వివిధ రకాల పరివర్తనలను వివరించుము.
4. State and explain Beer-Lambert's law.
   బీర్-లాంబర్ట్ నియమమును వ్రాసి వివరించుము.
5. Explain the ESR spectra of methyl radical.
   మిథైల్ ప్రాతిపదిక యొక్క ESR వర్ణపటమును వివరించుము.
6. What are the factors influencing chemical shift?
   రసాయన స్థానాంతరణము ను ప్రభావితము చేయు అంశములు ఏమిటి?
7. Write any five applications of NMR spectroscopy in medical diagnostics.
   రోగ నిర్ధారణ పరీక్షలో ఏవైనా ఐదు NMR వర్ణపటశాస్త్ర అనువర్తనాలను వ్రాయుము.
8. State Woodward –Fieser rules for calculating λ_{max} values of conjugated dienes.
   సంయుగ్మ డయీన్లకు λ_{max} విలువలు కనుగొనుటకు ఉడ్వర్డ్-ఫీజర్ నియమాలను ప్రవచించండి.
9. How do you determine chromium in $K_2Cr_2O_7$?
   $K_2Cr_2O_7$ లోని క్రోమియం ను ఏ విధముగా నిర్ణయిస్తారు?
10. Write the basic principle of electron spin resonance spectroscopy and compare it to NMR.
    ESR వర్ణపటము యొక్క ప్రాథమిక సూత్రము వ్రాసి మరియు ఈ వర్ణపటమును NMR వర్ణపటము తో పోల్చుము.

SECTION – B

Answer any **FIVE** of the following questions 5X5=25M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానము నిమ్ము.

11. Explain Vicinal and Geminal coupling.
    విసినల్ మరియు జెమినల్ యుగళత్వమును వివరించుము.
12. Write a short note on spin-spin coupling.
    స్పిన్-స్పిన్ యుగళత్వము పై లఘు వ్యాఖ్య వ్రాయుము.
13. What is nuclear overhauser effect explain?
    న్యూక్లియర్ ఓవర్ హాజర్ ఫలితము అనగా నేమి? వివరించుము.
14. Write any five advantages of FT NMR.
    FT NMR యొక్క ఏవైనా ఐదు ప్రయోజనాలు వ్రాయుము.
15. What is Franck-Condon principle?
    ఫ్రాంక్-కాండన్ సూత్రము అనగా నేమి?
16. Explain isotropic and anisotropic constants.
    ఐసోట్రోపిక్ మరియు ఎనిసోట్రోపిక్ స్థిరాంకాలను వివరించుము.
17. Write a note on Born-Oppenheimer approximation.
    బార్న్-ఓపెన్ హీమర్ అంచనా పై వ్యాఖ్య వ్రాయుము-
18. What are the factors affecting the 'g' value?
    'g' విలువ ను ప్రభావితము చేయు అంశములు ఏమిటి?

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UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
I	2	2
II	2	2
III	2	1
IV	2	1
V	2	2
TOTAL	10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc., Chemistry Practical – VIII, **Cluster –I.**

(At the end of VI semester)

w.e.f. 2017-18

Syllabus

30 hrs (2 h/W)

1. Identification of amino acids by paper chromatography.
2. Determination of Zn using EDTA
3. Determination of Mg using EDTA
4. Electrophilic aromatic substitution reaction: Nitration of phenol
5. Verification of Beer's law with colorimeter.

Scheme of Valuation

Time: 3 Hours **Maximum Marks:50**

Record	Marks:5
Viva-Voce	Marks:5
Practical	Marks:40

Writing procedure in 10 minutes	10 Marks
For tabular form and correct calculations	10 Marks
(If graph is necessary)	
Experiment up to 10% error	15 Marks
From 10% to 20% error	10 Marks
Above 20%	5 Marks
Report	5 Marks

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc Degree Examination at the end of VI semester

Paper – VIII (C - 2) ADVANCED ORGANIC REACTIONS

(w.e.f. 2017-18 under CBCS)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any **FIVE** questions 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము .

1. Explain photo reduction with mechanism.
   కాంతి క్షయకరణ చర్యను చర్యావిధానముతో వివరించండి.
2. Explain Norrisch – I reaction with mechanism.
   నారిష్- I చర్యను చర్యావిధానముతో వివరించండి.
3. Explain Norrisch – II reaction with mechanism.
   నారిష్- II చర్యను చర్యావిధానముతో వివరించండి.
4. Explain the protection of carboxylic acids.
   కార్బాక్సిలిక్ ఆమ్ల ప్రమేయ సమూహ పరిరక్షణను వివరించండి.
5. Explain the following reactions క్రింది చర్యలను వివరించండి
   a) Mannich reaction మానిక్ చర్య
   b) Stork-enamine reaction స్టార్క్-ఇనమైన్ చర్య
6. Explain the following reactions క్రింది చర్యలను వివరించండి
   a) Suziki coupling సుజుకి కప్లింగ్
   b) Heck reaction హెక్ చర్య
7. What is carbonyl chromophore? Explain Jablonski diagram.
   కార్బోనైల్ క్రోమోఫోర్ అనగా నేమి? జబలోన్స్కి పటమును వివరింపుము.
8. Explain the protection of alcohols by ether and ester formation.
   ఆల్కహాల్ ప్రమేయ సమూహ పరిరక్షణను ఈథర్ మరియు ఎస్టర్ ఏర్పాటు ద్వారా వివరించుము.
9. Explain Robinson annulations, with mechanism.
   రాబిన్ సన్ ఎన్యులేషన్ చర్యను చర్యా విధానముతో వివరించండి.
10. What is olefin methathesis? Explain.
    ఓలిఫిన్ మెటాథీసిస చర్య అనగా నేమి? వివరించుము.

SECTION – B

Answer any **FIVE** of the following questions 5X5=25M
ఏవైనా ఐదు ప్రశ్నలకు సమాధానము నిమ్ము.

11. What is photo Fries rearrangement? Explain.
కాంతి ఫ్రైస్ పునరమరిక అనగా నేమి? వివరించండి.

12. How to protect amines by acetylation?
ఎసిటైలేషన్ ద్వారా ఎమైన్లను ఎలా పరిరక్షిస్తారు?

13. Explain Wittig reaction.
విట్టిగ్ చర్యను వివరించండి.

14. Explain energy transfer in photo chemistry.
కాంతి రసాయన శాస్త్రము లో శక్తి మార్పిడిని వివరించుము.

15. Explain the effect of solvent on photo reduction.
కాంతి క్షయకరణ చర్య పై ద్రావణి ప్రభావమును వివరించుము.

16. Explain di-pi methane rearrangement.
డై పై మీథేన్ పునరమరిక చర్య-వివరించుము.

17. What is Grubb catalyst? Write its structure.
గ్రబ్ ఉత్ప్రేరకము అనగానేమి? దాని నిర్మాణమును వ్రాయండి

18. Write a short note on phase transfer catalysis.
ప్రావస్థా చర ఉత్ప్రేరణ పై లఘు వ్యాఖ్య వ్రాయండి.

BLUE PRINT

UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
I	2	2
II	2	2
III	2	1
IV	2	2
V	2	1
TOTAL	10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc., Chemistry Practical – VIII, Cluster –II.

(At the end of VI semester)

w.e.f. 2017-18

Syllabus

30 hrs (2 h/W)

1. Preparation of Aspirin
2. Preparation of Paracetamol
3. Preparation of Acetanilide
4. Preparation of Barbutiric Acid
5. Preparation of Phenyl Azo β-naphthol

Scheme of Valuation

Time: 3 Hours **Maximum Marks:50**

Record	Marks:5
Viva-Voce	Marks:5
Practical	Marks:40
Writing procedure in 10 minutes (Apparatus, Reagents & Procedure)	10 Marks
Experiment	20 Marks
Final compound	10 Marks

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc Degree Examination at the end of VI semester

Paper – VIII (C - 3) PHARMACEUTICL AND MEDICINAL CHEMISTRY

(w.e.f. 2017-18 under CBCS)

Time: 3Hrs Max. Marks: 75M

SECTION – A

Answer any FIVE questions 5X10=50M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము .

1. Explain metabolites and anti metabolites with one example each.
   జీవక్రియా ఉత్పన్నములు మరియు ప్రతి జీవక్రియా ఉత్పన్నములను ఒక్కో ఉదాహరణతో వివరించుము.
2. Explain the classification of drugs based on therapeutic activity.
   ఔషధాలను వాటి చికిత్సాచర్యాశీలత ఆధారముగా వర్గీకరించండి.
3. Write the synthesis and therapeutic activity of chloroquine.
   క్లోరోక్విన్ యొక్క సంశ్లేషణ మరియు చికిత్సాచర్యాశీలతను వ్రాయండి.
4. Write the synthesis and therapeutic activity of L-Dopa.
   L-డోపా యొక్క సంశ్లేషణ మరియు చికిత్సా శీలతను వ్రాయుము.
5. What are anti asthma drugs? Give an example ,write its therapeutic activity of solbutamol.
   ప్రతి ఉబ్బస ఔషధాలు అనగా నేమి? ఉదాహరణ ఇచ్చి ,వీటియొక్క చికిత్సాచర్యాశీలతను వ్రాయండి .
6. What is retro virus? Explain the replication of HIV in human body.
   రెట్రో వైరస్ అనగా నేమి? మానవ శరీరములో HIV ఎలా ద్విగుణీకృతము అగునో వివరించండి.
7. Explain pharmacodynamics and pharmacokinetics of drugs.
   ఔషధాల యొక్క ఫార్మకోడైనమిక్స్ మరియు ఫార్మకో కైనిటిక్స్ ను వివరించుము.
8. Explain the chemical, generic and trade names of drugs with examples.
   ఔషధాల యొక్క రసాయన ,జాతి మరియు వ్యాపార నామములను ఉదాహరణలతో వివరించండి.
9. What are antipyretic drugs? Write the synthesis of paracetamol.
   ఏంటీ పైరెటిక్ ఔషధాలు అనగా నేమి పారాసిటమాల్ యొక్క సంశ్లేషణను వ్రాయండి.
10. Define immunity. Explain CD-4 and CD-8 cells.
    వ్యాధి నిరోధకతను నిర్వచించుము .CD-4 మరియు CD-8 కణాలను వివరించుము.

SECTION – B

Answer any **FIVE** of the following questions 5X5=25M

ఏవైనా ఐదు ప్రశ్నలకు సమాధానము నిమ్ము.

11. What are hypnotics? Write its activity
    హిప్నోటిక్ ఔషధాలపై లఘు వ్యాఖ్య వ్రాయుము.
12. What are anti anginal drugs? Write the synthesis of glycerol tri nitrate.
    ఏంటీ ఏంజినల్ ఔషధాలు అనగా నేమి? వీటి యొక్క చికిత్సాచర్యాశీలతను తెలపండి.
13. Explain the classification of drugs based on structures.
    ఔషధాల వర్గీకరణను వాటి నిర్మాణము పరముగా వివరించండి.
14. Explain the therapeutic activity of diazepam.
    డైఎజిపామ్ యొక్క చర్యాశీలతను వివరించుము.
15. Define pharmacology and pharmacophore.
    ఫార్మకాలజి మరియు ఫార్మకో ఫోర్ లను నిర్వచించుము.
16. Write any five preventive methods of HIV.
    HIV ని నివారించే ఏవైనా ఐదు పద్ధతులను వ్రాయండి.
17. Write the synthesis of sulphamethoxazole.
    సల్ఫామిదాక్సజోల్ యొక్క సంశ్లేషణను వ్రాయండి.
18. Write the activity of furosemide.
    ఫ్యురోసెమైడ్ యొక్క చర్యాశీలతను వ్రాయండి.

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UNIT	ESSAY QUESTIONS	SHORT QUESTIONS
I	2	1
II	2	1
III	3	3
IV	1	2
V	2	1
TOTAL	10	8

D.N.R.COLLEGE (AUTONOMOUS)::BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

Syllabus and scheme for III B.Sc., Chemistry Practical – VIII, Cluster –III.

(At the end of VI semester)

w.e.f. 2017-18

Syllabus

Project Work

Scheme of Valuation

D.N.R.COLLEGE (A) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
Revised Choice Based Credit System (w. e. f. 2020 – 21)

DEPARTMENT OF CHEMISTRY
BRIDGE COURSE SYLLABUS FOR I B.Sc.

S.NO.	TITLE	HOURS
1	ATOMIC STRUCTURE	2
2	PERIODIC TABLE	2
3	CHEMICAL BONDING	2
4	NOMENCLATURE OF ORGANIC CHEMISTRY	2
5	BASICS OF ANALYTICAL CHEMISTRY	2
6	GENERAL ORGANIC CHEMISTRY	2
7	NOMENCLATURE IN INORGANIC CHEMISTRY	2

D.N.R.COLLEGE (A) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
Revised Choice Based Credit System (w. e. f. 2020 – 21)

DEPARTMENT OF CHEMISTRY
BRIDGE COURSE SYLLABUS FOR I B.Sc.

S.NO.	TITLE	HOURS
1	ATOMIC STRUCTURE	2
2	PERIODIC TABLE	2
3	CHEMICAL BONDING	2
4	NOMENCLATURE OF ORGANIC CHEMISTRY	2
5	BASICS OF ANALYTICAL CHEMISTRY	2
6	GENERAL ORGANIC CHEMISTRY	2
7	NOMENCLATURE IN INORGANIC CHEMISTRY	2

D.N.R.COLLEGE(AUTONOMOUS):: BHIMAVARAM
BOARD OF STUDIES MEETING 2021-2022
DEPARTMENT OF SOCIAL WORK

Minutes of the Social Work Board of Studies meeting held on 15-11-2021at 03:00 P.M. Department of Social Work, D.N.R. College (A), Bhimavaram.

Members :

SL. NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	Ch. Ranga Rao HOD of Social Work, D.N.R.College(A), Bhimavaram	Chairman	Ch. Ranga Rao
2	Dr.K.Satyanarayana HOD of Social Work, K.G.R.L.College,Bhimavaram Satya.socialwork@gmail.com 8309378715	University Representative	Through online
3	Dr.K.Gowtham Kumar Dept of Social Work Govt DegreeCollege ,Ganapavaram 1963kgk@gmail.com 9441267031	Subject Expert	
4	P.Sunitha Lecture In Social Work K.G.R.L College bhimavaram sunithapalavalasa2007@gmail.com 9490068688	Special Invitee	Through online
5	T.Siva III B.A ,SEP Roll No 105	Alumni Member	T. Siva

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
BOARD OF STUDIES MEETING NOTICE 2021-22
DEPARTMENT OF SOCIAL WORK

There will be a meeting of the Board of Studies in Social Work, D.N.R. College(A), Bhimavaram through online on Thursday the **15-11-2021 at 03.00 P.M** to discuss and decide on the following subjects.

All the members are requested to attend the meeting without fail.

AGENDA

Subject No. 1 : To review and approve the syllabi for 3rd and 4th Semester course of B.A. Social Work in papers III , IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject No. 2 : To review and approve the structure of the question papers, model question papers for B.A. Social Work course of Paper III , IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject No. 3: To approve the break-up of the Internal assessment test marks 25 in III and IV semester B.A. Social Work course of papers III,IV & V for adoption and implementation under Revised Choice Based Credit System.

Subject No.4: To approve the qualifying marks in B.A. Social Work Course for papers III, IV and V of 3rd and 4th semester end theory examination for adoption and implementation under Revised Choice Based Credit System.

Subject No. 5: To design and approve the model question paper and abstract question papers of V and VI semesters of B.A. with the maximum marks: 75 for semester End examinations and abstract question papers and model question papers of Internal assessment test with maximum marks: 25 for adoption and implementation form the academic year 2021-22 under CBCS(admitted batch of 2018-21)

Subject No. 6: To approve the breakup of the internal assessment test marks: 25 of IV semester of III BA Degree Courses given below for adoption and implementation from the academic year 2021-22 under RCBCS (admitted batch of 2020-21)

a) Written Examination : 15 Marks
b) Assignment / Seminar : 05 Marks
c) Field Work : 05 Marks

Subject No.7: To review the existing syllabi, model question papers of both theory of I, semester B.A. Social Work course in papers 3, 4,5, 4A, 4B, 5B, 6B.

Subject No. 8: To approve the list of paper setters and examiners for B.A. Social Work.

Subject No.9: To approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III and IV in II B.A. Social Work.

Subject No. 10: To organize National / International / Seminars / Webinars / Workshops / Conferences.

Subject No. 11: Any other matter with the permission of the chairman

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

BOARD OF STUDIES MEETING NOTICE 2021-22

DEPARTMENT OF SOCIAL WORK

There will be a meeting of the Board of Studies in Social Work, D.N.R. College(A), Bhimavaram through online on Thursday the 15-11-2021 at 03.00 P.M to discuss and decide on the following subjects.

Resolutions

Resolution No. 1 : It is Resolve to approve the syllabi for 3rd and 4th Semester course of B.A. Social Work in papers III , IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Resolution No. 2 : It is Resolve to approve the structure of the question papers, model question papers for B.A. Social Work course of Paper III , IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No. 3: It is Resolve to approve the break-up of the Internal assessment test marks 25 in III and IV semester B.A. Social Work course of papers III,IV & V for adoption and implementation under Revised Choice Based Credit System.

Resolution No.4: It is Resolve to approve the qualifying marks in B.A. Social Work Course for papers III, IV and V of 3rd and 4th semester end theory examination for adoption and implementation under Revised Choice Based Credit System.

Resolution No. 5: It is Resolve to approve to design and approve the model question paper and abstract question papers of I, II, V and VI semesters of B.A. with the maximum marks: 75 for semester End examinations and abstract question papers and model question papers of Internal assessment test with maximum marks: 25 for adoption and implementation form the academic year 2021-22 under CBCS(admitted batch of 2018-21)

Resolution No. 6: It is Resolve to approve the breakup of the internal assessment test marks: 25 of IV semester of III BA Degree Courses given below for adoption and implementation from the academic year 2021-22 under RCBCS (admitted batch of 2020-21)

a) Written Examination : 15 Marks
b) Assignment / Seminar : 05 Marks
c) Field Work : 05 Marks

Resolution No.7: To review the existing syllabi, model question papers of both theory of I, semester B.A. Social Work course in papers 3, 4, 5, 4A, 4B, 5B, 6B.

Resolution No. 8: It is Resolve to approve the list of paper setters and examiners for B.A. Social Work.

Resolution No.9: It is Resolve to approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III and IV in II B.A. Social Work.

Resolution No. 10: It is Resolve to approve to organize National / International / Seminars / Webinars / Workshops / Conferences.

Resolution No. 11: NIL

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

II B.A – III Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 3

Title : Social Work with Womenand Children

SYLLABUS

B.A	Semester - III	Credits:4
Course: 3	Social Work With Women and Children	Hrs/ weak:5

UNIT I:

Role and Status of Women in India: Changing perspectives of the role and status of women in India - Their status in the context of family, marriage, religion and economy.

UNIT II:

Concept of gender: Concept of Gender; Constitutional provisions and programmes pertaining to women in India

UNIT III:

Violence against Women: Domestic violence - Legislations such as Dowry Prohibition Act; 1961 (Amended - 1984), Prevention of Domestic Violence Act 2005, Pre-Natal diagnostic techniques (regulation and misuse) Act, 1994

UNIT IV:

Child: Concept, definition, influence of heredity and environment - family, peer group, neighbourhood and social - street children, child labour, neglected and abused children and their problems. Institutional and non-institutional service for children

UNIT V:

Programmes for Women and Children - ICDS, Child Line, SHGs, Role of Social Worker in Family counselling Centres, marital counselling centres and child guidance clinics

Theory : 75 marks

Field Work (Organizations pertaining to Women & Children) : 25 marks

REFERENCE BOOKS:

1. Brook E and Davis, A.N.N. - Women, the family and Social Work
2. Uma Shanker Jha and Premalatha Pujari - Indian Women To-day (Vol.1 & 2)
3. Kumar, R. - Child Development in India (Vol. 1 & 2)

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

II B.A – III Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 3

Title : Social Work with Womenand Children

MODEL QUESTION PAPER

Time : 3Hrs Max.Marks:75

SECTION – A

Write Short Answer for any FIVE of the following.
Each question carries 5 marks. 5 x 5 = 25 Marks

1. Marriage వివాహము
2. Concept of Gender లింగ భావన
3. Pre-natal diagnostics techniques. ప్రీ-నేటురల్ డయాగ్నోస్టిక్స్ పద్ధతులు.
4. Dowry Legislations వరకట్న చట్టం
5. Street Children వీధి బాలలు
6. Neglected and abused children. నిర్లక్ష్యం చేయబడిన మరియు వదిలివేయబడిన పిల్లలు.
7. SHGS SHGS
8. ICDS ICDS

SECTION – B

Answer the following questions.

Each question carries 10 marks (5 x 10 = 50 Marks)

9. a) What is the role and status Women in India?
భారతదేశంలో మహిళల పాత్ర మరియు స్థితి ఏమిటి?

(or)

b) What are the changing perspectives of Women in India?
భారతదేశంలో మహిళల మారుతున్న దృక్పథాలు ఏమిటి?

10. a) Explain the Constitutional provisions for Women?
మహిళలకు సంబంధించిన రాజ్యాంగ నిబంధనలను వివరించండి?

(or)

b) Discuss the Programmes pertaining to women in India.
భారతదేశంలోని మహిళలకు సంబంధించిన కార్యక్రమాలను చర్చించండి.

11. a) Briefly explain the Dowry prohibition Act-1961
వరకట్న నిషేధ చట్టం-1961ని క్లుప్తంగా వివరించండి

(or)

b) Domestic Violence Act – 2005
గృహ హింస చట్టం – 2005

12. a) Write a note on Child Labour.
బాల కార్మికుల గురించి వ్రాయండి

(or)

b) What are the Intuitional and non institutional services for Children?
పిల్లల కోసం అంతర్ దృష్టి మరియు సంస్థాగత సేవలు ఏమిటి?

13. a) What is the role of Social Worker in Family Counselling Centres?
ఫ్యామిలీ కౌన్సెలింగ్ సెంటర్లలో సోషల్ వర్కర్ పాత్ర ఏమిటి?

(or)

b) Discuss the Government programmes for the development of Women and Children.
మహిళలు మరియు పిల్లల అభివృద్ధికి ప్రభుత్వ కార్యక్రమాలను చర్చించండి.

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D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

II B.A – III Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 3

Title : Social Work with Womenand Children

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part -- A and Part – B
   Part -- A – Short answer Question. Each question carries '5' marks
   Part -- B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
ssay Question	02	02	02	02	02

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A - IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 4

Title : **Non-Governmental Organizations**

SYLLABUS

B.A	Semester - IV	Credits:4
Course: 4	Non-Governmental Organizations	Hrs/ weak:5

UNIT I:

Non-Governmental Organisations: Concept, Meaning and Types, Relationship ofNGOs with government

UNIT II:

Promotion and Formation of NGOs: Voluntary action - Concept and trends, A.P.Societies Registration Act, 2001 - Features and steps

UNIT III:

Management of the NGOs: General Body, Executive Committee, Roles andfunctions.

UNIT IV:

Financial Management: Sources of Finance - Governmental and Non-Governmental;methods of resource mobilisation. Corporate Social Responsibility (CSR)

UNIT V:

Project Management: Formulating a project, preparing an Organisational Budget, significance - Disaster Management: Types of disasters and Preventive measures

Theory	: 75 marks
Field Work (Field Work in NGOs)	: 10 marks
Internal	**: 15 marks**

REFERENCE BOOKS :

1. **Chandra Sneha Latha** - Non-Governmental Organisation Structure relevance andfunctions
2. **Thomas, A.** - What is development ?
3. **Drucker, P.** - Managing non-profit Organisations

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A – IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 4

Title : **Non-Governmental Organizations**

MODEL QUESTION PAPER

SECTION – A

Write Short Answer for any FIVE of the following.
Each question carries 5 marks. 5 x 5 = 25 Marks

1. Meaning of NGO's NGO యొక్క అర్థం
2. Trends of NGO's NGOల పోకడలు
3. Management of the NGO's NGOల నిర్వహణ
4. Financial Management ఆర్థిక నిర్వహణ
5. Sources of Finance ఆర్థిక వనరులు
6. Resource Mobilization వనరుల సమీకరణ
7. Project Management ప్రాజెక్ట్ నిర్వహణ
8. Preparation of an Organisation budget. సంస్థ బడ్జెట్ తయారీ.

SECTION – B

Answer the following questions.
Each question carries 10 marks 5 x 10 = 50 Marks

9. a) Briefly explain the concept and types of NGO's.
   NGOల భావన మరియు రకాలను క్లుప్తంగా వివరించండి.

   (or)

   b) Explain the Relationship between NGO's and Government.
   NGOలు మరియు ప్రభుత్వానికి మధ్య ఉన్న సంబంధాన్ని వివరించండి.

10. a) Explain the steps in Promotion and formation of NGO's.
    NGOల ప్రమోషన్ మరియు ఏర్పాటులో దశలను వివరించండి.

    (or)

    b) Write about the A.P Societies registration Act- 2001.
    A.P సొసైటీస్ రిజిస్ట్రేషన్ చట్టం- 2001 గురించి వ్రాయండి.

11. a) Briefly explain the functions of General Body.
    జనరల్ బాడీ విధులను క్లుప్తంగా వివరించండి.

(or)

b) Explain the Role of Executive committee.
కార్యనిర్వాహక కమిటీ పాత్రను వివరించండి.

12. a) Briefly explain the methods of resource mobilization.
వనరుల సమీకరణ పద్ధతులను క్లుప్తంగా వివరించండి.

(or)

b) Discuss about the Corporate Social Responsibility.
కార్పొరేట్ సామాజిక బాధ్యత గురించి చర్చించండి.

13.a) Discuss the steps in formulating a Project.
నివేదిక రూపొందించడంలో దశలను చర్చించండి.

(or)

b) What are the preventive measures of disaster management?
విపత్తు నిర్వహణ యొక్క నివారణ చర్యలు ఏమిటి?

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A – IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 4

Title : **Non-Governmental Organizations**

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
ssay Question	02	02	02	02	02

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A – IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 5

Title : **SOCIAL PROBLEMS AND SOCIAL LEGISLATIONS**

B.A	Semester - IV	Credits:4
Course: 5	SOCIAL PROBLEMS AND SOCIAL LEGISLATIONS	Hrs/ weak:5

UNIT I:

Definition of Social deviance, social disorganization and social problems

UNIT - II

Study and analysis of specific social problems such as AIDS, crime, juvenile delinquency, prostitution, alcoholism, drug addition, untouchability, women related specific social problems such as dowry, female foeticide and infanticide.

UNIT - III

Social Legislation related to crime, juvenile delinquency, prostitution, alcoholism and drug addiction, dowry, untouchability and female foeticide, domestic violence

UNIT - IV

The preventive and remedial services available at the Government and Non-Governmental level todeal with problems mentioned above

UNIT - V

A critical study of models of preventive and remedial work with reference to the roleof social workprofession. Formulation of research projects to study social problems

Theory : 75 marks

Field Work (5 case studies on social problems) : 25 marks

REFERENCE BOOKS:

1. **Barber, J.G.** (1995) - *Social Work with Addiction*, New Delhi; MacmillanPublications
2. **Becker, K.A.** (1966) - *Social Problems: A Modern Approach*, New York;JohnWiley and Sons
3. **Dandekar, V.M.** and **Rath, N.** (1971) - *Poverty in India*, Poona: Indian School ofPoliticalEconomi
4. **Fischer, J.H. (ed)** (1971) - *Problems of Urbanization*, Bombay: Leslie SawhbyProgramme for Training for Democracy
5. **Gangrade, K.D.** (1978) - *Social Legislation in India*, Vol. I & II, Delhi. ConceptPublishingCompany
6. **Schriver, J.E.** (1995) - *Human Behaviour and the Social Environment*, Allyn andBacon
7. **Velleman, R.** (1998) - *Counselling for Alcohol Problems*, Delhi: Sage Publications

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A – IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 5

Title : **SOCIAL PROBLEMS AND SOCIAL LEGISLATIONS**

MODEL QUESTION PAPER

Time : 3Hrs Max.Marks:75

SECTION – A

Write Short Answer for any FIVE of the following.
Each question carries 5 marks. 5 x 5 = 25 Marks

1. Social deviance. సామాజిక విచలనం.
2. Prostitution. వ్యభిచారం.
3. Infanticide శిశుహత్య
4. AIDS ఎయిడ్స్
5. Dowry కట్నం
6. NGO's NGOలు
7. Social Work Profession. సోషల్ వర్క్ వృత్తి.
8. Research Projects. పరిశోధన ప్రాజెక్టులు.

SECTION – B

Answer the following questions.
Each question carries 10 marks 5 x 10 = 50 Marks

9. a) Define Social disorganization and what are the causes of Social disorganization?
సామాజిక అస్తవ్యస్తతను నిర్వచించండి మరియు సామాజిక అస్తవ్యస్తతకు కారణాలు ఏమిటి?

(or)

b) Briefly explain about the Social Problems?
సామాజిక సమస్యల గురించి క్లుప్తంగా వివరించండి?

10. a) What are the causes for Juvenile delinquency?
బాల్య నేరాలకు కారణాలు ఏమిటి?

(or)

b) Explain the female Focticide?
ఆడ భ్రూణహత్యను వివరించండి?

11. a) Discuss the Social Legislation related to alcoholism.
మద్య వ్యసనానికి సంబంధించిన సామాజిక చట్టాన్ని చర్చించండి.

(or)

b) Briefly explain the untouchbility.

అంటరానితనాన్ని క్లుప్తంగా వివరించండి.

12. a) What are the Preventive and remedial services for the drug addicts?
మాదకద్రవ్యాల బానిసలకు నివారణ మరియు నివారణ సేవలు ఏమిటి?

(or)

b) What are the Preventive and remedial services for the HIV infected persons?
HIV సోకిన వ్యక్తులకు నివారణ మరియు నివారణ సేవలు ఏమిటి?

13. a) Explain the role of social worker in the prevention of prostitution.
వ్యభిచార నివారణలో సామాజిక కార్యకర్త పాత్రను వివరించండి.

(or)

b) Explain the steps in preparation of research project for studying social problems.

సామాజిక సమస్యలను అధ్యయనం చేయడానికి పరిశోధన ప్రాజెక్ట్ తయారీలో దశలను వివరించండి.

D.N.R.COLLEGE(Autonomous), Bhimavaram

Affiliated to Adikavi Nannaya University

DEPARTMENT OF SOCIAL WORK

III B.A – IV Semester(RCBCS)

(w.e.f 2020-2021 admitted batch)

PAPER : 5

Title : **SOCIAL PROBLEMS AND SOCIAL LEGISLATIONS**

Instructions to paper setters

Time : 3 Hrs Max. Marks :75

1. Syllabus is divided into 5 units.
2. Question Paper is to be set in Two Parts. Part – A and Part – B
   Part – A – Short answer Question. Each question carries '5' marks
   Part – B – Essay answer questions. Each question carries '10' Marks

Blue Print

Questions	Unit I	Unit II	Unit III	Unit IV	Unit V
Short answer questions	01	02	02	02	01
ssay Question	02	02	02	02	02

D. N. R. COLLEGE (A) :BHIMAVARAM

(AFFILIATED TO ADIKAVI NANNAYYA UNIVERSITY)

DEPARTMENTOF PHYSICS

BOARD OF STUDIES

2021 - 2022

D.N.R. COLLEGE (A): BHIMAVARAM

Board of studies meeting of the Department of Physics

Minutes of Board of studies meeting in Physics held on 15 – 11 - 2021 at 3:00 P.M in the Department of Physics

S.No.	Name and address	Designation	Mobile No.	Email	Signature
01	**Sri. Ch.J.SomaRaju** Lecturer in Physics D.N.R.College, Bhimavaram	Chairman	9248487581	cjsraju1967@gmail.com	
02	**Sri. G.Ranga Rao** Lecturer in Physics D.N.R.College, Bhimavaram	Member	9949805988	rangaraogolla1975@gmail.com	
03	**Smt. T.Krishna Kumari** Lecturer in Physics D.N.R.College, Bhimavaram	Member	9676290947	krishnakumari.moka@gmail.com	
04	**Smt. G.Sri Lakshmi** Lecturer in Physics D.N.R.College, Bhimavaram	Member	9492057667	srilakshmit55@gmail.com	
05	**Sri. V.Nagababu** Lecturer in Physics D.N.R.College, Bhimavaram	Member	9491579096	panduranga.velivela@gmail.com	
06	**Smt. B. Asha Jyothi** Lecturer in Physics D.N.R.College, Bhimavaram	Member	8500030716	Jyothi.bmr@gmail.com	
07	**Smt. S. Sudha Rani** Lecturer in Physics D.N.R.College, Bhimavaram	Member	7013652223	sudharani.jaddu20@gmail.com	
08	**Dr. K. Sri Latha** Lecturer in Physics Ch.S.D.S.T. College for women,Eluru	University nominee	9652164814	srilatha.prathap@gmail.com	
09	**K. B.S.Gopal** Head of the Department of Physics Sir C.R.R. College , Eluru	Subject Expert	9490515274	Bhanukamma2289@gmail.com	
10	**Sri. B. Kiran** Head of the Department of Physics B.V.Raju college, Bhimavaram.	Subject Expert	8328151375	KiranBVRcollege@gmail.com	
11	**Dr. M.V.S. Prasad** Associate professor Government College (A) Rajahmundry, E.G.DT	Special Invitee	9440143723	prasad2008maudru@gmail.com	
12	**Dr.S.Venkata Raju** Retired Physics lecturer,D.N.R.College, Bhimavaram	Alumni Member	9246678554	v.raju2019@gmail.com	
13	**T. Devaki Sai Priya** III B.Sc. (A), Reg.No.-219210084	Student Representative	9603877677	———	

Chairman

Board of studies of Physics 2021-22

Department of Physics D.N.R. College (A), Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON date through ONLINE

Minutes of Board of Studies in Physics meeting held on 15-11-2021 at the Department of Physics at 3 P.M

AGENDA

Subject No. 1: To approve the syllabi for 3rd and 4th Semester courses of Physics in papers III,IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject No. 2: To approve the structure of the question papers, model question papers for physics course of Paper III,IV and V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject No. 3: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in physics course(s), of papers III,IV and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

1. No internal Assessment Test in Practicals
2. Maximum marks 50 of I and II semester end examinations is with the following breakup:
   a) Written Examination in practicals :35 Marks
   b) Record :10 Marks
   c) Viva Voice :05 Marks

Subject No. 4: To approve the break-up of the Internal assessment test marks 25 in 3rd and 4th semester physics courses of papers III,IV and V for adoption and implementation under Revised Choice Based Credit System.

Internal assessment	:	25 Marks with the following break up
Written examination	:	15 Marks
Assignment/seminar/project	:	5 Marks
Extra-curricular activities	:	5 Marks

Subject No.5: To approve the qualifying marks in physics Course(s) for papers III,IV and V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No. 6: To review the existing syllabi, model question papers of both theory and practicals of I, V and VI semester physics course in papers I, 3A, 3B, 4A, 4B, 5B, 6B.
To ratify the existing syllabi, model question papers of both theory and practicals of II semester physics course in paper II .

Subject No. 7: To approve the syllabi of Bridge course and discuss the mode of conduct of Bridge course classes for the academic year 2021-2022.

Subject No. 8: To approve the list of paper setters and examiners for physics Course(s).

Subject No .9: To approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers III,IV and V in physics Course(s)

Subject No.10: To enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Subject No.11: To procure latest editions of text books, reference books ,journals , e- journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Subject No.12: To approve the introduction of English medium in B.Sc. I Year - I Sem and 2 Sem. In pursuance to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.

Subject No.13: Any other matter with the permission of chairman, BOS.

Chairman
Board of studies of Physics 2021-22
Department of Physics
D.N.R.College(Autonomous), Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON date through ONLINE

Minutes of Board of Studies in Physics meeting held on 15-11-2021at the Department of Physics at 3PM

RESULOTIONS

Resolution No.1: Resolved to approve the syllabi for the 3rd and 4th semester courses of Physics in papers III,1V and V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No.2: Resolved to approve structure of the question paper, model question papers for physics course of papers III,IV and V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution No.3: It is Unanimously resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in break up Marks physics Course of papers III,IV and Vfor adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

1. No internal Assessment Test in Practicals
2. Maximum marks 50 of I and II semester end Practical examinations is with the following breakup:
   a) Written Examination in practicals :35 Marks
   b) Record :10 Marks
   c) Viva Voice :05 Marks

Resolution No.4: It is unanimously resolved to approve the break-up of marks of the internal assessment test 25 marks in 3rd and 4th semester physics course paper III,1V and V as given below from the academic year 2021-22 for adoption and implementation under Revised CBCS.

Internal assessment	:	25 Marks with the following break up
Written examination	:	15 Marks
Assignment/seminar/project	:	5 Marks
Extra-curricular activities	:	5 Marks

Resolution No.5: It is unanimously resolved to approve the qualifying marks in physics course(s), papers III,IV and V of 3rd and 4th Semesters end examinations(theory examination 40 marks and practical examination 20 marks.) Resolution No.6: The existing syllabi, model question papers of both theory and practicals of I, V and VI semester of physics Course in papers I, 3A,3B, 4A,4B, 5B and 6B have been reviewed thoroughly. The existing syllabi , model question paper of both theory and practicals of II semester of physics course in paper II has been ratified.

Resolution No.7: Resolved to approve the syllabi of Bridge course and to conduct Bridge course classes through online for the academic year 2021-22.

ResolutionNo.8: Resolved to approve the following list of paper setters and examiners for physics course(s).

Resolution No.9: Resolved to approve the list of recommended text books and reference books which are listed at the end of the syllabi of papers I and II in physics Course(s).

Resolution No.10: Resolved to approve the enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Resolution No.11: Resolved to procure latest editions of text books, reference books ,journals , e- journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Resolution No.12: Discussed thoroughly and resolved to conduct the the introduction of English medium in B.Sc. I Year - 1 Sem and 2 Sem. Inpursuence to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.

Subject No.13: Any other matter with the permission of chairman, BOS

Chairman
Board of studies of Physics 2021-22
Department of Physics
D.N.R.College(Autonomous), Bhimavaram

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: III Semester

Course-III: HEAT AND THERMODYNAMICS

Work load:60hrspersemester **4 hrs/week**

UNIT-I: Kinetic Theoryof gases: **(12 hrs)**

Kinetic Theory of gases-Introduction, Maxwell's law of distribution of molecular velocities (qualitative treatment only) and its experimental verification(Lammert's toothed wheel method), Mean free path, Degrees of freedom, Principle of equi partition of energy (Qualitative ideas only), Transport phenomenon in ideal gases: viscosity, Thermal conductivity and diffusion of gases.

UNIT-II:Thermodynamics: **(12hrs)**

Introduction- Isothermal and Adiabatic processes, Reversible and irreversible processes, Carnot's engine and its efficiency, Carnot's theorem, Thermodynamic scale of temperature and its identity with perfect gas scale, Second law of thermodynamics: Kelvin's and Clausius statements, Principle of refrigeration, Entropy, Physical significance, Change in entropy in reversible and irreversible processes; Entropy and disorder-Entropy of Universe; Temperature-Entropy (T-S) diagram and its uses ; change of entropy when ice changes into steam.

UNIT-III: Thermodynamic Potentials andMaxwell'sequations:(12hrs)

Thermodynamic potentials-Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy and their significance, Derivation of Maxwell's thermodynamic relations from thermodynamic potentials, Applications to (i) Clausius-Clayperon's equation (ii) Value of CP-CV (iii) Value of CP/CV (iv) Joule-Kelvin coefficient for ideal and Van der Waals'gases

UNIT-IV: LowtemperaturePhysics:(12hrs)

Methods for producing very low temperatures, Joule Kelvin effect, Porous plug experiment , Joule expansion, Distinction between adiabatic and Joule Thomson expansion, Expression for Joule Thomson cooling, Liquefaction of air by Linde's method, Production of low temperatures by adiabatic demagnetization (qualitative), Practical applications of substances at lowtemperatures.

UNIT-V: Quantum theoryofradiation: **(12 hrs)**

Blackbody and its spectral energy distribution of black body radiation, Kirchoff's law, Wein's displacement law, Stefan-Boltzmann's law and Rayleigh-Jean's law (Noderivations), Planck's law of black body radiation-Derivation, Deduction of Wein's law and Rayleigh- Jean's law from Planck's law, Solar constant and its determination using Angstrom pyrohcliometer, Estimation of surface temperature ofSun.

REFERENCE BOOKS:

- BSc Physics, Vol.2, Telugu Akademy, Hyderabad
- Thermodynamics, R.C.Srivastava, S.K.Saha&AbhayK.Jain, Eastern EconomyEdition.
- Unified Physics Vol.2, Optics & Thermodynamics, Jai PrakashNath&Co.Ltd.,Meerut
- Fundamentals of Physics. Halliday/Resnick/Walker.C. Wiley India Edition2007
- Heat and Thermodynamics -N BrijLal, P Subrahmanyam, S.Chand&Co.,2012
- Heat and Thermodynamics- MS Yadav, Anmol Publications Pvt. Ltd,2000
- University Physics, HD Young, MW Zemansky,FW Sears, Narosa Publishers, New Delhi

Course outcomes:

On successful completion of this course, the student will be able to:

- Understand the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equipartition of energies, mean free path of molecular collisions and the transport phenomenon in ideal gases
- Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics, the basic principles of refrigeration,the concept of entropy,the thermodynamic potentials and their physicalinterpretations.
- Understand the working of Carnot's ideal heat engine, Carnot cycle and itsefficiency
- Develop critical understanding of concept of Thermodynamic potentials,the formulation of Maxwell's equations and itsapplications.
- Differentiate between principles and methods to produce low temperature and liquefy air and also understand the practical applications of substances at lowtemperatures.
- Examine the nature of black body radiations and the basictheories.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: III Semester

Practical Course-III: Heat and Thermodynamics

Work load:30 hrs **2 hrs/week**

On successful completion of this practical course,the student will be able to;

- Perform some basic experiments in thermal Physics, viz., determinations of Stefan's constant, coefficient of thermal conductivity, variation of thermo-emf of athermocouple with temperature difference at its two junctions, calibration of a thermocouple and Specific heat of aliquid.

Minimum of 6 experiments to be done and recorded

1. Specific heat of a liquid –Joule's calorimeter –Barton's radiationcorrection
2. Thermal conductivity of bad conductor-Lee'smethod
3. Thermal conductivity ofrubber.
4. Measurement of Stefan's constant.
5. Specific heat of a liquid by applying Newton's law of coolingcorrection.
6. Heating efficiency of electrical kettle with varyingvoltages.
7. Thermoemf- thermo couple -Potentiometer
8. Thermal behavior of an electric bulb (filament/torch lightbulb)
9. Measurement of Stefan's constant- emissivemethod
10. Study of variation of resistance with temperature -Thermistor.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: III

Semester Course-III: HEAT AND THERMODYNAMICS

Work load: 60 hrspersemester **4hrs/week**

Blue Print

Time:3Hrs Max.marks:75

PART- I

Note: Answer any FIVE questions of the given questions

Each question carries10marks 5X10=50Marks

Question No	Unit No	Weightage
I(a or b)	Unit I	10
2(a or b)	Unit II	10
3 (a or b)	Unit III	10
4 (a or b)	Unit IV	10
5 (a or b)	Unit V	10

PART- II

Note: Answer any **FOUR** of the given

Each question carries5Marks 5X5=25 Marks

Question No	Unit No	Weightage
6	Unit I	5
7	Unit II	5
8	Unit II	5
9	Unit III	5
10	Unit IV	5
11	Unit IV	5
12	Unit V	5
13	Unit V	5

Internalassessment : 25 Marks with the following break up

Writtenexamination : 15 Marks

Assignment/seminar/project : 5 Marks

Extra-curricular activities : 5 Marks

Note: There must be 4 problems are given in the part II section. We must follow 2 problems for Unit-I,II,III and follow 2 problems for Unit-IV,V

B.Sc. PHYSICS SYLLABUS UNDER CBCS
For Mathematics Combinations
[2020-21 Batch onwards]
II Year B.Sc.-Physics: III Paper : III
Semester Course-III: HEAT AND THERMODYNAMICS

Time:3Hrs **Max.Marks:75M**

PART-A

I Answer any Five of thefollowingQuestions. 5×10 =50M

1. Obtain the expression for the coefficient of viscosity of a gas on the basis of kinetic theory.
వాయువుల అణుచలన సిద్ధాంతం ఆధారంగా ఒక వాయువు యొక్క స్నిగ్ధతా గుణకానికి సమీకరణం రాబట్టుము.

Or

Derive the equation for mean free path of gas molecules.
వాయు అణు స్వేచ్ఛా పథమధ్యమునకు సమీకరణాన్ని ఉత్పాదింపుము

2. Describe the working of Carnot's engine and derive an expression for its efficiency.
కార్నో యంత్రముయొక్కపని చేయు విధానము మరియు దాని యొక్క దక్షతకుసమీకరణంను ఉత్పాదింపుము.

Or

Discuss the concept of entropy? Explain the change of entropy in reversible and irreversible process.
ఎంట్రపి భావనను చర్చింపుము? ఏకగత, ద్విగత ప్రక్రియలలో ఎంట్రపీ మార్పులను వివరింపుము.

3. Derive Maxwell's thermodynamic equations using thermodynamic potentials.
ఉష్ణగతిక శక్యాలును ఉపయోగించిమాక్స్వెల్ఉష్ణగతికసమీకరణాలనుఉత్పాదింపుము.

Or

What do you mean by specific heats of a gas ? obtain the ratio of specific heats ?
వాయువుల విశిష్టోష్ణములు అనగా నేమి? విశిష్టోష్ణముల మధ్య నిష్పత్తికి సమీకరణము రాబట్టుము.

4. Explain Joule-kelvin effect. Describe porous plug experiment and indicate its results?
జౌల్-కెల్విన్ ఫలితాన్ని వివరింపుము. పోరస్ ప్లగ్ ప్రయోగాన్ని వర్ణించి, దాని ఫలితాలను తెలుపుము.

Or

Explain with theory, the adiabatic demagnetization method, for producing very low temperature?
చాలా తక్కువ ఉష్ణోగ్రతను ఉత్పత్తి చేయడానికి స్థిరోష్ణక నిరయస్కాంతీకరణపద్ధతిని సిద్ధాంతంతో వివరించండి?

5.Define solar constant. Explain how the solar constant can be determined experimentally?
సౌర స్థిరాంకాన్ని నిర్వచించండి. సౌర స్థిరాంకాన్ని ప్రయోగాత్మకంగా ఎలా నిర్ణయించవచ్చో వివరించండి?

Or

What is black body ? Describe the energy distribution in black body radiation?
కృష్ణ వస్తువు అనగా నేమి ? కృష్ణ వస్తువు ఉష్ణ వికిరణానికి సంబంధించి శక్తి వితరణ ను వివరింపుము?

PART-B

II Answer any Five of thefollowingQuestions. 5×5 = 25 M

6. Explain Transport phenomena in gases?
వాయువులలో అభిగమన దృగ్విషయములు వివరింపుము.

7. State and explain Carnot's theorem?
కార్నో సిద్ధాంతమును తెలిపి, దానిని వివరింపుము.

8. Derive Clauslus- Clapeyron equation ?
క్లాసియస్-క్లెపరాన్ సమీకరణమును వివరింపుము.

9. What is an Ozone layer ? What are the effects of chloro and fluro carbons on ozone layer?
ఓజోన్ పొర అంటే ఏమిటి? ఓజోన్ పొరపై క్లోరో మరియు ఫ్లోరో కార్బన్ల ప్రభావం ఏమిటి?

10. The efficiency of a carnots engine is 60%. Calculate the increase in temperature of the source so that the efficiency becomes 70%.
ఒక కార్నో యంత్రం యొక్క దక్షత 60% . దాని దక్షత 70% కావలయునన్న, ఉష్ణాశయపు ఉష్ణోగ్రతలో పెరుగుదలను గణింపుము.

11. Calculate the temperature of Inversion of helium gas. Given a = 3.44 x 10^{-3} nt-m^4/mol^2 and b = 0.0237 x 10^{-3}/mole and R = 8031 joule/mole-k.
క్రింది దత్తాంశము నుండి, హీలియం వాయువు విలోమన ఉష్ణోగ్రత కనుగొనుము?
a = 3.44 x 10^{-3} nt-m^4/mol^2మరియు b = 0.0237 x 10^{-3}/mole and R = 8031 joule/mole-k.

12. At what rate is the energy radiated by a sphere of radius 5 cm., at 3000K with a emissivity of 0.3 ?
(Stefan's constant = 5.7 x 10^{-8} watt/m^2/k^4)
ఉద్గారకత 0.3 మరియు 3000Kఉష్ణోగ్రత వద్ద 5 సెం.మీ వ్యాసార్ధము గల గోళము వలన కలుగు శక్తి వికిరణ రేటును గణింపుము? (స్టీపాన్ స్థిరాంకము= 5.7 x 10^{-8} watt/m^2/k^4).

13. Calculate at what temperature a body would appear red and blue. The wien's constant b = 3 x 10^{-3} mk. The maximum wavelengths of emission are 7500A^0 and 4800 A^0 for red and blue respectively ?
ఒక వస్తువు ఏ ఉష్ణోగ్రత వద్ద ఎర్రగా, నీలంగా కనిపిస్తుంది.ఎరుపు, నీలం వర్ణాల ఉద్గారతరంగ దైర్ఘ్యాలు 7500A^0 మరియు4800 A^0వీన్ స్థిరాంకముb = 3 x 10^{-3} mk.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: III

Semester Course-III: HEAT AND THERMODYNAMICS

Time: 1Hrs **CAT-I** **Max.Marks:15M**

I. LongAnswer Question 1×7=7M

1. Obtain the expression for the coefficient of viscosity of a gas on the basis of kinetic theory.
వాయువుల అణుచలన సిద్ధాంతం ఆధారంగా ఒక వాయువు యొక్క స్నిగ్ధత్వా సమీకరణం రాబట్టుము.

Section-B

II. ShortAnswerQuestions 2×4=8M

2. Explain Transport phenomena in gases?
వాయువులలో అభిగమన దృగ్విషయములు వివరింపుము.

3. The efficiency of a carnots engine is 60%. Calculate the increase in temperature of the source so that the efficiency becomes 70%.
ఒక కార్నో యంత్రం యొక్క దక్షత 60% , దాని దక్షత 70% కావలయునన్న, ఉష్ణాశయపు ఉష్ణోగ్రతలో పెరుగుదలను గణింపుము.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper : IV

Course-IV: ELECTRICITY, MAGNETISM AND ELECTRONICS

Work load:60 hrspersemester **4 hrs/week**

UNIT-I

Electrostatics:(6hrs)

Gauss's law-Statement and its proof, Electric field intensity due to (i) uniformly charged solid sphere and (ii) an infinite conducting sheet of charge, Deduction of Coulomb's law from Gauss law, Electrical potential– Equipotential surfaces, Potential due to a (i) dipole (ii)uniformly chargedsphere

Dielectrics: **(6 hrs)**

Dielectrics-Polar and Non-polar dielectrics- Effect of electric field on dielectrics,Dielectric strength, Capacitance of a parallel plate condenser with dielectric slab between the plates, Electric displacement D, electric polarization P,Relation between D, E and P, Dielectric constant and electric susceptibility.

UNIT-II

Magnetostatics: **(6 hrs)**

Biot-Savart's law and its applications: (i) circular loop and (ii) solenoid, Divergence and curl of magnetic field, Ampere's Circuital Law and its application to Solenoid,Hall effect, determination of Hall coefficient and applications.

ElectromagneticInduction: **(6 hrs)**

Faraday's laws of electromagnetic induction, Lenz's law, Self induction and Mutual induction, Self inductance of a long solenoid, Mutual inductance of two coils, Energy stored in magnetic field, Eddy currents and Electromagnetic damping

UNIT-III

Alternatingcurrents: **(6 hrs)**

Alternating current - Relation between current and voltage in LR and CR circuits, Phasor and Vector diagrams, LCR series and parallel resonant circuit, Q –factor, Power in ac circuits, Power factor.

Electromagneticwaves-Maxwell'sequations: **(6 hrs)** Idea of displacement current, Maxwell's equations-Derivation, Maxwell's wave equation (with derivation), Transverse nature of electromagnetic waves, Poynting theorem (Statement and proof)

UNIT-IV

Basic Electronic devices: **(12hrs)**

PN junction diode, Zener diode and Light Emitting Diode (LED) and their I-V characteristics, Zener diode as a regulator- Transistors and its operation, CB, CE and CC configurations, Input and output characteristics of a transistor in CE mode, Relation between alpha, beta and gamma; Hybrid parameters, Determination of hybrid parameters from transistor characteristics; Transistor as anamplifier.

UNIT-V:

Digital Electronics: **(12hrs)**

Number systems, Conversion of binary to decimal system and vice versa, Binary addition & Binary subtraction (1's and 2's complement methods), Laws of Boolean algebra, Demorgan's laws-Statements and Proofs, Basic logic gates, NAND and NOR as universal gates, Exclusive-OR gate, Half adder and Full adder circuits.

REFERENCE BOOKS

- BSc Physics, Vol.3, Telugu Akademy, Hyderabad.
- Electricity and Magnetism, D.N. Vasudeva, S. Chand &Co.
- Electricity and Magnetism, B.D.Duggal and C.L.Chhabra. Shobanlal&Co.
- Electricity, Magnetism with Electronics, K.K.Tewari, R.Chand&Co.,
- Electricity and Magnetism, R.Murugeshan, S. Chand &Co.
- Principles of Electronics, V.K. Mehta, S.Chand&Co.,
- Digital Principles and Applications, A.P. Malvino and D.P.Leach, McGrawHill Edition.

Course outcomes:

On successful completion of this course, the students will be able to:

- ❖ Understand the Gauss law and its application to obtain electric field in different cases and formulate the relationship between electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectricconstant.
- ❖ Distinguish between the magnetic effect of electric current and electromagnetic induction and apply the related laws in appropriatecircumstances.
- ❖ Understand Biot and Savart's law and Ampere's circuital law to describe and explain the generation of magnetic fields by electricalcurrents.
- ❖ Develop an understanding on the unification of electric and magnetic fields and Maxwell's equations governing electromagneticwaves.
- ❖ Phenomenon of resonance in LCR AC-circuits, sharpness of resonance,Q-factor,Power factor and the comparative study of series and parallel resonant circuits.
- ❖ Describe the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors
- ❖ Understand the operation of basic logic gates and universal gates and their truth tables.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper : IV

Practical Course IV: Electricity, Magnetism and Electronics

Work load:30 hrs **2 hrs/week**

Course outcomes (Practicals):

On successful completion of this practical course the student will be able to;

- Measure the current sensitivity and figure of merit of a moving coilgalvanometer.
- Observe the resonance condition in LCR series and parallelcircuit
- Learn how a sonometer can be used to determine the frequency ofAC-supply.
- Observe the variation of magnetic field along the axis of a circular coil carrying current using Stewart and Gee'sapparatus.
- Understand the operation of PN junction diode, Zener diode and a transistor and their V-Icharacteristics.
- Construct the basic logic gates, half adder and full adder and verify their truth tables. Further, the student will understand how NAND and NOR gates can be used as universal buildingblocks.

Minimum of 6 experiments to be done and recorded

1. Figure of merit of a moving coilgalvanometer.
2. LCR circuit series/parallel resonance, Qfactor.
3. Determination of ac-frequency–Sonometer.
4. Verification of Kirchoff's laws and Maximum Power Transfertheorem.
5. Field along the axis of a circular coil carrying current-Stewart & Gee'sapparatus.
6. PN Junction DiodeCharacteristics
7. Zener Diode –V-ICharacteristics
8. Zener Diode as a voltageregulator
9. Transistor CE Characteristics- Determination of hybridparameters
10. Logic Gates- OR,AND,NOT and NAND gates. Verification of TruthTables.
11. Verification of De Morgan'sTheorems.
12. Construction of Half adder and Full adders-Verification of truthtables

B.Sc. PHYSICS SYLLABUS UNDER CBCS
For Mathematics Combinations
[2020-21 Batch onwards]
II Year B.Sc.-Physics: IV Semester Paper : IV
Course-IV: ELECTRICITY, MAGNETISM AND ELECTRONICS

Work load: 60 hrspersemester **4hrs/week**

Blue Print

Time:3Hrs Max.marks:75

PART- I

Note: Answer any FIVE questions of the given questions

Each question carries10marks 5X10=50Marks

Question No	Unit No	Weightage
1(a or b)	Unit I	10
2(a or b)	Unit II	10
3 (a or b)	Unit III	10
4 (a or b)	Unit IV	10
5 (a or b)	Unit V	10

PART- II

Note: Answer any FOUR of the given

Each question carries5Marks 5X5=25 Marks

Question No	Unit No	Weightage
6	Unit I	5
7	Unit I	5
8	Unit II	5
9	Unit III	5
10	Unit IV	5
11	Unit IV	5
12	Unit V	5
13	Unit V	5

Internalassessment : 25 Marks with the following break up
Writtenexamination : 15 Marks
Assignment/seminar/project : 5 Marks
Extra-curricular activities : 5 Marks

Note: There must be 4 problems are given in the part ii section. We must follow 2 problems for Unit-I,II,III and follow 2 problems for Unit-IV,V

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper : IV

Course-IV: ELECTRICITY, MAGNETISM AND ELECTRONICS

Time:3Hrs **Max.Marks:75M**

PART-A

I Answer any Five of the following Questions. 5×10 =50M

1. Derive an expression for electric potential due to a charged spherical conductor.
అపేశపూరితము చేయబడిన ఒక వాహక గోళము వలన ఏర్పడు పొటెన్షిల్ కు సమీకరణము రాబట్టుము.

Or

Define electric vectors. Derive relation between them and deduce the relation between susceptibility and dielectric constant.
విద్యుత్ సదిశలను నిర్వచించండి .వాటి మధ్య ఉన్న సంబంధాన్ని రాబట్టుము. మరియు గ్రహణశీలత మరియు విద్యుద్వాహక స్థిరాంకం మధ్య సంబంధాన్ని రాబట్టుము.

2. State and explain Biot-Savarts law. Derive an expression for the magnetic induction at a point on the axis of a circular coil carrying current.
బయట్ - సావర్ట్ సూత్రమును వ్రాసి వివరించుము. విద్యుత్ ప్రవహిస్తున్న వృత్తకార తీగ చుట్ట యొక్క అక్షీయ రేఖ పై గల బిందువు వద్ద అయస్కాంత ప్రేరణను ఉత్పాదించుము.

Or

Define coefficient of the self induction and obtain an expression for self inductance of a solenoid.
స్వీయ ప్రేరణ యొక్క గుణకాన్ని నిర్వచించండి మరియు సోలేనోయిడ్ యొక్క స్వీయ ప్రేరణ కోసం వ్యక్తీకరణను రాబట్టుము.

3. Define alternating current and obtain the relation between current and voltage in L-R, circuit.
ఏకాంతర విద్యుత్ ప్రవాహము నిర్వచించి, వలయములో విద్యుత్ ప్రవాహము మరియు వోల్టజిల మధ్య సంబంధమునకు సమీకరణము రాబట్టుము.

Or

Write Maxwell's equation in differential form. Show that electromagnetic waves are transverse in nature.
మాక్స్వెల్ సమీకరణాన్ని అవకలన రూపంలో వ్రాయండి .తరంగాలు విద్యుదయస్కాంత ప్రకృతిలో తిర్యక్ తరంగ రూపంలో ఉన్నాయని చూపండి.

4. What is transistor? Describe the operation of NPN transistor.
ట్రాన్సిస్టర్ అనగానేమి ? NPN ట్రాన్సిస్టర్ పని చేయు విధానము వివరించుము.

Or

Describe the operations of transistor circuit configurations.
ట్రాన్సిస్టర్ సర్క్యూట్ కాన్ఫిగరేషన్ల కార్యకలాపాలను వివరించండి.

5. State and prove De-Morgan's theorem.
డి- మార్గాన్ సూత్రములను తెల్పి, బుజువు చేయుము.

Or

Explain the operations of half adder and full adder.
అర్ధసంకలని మరియు పూర్ణ సంకలని పనిచేయు విధానములను వివరించుము

PART-B

II Answer any Five of thefollowingQuestions. 5×5 = 25M

6. Prove Gauss law in Electrostatics.
స్థిర విద్యుత్ శాస్త్రములో గాసీ నియమము బుజువు చేయుము.

7. Explain Hall effect.
హాల్ ఫలితమును వర్ణింపుము.

8. Calculate the energy stored in the magnetic field of solenoid of inductance 5×10^{-3} Henry. When a maximum current of 3 amp flow through it,
5×10^{-3}హెన్రి ప్రేరణ గల సోలినాయిడ్ గుండా 3 అంపియర్స్ విద్యుత్ ప్రవహిస్తున్నపుడు అయస్కాంత క్షేత్రము వలన దానిలో ఉండే శక్తి ఎంత?

9. Explain the working of transistor as an amplifier.
ట్రాన్సిస్టర్ వర్ధకముగా పని చేయు విధానము వ్రాయుము.

10. Explain XOR gate.
XOR ద్వారమును వివరింపుము.

11. The electric susceptibility of a material is 36×10^{-12} $c^2/N\text{-}m^2$. Calculate the value of dielectric constant and permittivity of the material . ($\varepsilon_0 = 9 \times 10^{-12}$ F/m)
ఒక పదార్థపు సుసెప్టిబిలిటి 36×10^{-12} $c^2/N\text{-}m^2$. ఈ పదార్థపు రోధక స్థిరాంకమును మరియు పెర్మిటివిటీలను కనుగొనుము. ($\varepsilon_0 = 9 \times 10^{-12}$ F/m)

12. The charge on a spherical conductor is 3×10^{-9}c. Radius of the conductor is 0.1m. Find the potential on its surface.
0.1 మీ వ్యాసార్థము 3×10^{-9}cవిద్యుదావేశము కలిగిన గోళాకార వాహకము మీద విబేన్వియల్ను కనుగొనుము.

13. Convert $(100)_{10}$ in to binary
$(100)_{10}$నుద్వి అంశమానములోకి మర్చండి

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper : IV

Course-IV: ELECTRICITY, MAGNETISM AND ELECTRONICS

Time:1Hr **Max.Marks:15M**

Section–A

ILongAnswer Question 1×7=7M

1. Define electric vectors. Derive relation between them and deduce the relation between susceptibility and dielectric constant.
   విద్యుత్ సదిశలును నిర్వచించండి .వాటి మధ్య ఉన్న సంబంధాన్ని రాబట్టుము.గ్రహణశీలత మరియు విద్యుద్వాహక స్థిరాంకం మధ్య సంబంధాన్ని రాబట్టుము

Section-B

II ShortAnswerQuestions 2×4=8M

2. Explain the Faraday's Laws in Electromagnetic Induction.
   ఫారడే విద్యుదయస్కాంత ప్రేరణ నియమాలను వివరించుము

3. Calculate the energy stored in the magnetic field of solenoid of inductance 5×10^{-3} Henry, When a maximum current of 3 amp flow through it.
   5×10^{-3}హెన్రి ప్రేరణ గల సోలినాయిడ్ గుండా 3 ఆంపియర్స్ విద్యుత్ ప్రవహిస్తున్నపుడు అయస్కాంత క్షేత్రము వలన దానిలో ఉండేశక్తి ఎంత?

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper:V

Course V: MODERN PHYSICS

Work load:60hrspersemester **4 hrs/week**

UNIT-I :

Atomic and Molecular Physics: **(12hrs)**

Vector atom model and Stern-Gerlach experiment, Quantum numbers associated with it, Angular momentum of the atom, Coupling schemes, Spectral terms and spectral notations, Selection rules, Intensity rules, Fine structure of Sodium D-lines, Zeeman effect, Experimental arrangement to study Zeeman effect; Raman effect, Characteristics of Raman effect, Experimental arrangement to study Raman effect, Quantum theory of Raman effect, Applications of Raman effect.

UNIT-II:

Matterwaves& UncertaintyPrinciple: **(12 hrs)**

Matter waves, de Broglie's hypothesis, Wave length of matter waves, Properties of matter waves, Davisson and Germer's experiment, Phase and group velocities, Heisenberg's uncertainty principle for position and momentum& energy and time, Illustration of uncertainty principle using diffraction of beam of electrons (Diffraction by a single slit)and photons(Gamma ray microscope),Bohr's principle ofcomplementarily.

UNIT-III:

Quantum (Wave) Mechanics: **(12hrs)**

Basic postulates of quantum mechanics, Schrodinger time independent and time dependent wave equations-Derivations, Physical interpretation of wave function, Eigen functions, Eigen values, Application of Schrodinger wave equation to (i) one dimensional potential box of infinite height(Infinite Potential Well) and (ii) one dimensional harmonic oscillator

UNIT-IV:

Nuclear Physics: **(12hrs)**

Nuclear Structure: General Properties of Nuclei, Mass defect, Binding energy; Nuclear forces: Characteristics of nuclear forces- Yukawa's meson theory; Nuclear Models: Liquid drop model, The Shell model, Magic numbers; Nuclear Radiation detectors: G.M. Counter, Cloud chamber, Solid State detector; Elementary Particles: Elementary Particles and their classification

UNIT-V:

Nanomaterials: **(7hrs)**

Nano materials – Introduction, Electron confinement, Size effect, Surface to volume ratio, Classification of nano materials– (0D, 1D, 2D); Quantum dots, Nano wires, Fullerene, CNT, Graphene(Mention of structures and properties),Distinct properties of nano materials (Mention-mechanical, optical, electrical, and magnetic properties); Mention of applications of nano materials: (Fuel cells, Phosphors for HD TV, Next Generation Computer chips, elimination of pollutants, sensors)

Superconductivity: **(5 hrs)**

Introduction to Superconductivity, Experimental results-critical temperature, critical magnetic field, Meissner effect , Isotope effect, Type I and Type II superconductors, BCS theory (elementary ideas only),Applications of superconductors

REFERENCE BOOKS

- BSc Physics, Vol.4, Telugu Akademy, Hyderabad
- Atomic Physics by J.B. Rajam; S.Chand&Co.,
- Modern Physics by R. Murugeshan and Kiruthiga Siva Prasath. S. Chand & Co.
- Concepts of Modern Physics by Arthur Beiser. Tata McGraw-HillEdition.
- Nuclear Physics, D.C.Tayal, Himalaya PublishingHouse.
- S.K. Kulkarni, Nanotechnology: Principles & Practices (CapitalPubl.Co.)
- K.K.Chattopadhyay&A.N.Banerjee, Introd.to Nanoscience and Technology(PHI LearningPriv.Limited).
- Nano materials, A K Bandopadhyay. New Age International Pvt Ltd(2007)
- Textbook of Nanoscience and Nanotechnology, BS Murthy, P Shankar, Baldev Raj,BBRathand J Murday-Universities Press-IIM

COURSE OUTCOMES:

On successful completion of this course, the students will be able to:

- Develop an understanding on the concepts of Atomic and Modern Physics, basic elementary quantum mechanics and nuclear physics.
- Develop critical understanding of concept of Matter waves and Uncertaintyprinciple.
- Get familiarized with the principles of quantum mechanics and the formulation of Schrodinger wave equation and itsapplications.
- Examine the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models and different nuclear radiationdetectors.
- Classify Elementary particles based on their mass, charge, spin, half life and interaction.
- Get familiarized with the nano materials, their unique properties andapplications.
- Increase the awareness and appreciation of superconductors and their practical applications.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper:V

Practical Course V:Modern Physics

Work load:30 hrs **2 hrs/week**

On successful completion of this practical course, the student will be able to;

- Measure charge of an electron and e/m value of an electron by Thomsonmethod.
- Understand how the Planck's constant can be determined using Photocell andLEDs.
- Study the absorption of α-rays and β-rays, Range of β-particles and the characteristics of GMcounter
- Determine the Energy gap of a semiconductor using thermistor and junctiondiode.

Minimum of 6 experiments to be done and recorded

1. e/m of an electron by Thomsonmethod.
2. Determination of Planck's Constant(photocell).
3. Verification of inverse square law of light using photovoltaiccell.
4. Determination of the Planck's constant using LEDs of at least 4 differentcolours.
5. Determination of work function of material of filament of directly heated vacuum diode.
6. Study of absorption ofα-rays.
7. Study of absorption ofβ-rays.
8. Determination of Range ofβ-particles.
9. Determination of M &H.
10. Analysis of powder X-ray diffraction pattern to determine properties ofcrystals.
11. Energy gap of a semiconductor using junctiondiode.
12. Energy gap of a semiconductor usingthermistor
13. GM countercharacteristics

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Course V: MODERN PHYSICS

Work load:60hrspersemester **4 hrs/week**

Blue Print

Time:3Hrs Max.marks:75

PART- I

Note: Answer any **FIVE** questions of the given questions

Each question carries10marks 5X10=50Marks

Question No	Unit No	Weightage
1(a or b)	Unit I	10
2(a or b)	Unit II	10
3 (a or b)	Unit III	10
4 (a or b)	Unit IV	10
5 (a or b)	Unit V	10

PART- II

Note: Answer any **FOUR** of the given

Each question carries5Marks 5X5=25 Marks

Question No	Unit No	Weightage
6	Unit I	5
7	Unit I	5
8	Unit II	5
9	Unit III	5
10	Unit IV	5
11	Unit IV	5
12	Unit V	5
13	Unit V	5

Internalassessment : 25 Marks with the following break up

Writtenexamination : 15 Marks

Assignment/seminar/project : 5 Marks

Extra-curricular activities : 5 Marks

Note: There must be 4 problems are given in the part II section. We must follow 2 problems for Unit-I,II,III and follow 2 problems for Unit-IV,V

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper : V

Course-IV: Modern physics

Time:3Hrs **Max.Marks:75M**

PART-A

I Answer any Five of thefollowingQuestions. 5×10 =50M

1. Describe stern-Gerlach experiment. Indicate the importance of the result obtained.
స్టెర్న్-గెర్లాక్ ప్రయోగాన్ని వివరించండి.మరియు ప్రయోగ ఫలితం యొక్క ప్రాముఖ్యతను విశ్లేషించండి.

Or

(a) Explain Raman effect and discuss about Quantum theory of Raman effect.
రామన్ ఫలితాన్ని వివరించి, రామన్ ఫలితం యొక్క క్వాంటం సిద్ధాంతాన్ని వివరించుము.

(b) Write the applications of Raman effect.
రామన్ ఫలితం అనువర్తనాలను తెలపండి.

2. Discuss about Davisson and Germer experiment for the study of electron diffraction.
ఎలక్ట్రాన్ వివర్తనని పరిశీలించడానికిడేవిసన్ మరియు జెర్మర్ ప్రయోగాన్ని వివరించండి.

Or

State and explain Helsenberg's uncertainty principle for position and momentum & energy and time.
స్థానంమరియు ద్రవ్యవేగం;శక్తిమరియు కాలములకుహైసంబర్గ్ అనిశ్చితత్వ నియమాన్ని తెలిపి , వివరించండి.

3. Derive schrodinger time independent and time dependent wave equations.
కాలము మీద ఆధారపడని మరియు కాలము మీద ఆధారపడే ష్రోడింగర్ తరంగ సమీకరణాలను ఉత్పాదించండి.

Or

Discuss about energy levels and wave functions of a particle enclosed in one dimentional potential box of infinite height.
అనంతమైన ఎత్తు గల ఏకమితీయ పొటెన్షియల్ పేటికలో గల కణము యొక్క శక్తి స్థాయిలు మరియు తరంగ ప్రమేయాలను చర్చించండి.

4. Mention the properties of nucleus with reference to size , charge, mass, nuclear spin, magnetic dipole moment and electric quadrupole moment.
కేంద్రక ధర్మాలైన పరిమాణం, ఆవేశం, ద్రవ్యరాశి, స్పిన్,అయస్కాంత ద్రామకం, విద్యుత్ క్వాడ్రపోల్ ద్రామకాలను వివరించండి.

Or

Write a short note on liquid drop model.
ద్రవబిందు నమూనా మీద ఒక లఘుటీక వ్రాయుము.

5. What are type-I and type-II super conductors ? Explain ?
మొదటి రకం మరియు రెండవ రకం అతివాహకాలు అంటేఏమిటి? వివరించండి.

Or

Explain the classifications of nano materials .
నానో పదార్థాల వర్గీకరణను వివరించండి.

PART-B

II Answer any Five of thefollowingQuestions. 5×5 = 25M

6. Explain the Zeeman Effect.

జీమన్ ఫలితాన్ని వివరించండి

7. Calculate the uncertainty in momentum of electron when its uncertainty position is 2×10^{10}m.

ఎలక్ట్రాన్ యొక్క అనిశ్చితి స్థానం 2×10^{10}mఉన్నప్పుడు దాని ద్రవ్యవేగం లోని అనిశ్చితిని లెక్కించండి.

8. What is wave function. Write its properties.

తరంగ ప్రమేయము అంటే ఏమిటి? వాటి లక్షణాలు వ్రాయండి

9. A nuclear of mass number 125 has radius 0.8fermi. Find the radius of a nucleus having mass number 64.

ద్రవ్యరాశి సంఖ్య 125 యొక్క న్యూక్లియర్ వ్యాసార్ధం 0.8fermi కలిగి ఉంటుంది. ద్రవ్యరాశి సంఖ్య 64 కలిగిన కేంద్రకం యొక్క వ్యాసార్ధాన్ని కనుగొనండి.

10. Write the different application of superconductivity.

అతివాహకాలవివిధ అనువర్తనాలను తెలపండి.

11. An electron has a speed of 600 m/s with an accuracy of 0.005%. Calculate the certainty with which we can locate the position of the electron. Given that $h = 6.6 \times 10^{-34}$ joule-sec, $m = 9.1 \times 10^{-31}$kg.

0.005% కచ్చితత్వంతోఒకఎలక్ట్రాన్ 600 మీ/సె వేగాన్ని కలిగి ఉన్నది. అయితే దాని స్థానాన్ని కనుక్కోండి.(h = 6.6 x 10-34 జౌల్-సెకను, m= 9.1 x 10-31kg.)

12. Explain Eigen functions and Eigen values.

ఐగన్ ప్రమేయాలు మరియు ఐగన్ విలువలను వివరించండి.

13. The exciting line in an experiment is 5460A^0 and the stokes line is at 5520A^0 , find the wavelength of Anti-stokes line.

ఒక ప్రయోగంలో ఉత్తేజకరమైన లైన్ 5460A^{0}మరియు స్టోక్స్ లైన్ 5520A^{0}వద్ద ఉంది, యాంటీ-స్టోక్స్ లైన్ యొక్క తరంగదైర్ఘ్యాన్ని కనుగొనండి.

B.Sc. PHYSICS SYLLABUS UNDER CBCS

For Mathematics Combinations

[2020-21 Batch onwards]

II Year B.Sc.-Physics: IV Semester Paper:V

Course V: MODERN PHYSICS

Time:1Hr **Max.Marks:15M**

Section--A

I. LongAnswer Question **1×7=7M**

1. Describe stern-Gerlach experiment. Indicate the importance of the result obtained.
   స్టెర్న్-గెర్లాక్ ప్రయోగాన్ని వివరించండి.మరియు ప్రయోగ ఫలితం యొక్క ప్రాముఖ్యతను విశ్లేషించండి.

Section-B

II. ShortAnswerQuestions **2×4=8M**

2. Write the applications of Raman effect.
   రామన్ ఫలితం అనువర్తనాలను తెలపండి.

3. Calculate the uncertainty in momentum of electron when its uncertainty position is 2×10^{10}m.
   ఎలక్ట్రాన్ యొక్క అనిశ్చితి స్థానం 2×10^{10}mఉన్నప్పుడు దాని మొమెంటంలోని అనిశ్చితిని లెక్కించండి.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

Skill Development Course

Title of the course: ELECTRICAL APPLAINCES

AGENDA

1. To introduce the **ELECTRICAL APPLAINCES** as skill development course - I for 1st Semester in 1st year B.A. / B.Com. / B.Sc. programmes under revised CBCS form the academic year 2020-21 onwards.

2. To review the syllabus for Skill development course - I for 1stSemester in B.A./B.Com./B.Sc. programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

3. To review the model question paper, Blue print and structure of question paper for the Skill development course - I for 1st Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

4. To discuss and review the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for the skill development course - I, **ELECTRICAL APPLAINCES,** for 1stSemester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

5. To review the list of recommended test books and reference books which are listed at the end of the syllabi of the respective Skill development course - I **ELECTRICAL APPLAINCES**

6. To approve the introduction of English medium in B.Sc. I Year - I Sem and 2 Sem. In pursuance to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.

7. Any other matter with the permission of chairman, board of studies.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON 10-09-2020 through ONLINE

Skill Development Course

Title of the course: ELECTRICAL APPLAINCES

Minutes of Board of Studies in Physics meeting held on 10-09-2020 at the Department of Physics at 10.00AM

RESOLUTIONS

1. Resolved to reviewed the Skill development course - I **ELECTRICAL APPLAINCES,** for 1st Semester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

2. Resolved to reviewed the syllabus of the Skill development course - I **ELECTRICAL APPLAINCES,** for 1st Semester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption from the academic year 2020-21 onwards.

3. Resolved to reviewed the model question paper, Blue print and structure of question paper and question bank for the respective Skill development course - I **ELECTRICAL APPLAINCES,** for 1st Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

4. Resolved to reviewed the allotment of Maximum marks, Qualifying marks, Instruction hours and credits allotted for the Skill development course - I **ELECTRICAL APPLAINCES,** for 1st Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

Maximum Marks	:50 M
Qualifying Marks	:20 M
Instruction hours per week	:02 M
Credits Allotted	:02 M

5. Resolved to reviewed the list of recommended text books and reference books which are listed at the end of the syllabi of the respective Skill development course - I **ELECTRICAL APPLAINCES,** for 1st Semester.

6. Discussed thoroughly and resolved the introduction of English medium in B.Sc. 1 Year - 1 Sem and 2 Sem. In pursuance to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.
7. Any other matter with the permission of chairman, board of studies.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

Skill Development Course

Title of the course: SOLAR ENERGY

AGENDA

1. To introduce the **SOLAR ENERGY** as skill development course - II for II Semester in 1st year B.A. / B.Com. / B.Sc. programmes under revised CBCS form the academic year 2020-21 onwards.

2. To ratify the syllabus for Skill development course - II for 2nd Semester in B.A./B.Com./B.Sc. programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

3. To ratify the model question paper, Blue print and structure of question paper for the Skill development course - II for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

4. To discuss and ratify the allotment of maximum marks, qualifying marks, instruction hours and credits allotted for the skill development course - II, **SOLAR ENERGY,** for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

5. To ratify the list of recommended test books and reference books which are listed at the end of the syllabi of the respective Skill development course - II **SOLAR ENERGY**

6. To approve the introduction of English medium in B.Sc. I Year - 1 Sem and 2 Sem. In purseence to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.

7. Any other matter with the permission of chairman, board of studies.

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF PHYSICS
BOARD OF STUDIES MEETING ON 10-09-2020 through ONLINE

Skill Development Course

Title of the course: SOLAR ENERGY

Minutes of Board of Studies in Physics meeting held on 15-11-2021 at the Department of Physics at 11.00AM

RESOLUTIONS

1. Resolved to ratified the Skill development course - II **SOLAR ENERGY,** for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption and implementation from the academic year 2020-21 onwards.

2. Resolved to ratified the syllabus of the Skill development course - II **SOLAR ENERGY,** for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS for adoption from the academic year 2020-21 onwards.

3. Resolved to ratified the model question paper, Blue print and structure of question paper and question bank for the respective Skill development course - II **SOLAR ENERGY,** for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

4. Resolved to ratified the allotment of Maximum marks, Qualifying marks, Instruction hours and credits allotted for the Skill development course - II **SOLAR ENERGY,** for II Semester in B.A/B.Com/B.Sc programmes under revised CBCS from the academic year 2020-21 onwards.

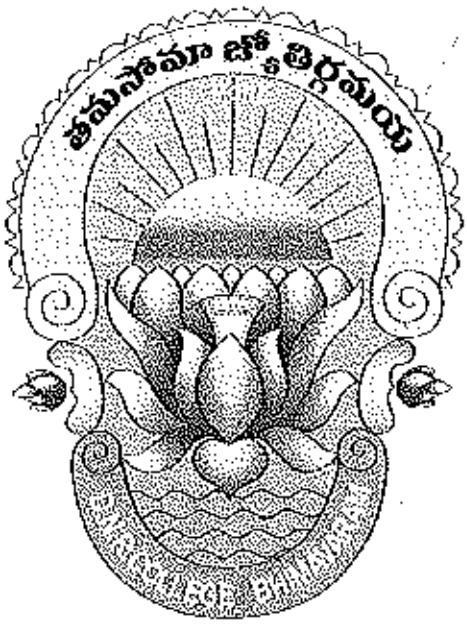
Maximum Marks	:50 M
Qualifying Marks	:20 M
Instruction hours per week	:02
Credits Allotted	:02

5. Resolved to ratified the list of recommended test books and reference books which are listed at the end of the syllabi of the respective Skill development course - I **SOLAR ENERGY,** for 1st Semester.

6. Discussed thoroughly and resolved the introduction of English medium in B.Sc. I Year - I Sem and 2 Sem. In pursuance to the G.O. M.S. No 49 dated 16-09-2021 issued by Govt. Of Andhra Pradesh.
7. Any other matter with the permission of chairman, board of studies.

BOARD OF STUDIES MEETING

15 NOVEMBER, 2021



DEPARTMENT OF MICROBIOLOGY

D.N.R.COLLGE (AUTONOMOUS)

BHIMAVARAM – 534 202

DNRCOLLEGE (AUTONOMOUS): BHIMAVARAM

Department of Geography

Board of studies meeting in the department of Geography on 15-11-2021.

Minutes of Board of studies Meeting of Geography Department held on 15-11-2021. at 10A.M.

S.no	Name	Members	Signatures
1.	Sri. K.Somayya HOD of Geography D.N.R.College (A), Bhimavaram	Chairman	K. Somayya
2.	Smt K.Yuva Priya Lecturer in Geography D.N.R.College(A) Bhimavaram 967649265 priyaravigolla102@gmail.com	Member	K.Y.Priya
3.	Dr. Sri G. BhaskarRao HOD of Geography S.M.B.T.A.V.&S.N.Degreecollege veeravasaram, 9440124188 gbhaskar1962@gmail.com	University Nominee	Through online
4.	Sri.A.Suri babu HOD of Geography Govt ARTs College, Rajahmundry Ph: 9908942333 asbgeo0912@gcrjy.ac.in	Subject Expert	
5.	Sri K.V.Ramana HOD of Geography K.G.R.L D.COLLEGE Bhimavaram. Ph:9491187927 Ramana2399@gmailcom	Subject Expert	
6.	Sri. K.C.S.V.Ramana HoD of Geography V.N.College Narasapur. 8985924289 kesvramanakoppineedi@gmail.co	Special Invitee.	
7.	Smt. K.Ganga Bhavani Lecturer in Geography Govt ARTs College 6302231416	Alumnimember	
8.	G. Jaya Prasad III B.A (G.H.T)	Student representative	G. Jaya Prasad

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF GEOGRAPHY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

AGENDA

Subject No.1: To approve the syllabi for 3rd and 4th Semester course of B.A (Geography) in papers III , IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Subject No.2: To approve the structure of the question papers, model question papers for B.A(Geography) course of Paper III , IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No. 3: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in B.A(Geography) course, of papers III , IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No. 4: To approve the break-up of the Internal assessment test marks 25 in 3rd and 4 th semester B.A(Geography) course of papers III , IV & V for adoption and implementation under Revised Choice Based Credit system.

Subject No .5: To approve the qualifying marks in B.A(Geography) Course for papers III , IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No. 6: To review the existing syllabi, model question papers of both theory and practicals of,V and VI semester B.A(Geography) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject No.7 : To approve the model question papers modified to two tier system for the Semester V,VI B.A Geography course in papers 3A,4A,3B,4B,5B,6B.

Subject No.8: To ratify the existing syllabi, model question papers of both theory and practicals of, I and II semester B.A(Geography) course in paper-I, paper-2.

Subject No.9: To ratify the structure of the question papers, model question papers for B.A(Geography) course of Paper I , II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21onwards.

Subject No. 10: To ratify the syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in B.A(Geography) course, of papers I , II for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21onwards.

Subject No11: To ratify the break-up of the Internal assessment test marks 25 in 1st and 2nd semester B:A(Geography) course of papers I,II for adoption and implementation under Revised Choice Based Credit system.

Subject No 12: To approve the introduction of English Medium in B.A course in pursuance to G.O.Ms. No.49 dt., 16-09-2021 issued by Govt., of Andhra Pradesh

Subject No 13: To ratify the qualifying marks in B.A(Geography) Course for papers I; II of 1st and 2nd semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No. 14: To procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resoureeful for both students and faculty members.

Subject No. 15: Any other matter with the permission of the chair.

K. Somayya.
Chairman
Board of studies of Geography
D.N.R.College (A)
Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF ELECTRONICS
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

RESOLUTIONS

Resolution No 1: It is Unanimously resolved to approve the syllabi for 3rd and 4 th Semester course of B.A(Geography) in papers III , IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Resolution No 2: It is Unanimously resolved to approve the structure of the question papers, model question papers for B.A(Geography) course of Paper III , IV & V with maximum marks 75 of 3rd and 4 th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Resolution No 3: It is Unanimously resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4 th semester end practical examinations in B.A(Geography) course, of papers III , IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

1. Written exam -35 marks,
2. Record/ field work-10 marks,
3. Viva voice -5 marks

Resolution No 4: It is Unanimously resolved to approve the break-up of the Internal assessment test marks 25 in 3rd and 4 th semester B.A(Geography) course of papers III , IV & V for adoption and implementation under Revised Choice Based Credit system.

1. Written exam -15 marks,
2. Record/ seminar/ field work/ assignment-5 marks,
3. Extracurricular activity -5 marks

Resolution No 5: It is Unanimously resolved to approve the qualifying marks in B.A(Geography) Course for papers III , IV & V of 3rd and 4 th semester end examinations (theory examination 40 marks and practical examinations 20 marks)

Resolution No6: It is Unanimously resolved to reviewed the existing syllabi, model question papers of both theory and practicals of, V and VI semester B.A(Geography) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution No7: It is Unanimously resolved to reviewed model question papers modified to two tier system for the Semester V,VI B.A Geography course in papers 3A,4A,3B,4B,5B,6B.

Resolution No8: It is Unanimously resolved to ratified the existing syllabi, model question papers of both theory and practical's of I and II semester B.A(Geography) course in paper-1, paper-2.

Resolution No 9: It is Unanimously resolved to ratified the structure of the question papers, model question papers for B.A(Geography) course of Paper I , II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21onwards.

Resolution No10: It is Unanimously resolved to ratified the syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in B.A(Geography) course, of papers I , II for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21onwards.

1. Written exam -35 marks,
2. Record/ field work-10 marks,
3. Viva voice -5 marks

Resolution No11: It is Unanimously resolved to ratified the break-up of the Internal assessment test marks 25 in 1st and 2nd semester B.A(Geography) course of papers I , II for adoption and implementation under Revised Choice Based Credit system.

1. Written exam -15 marks,
2. Record/ seminar/ field work/ assignment-5 marks,
3. Extracurricular activity -5 marks

Resolugion No12: Resolved to approve the introduction of English Medium in B.A course in pursuance to the G.O.Ms No.49 dt., 16-09-2021 issued by Govt., of Andhra Pradesh

ResolutionNo13: It is Unanimously resolved to ratified the qualifying marks in B.A(Geography) Course for papers I, II of 1st and 2nd semester end examinations (theory examination 40 marks and practical examinations 20 marks)

Resolution No 14: Resolved to procure latest editions of text books, reference books ,journals , e- journals for department library and central library to upgrade laboratories by purchasing advanced equipments in need with practical curriculum to be ingenious for both students and faculty members.

Resolution No 15: Nil

K. Somayya.
Chairman

Board of studies of Geography
D.N.R.College (A)
Bhimavaram

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

I B.A. Degree Examination at the end of Ist Semester

Subject : Geography

Paper-I Physical Geography

(w.e.f. 2020 - 2021)

Syllabus for Ist Semester

Unit - I.

Definition, Nature, Scope and Physical Geography, Classification of rocks. Earth Movements; organic, epeirogenic, earth quakes and volcanoes. Wegner's theory of continental drift and plate tectonic theory.

Unit - II.

Weathering: causes and its types. Mass - movements; causes, its types and impacts. Concept of cycle of eerosion; cycle of erosion by W.M. Davis. Process of Wind, River, Underground water, Glaciers and Sea waves.

Unit - III.

Weather and Climate; Origin, composition and structure of atmosphere. Insolation, Horizontal and vertical distribution of temperature, inversion of temperature. Atmospheric pressure - measurement and distribution, pressure belts, planetary winds, Monsoon and Local winds.

Unit - IV.

Humidity - measurement and variables, evaporation, condensation, precipitation forms and types and distribution. Climate classification by Koppen.

Unit - V.

Configuration of oceanic floors, Temperature and Salinity of ocean, Land and Water distribution. Tides waves and ocean currents.

References:

1. Sharma H.S. perspective in Geomorphology, Concept, New Delhi 1980.
2. Singh Savinder, Geomoprhology, Prayag Publication, Allahabad 1998.
3. Sing Savinder, Physical Geography Prayag Publication, Allahabad 1998.
4. Sparks B.W. Geomorphology, Jojngman, London, 1960.
5. Thornbury W.D. 1969 Principles of Geomorphology, New York, John Wiley & Sons.
6. Barry, RG and Chorley R.J., Atmosphere, Weather and Climate, Routledge, 1998.
7. Critchfield, H., General Climatology, Prenticc-Hall of India, 2002.
8. King, C. Oceanography for Geographers, Edward Arnold, London, 1975.
9. Trewartha, GT: An Introduction to Climate, Mc-Graw Hill, New York, 1981.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

I B.A. Degree Examination at the end of Ist Semester

Subject : Geography

Paper-I Physical Geography

(w.e.f. 2020 - 2021)

Model Question Paper

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	Physical geography	భౌతిక భూగోళశాస్త్రం
2.	Professor Wegener	ఆచార్య వెజినర్
3.	Causes of earthquakes	భూకంపాలకు గల కారణాలు
4.	Metamorphic rocks	రూపాంతర శిలలు
5.	Second part of river	నది మధ్యభాగం
6.	Mushroom rocks	కుక్క గొడుగు శిలలు
7.	Cirques	హిమగర్తాలు
8.	Waves of earthquake	భూకంప తరంగాలు

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Define Rock. Explain the characterstics and types of rocks.
   శిల అనగా తెల్పి, వాటిలోని రకములు మరియు లక్షణాలను వివరించండి.
10. Discuss the types of distribution of volcanoes.
    అగ్ని పర్వతాలు రకములను తెల్పి, వాటి విస్తరణ వ్రాయండి.
11. Define weathering, explain the causes of weathering.
    శిలా శైథిల్యాన్ని నిర్వచించి, వాటికి గల కారణాలను వివరించండి.
12. Explain the important stages of river.
    నది యొక్క ప్రధాన దశలను పేర్కొనండి.
13. Write about the Wind Erosion.
    పవన క్రమక్షయం గురించి వ్రాయండి.
14. Write about the underground waves erosional land forms.
    అంతర్భూజల క్రమక్షయంలో ఏర్పడే ప్రధాన భూస్వరూపాలను గురించి వ్రాయండి.
15. Write about the erosinal system of glaciers.
    హిమానీ నదాల క్రమక్షయం గురించి వ్రాయండి.
16. Explain the first stage of river erosinal land forms.
    నది ఎగువ భాగంలో ఏర్పడే ప్రధాన భూస్వరూపాలు గురించి వ్రాయండి.
17. How to form of stalagtite, stalagmite discuss.
    స్టాలగ్‌టైట్, స్టాలగ్‌మైట్ ఏవిధంగా ఏర్పడునో వివరించండి.
18. Write about the geological time scale.
    భూవిజ్ఞాన కాల పట్టిక గురించి వ్రాయండి.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
I B.A. Degree Examination at the end of Ist Semester
Subject : Geography
Paper-I Physical Geography
(w.e.f. 2020 - 2021)
Practical: Study of Weather and Climate

Weather Reports - Definition and applications

Use of Weather Instruments - Wet & Dry Bulb Thermometer, Barometer

Wind - Vane, Rain Gauge.

Study of Weather Symbols and Interpretation of Indian Daily Weather Reports of January & July.

Weather Forecasting.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
I B.A. Degree Examination at the end of Ist Semester
Subject : Geography
Paper-I Physical Geography
(w.e.f. 2020 - 2021)
Practical: Study of Weather and Climate
Model Question Paper.

Time: 3Hrs.] **[Max. Marks: 50**

I.	Draw any two of weather instrument	**2 x 15 = 30M.**
1.	Wet and Dry Bulb	
2.	Rain Guage	
3.	Wind - Vane	
II.	Draw the any **TEN** weather symbols	**10M.**
III.	Record.	**10M.**

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

I-B.A. Degree Examination at the end of IInd Semester

Subject:- GEOGRAPHY

Paper - II - Human Geography

Syllabus for Second Semester

Unit - I.

Nature scope and Historical development of Human Geography. Division of Mankind: Spatial distribution of race and tribes of India.

Unit - II.

Human adaptation to the environment (i) Cold region - Eskimo (ii) Hot region Bushman (iii) Plateau - Gonds (iv) Mountains - Gujjars.

Unit - III.

Meaning, nature and components of resources; Classification of resources - renewal and non-renewable; biotic and abiotic, recyclable and non recyclable.

Unit - IV.

Distribution and density of world population, population growth, fertility and mortality patterns. Concept of over, under and optimum population; Population theories: Malthus.

Unit - V.

Rural settlements: Meaning, classification and types. Urban settlements: Origin, classification. Population pressure, resource use and environment degradation.

Suggested Readings:-

1. Alexander, John. W. Economic Georaphy, Prentice Hall of India Ltd., New Delhi, 1988.
2. Carr, M. Patterns: Process and Change in Human Geography, McMillan Education, London, 1987.
3. Chandna, R.C. : A Geography of Population: Concepts, Determinants and Patterns, Kalyani Publishers, New Delhi, 1986.
4. DeBlij, H.J. : Human Geography, Cluture, Society and Space, John Wiley, New York, 1996.
5. Fellman, J.L. : Human Geography - Landscapes of Human Activities, Brown and Benchman Pub., USA, 1997.
6. McBride, P.J. Human Geography; Systems Patterns and Change, Nelson. UK and Canada, 1996.
7. Michael, Can: New Patterns : Process and Change in Human Geography, Nelson, 1996.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

I-B.A. Degree Examination at the end of IInd Semester

Subject:- GEOGRAPHY

Paper - II - Human Geography

Model Question Paper.

Time: 3Hrs.] **[Max. Marks: 75**

Section - A.

Answer any FIVE of the following questions: 5 x 5 = 25M.

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	Primary activities	ప్రాధమిక వృత్తులు
2.	Effect of climate on human life	మానవ జీవనంపై శీతోష్ణస్థితి ప్రభావము
3.	Resources - Resistances	వనరులు – నిరోధకాలు
4.	Demographic cycle	డెమొగ్రాఫిక్ చక్రము
5.	Low density areas	అల్ప జన సాంద్రతా ప్రాంతాలు
6.	Classification of towns	పట్టణాలు – వర్గీకరణ
7.	Consumable resources	తరిగిపోయే వనరులు
8.	Deforestation	అడవుల నిర్మూలన

Section - B.

Answer any FIVE of the following questions: 5 x 10 = 50M.

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Define Human Geography and explain its scope and importance.
మానవ భూగోళ శాస్త్రమును నిర్వచించి, ఆ శాస్త్రము యొక్క పరిధి, ప్రాముఖ్యతలను వివరింపుము.
10. What is Environment? Explain the influence of physical environment on human life.
పరిసరాలు అనగానేమి? మానవ జీవనంపై భౌతిక పరిసరాల ప్రభావమును వివరింపుము.
11. Discuss how to depend human life process on climate and physical environment?
మానవుని నిత్యజీవన విధానములో భౌతిక పర్యావరణము మరియు శీతోష్ణస్థితులపై ఏవిధంగా ఆధారపడి ఉన్నవో వివరింపుము.
12. Discuss the ancient race of Bush mens.
మానవ ఆదిమ జాతులలోని బుష్‌మెన్లును గూర్చి వ్రాయుము.
13. What are Natural Resources? How many types? How they are useful to economic life? సహజ వనరులు అనగానేమి? అవి ఎన్ని రకములు? మానవుని ఆర్థిక కార్యకలాపములలో అవి ఏవిధంగా సహాయకారులుగా ఉన్నవో వివరింపుము.
14. Discuss the world population growth.
ప్రపంచ జనాభా పెరుగుదలను గూర్చి వివరింపుము.
15. What is Urbanisation? Discuss various urban activities in the world.
నగరీకరణం అనగానేమి? ప్రపంచములోని వివిధ నగరీకరణ ప్రవృత్తులను గూర్చి విశదీకరింపుము.
16. Explain growth of population and write about different pollutions.
అధిక జనాభా వల్ల ఏర్పడే కాలుష్యాలను గూర్చి వ్రాయుము.
17. Give an account on deforestation and soil erosion due to explosion of population. జనాభా విస్ఫోటనం వల్ల సంభవించు అడవుల నిర్మూలన, మృత్తికాక్రమ క్షయమును గూర్చి వ్రాయుము.
18. Explain the theory of Malthus population?
మాల్థస్ జనాభా సిద్ధాంతమును గూర్చి వ్రాయుము.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

I-B.A. Degree Examination at the end of IInd Semester

Subject:- GEOGRAPHY

Paper - II - Human Geography

Practical Syllabus for Second Semester

1. Conventional signs.
2. Representation of Topographical features by contours

   Slopes (concave, convex, undulating and terraced)

   Valleys (V shaped, U shaped, Gorge - Re - entrant)

   Ridges (Conical Hill, Volcanic Hill, Plateau, Escarpment)

   Complex features (Waterfall, see cliff, Overhanging clips Tiord coast)

D.N.R. COLLEGE (A), Bhimavaram

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I-B.A. Degree Examination at the end of IInd Semester

Subject:- GEOGRAPHY

Paper - II - Human Geography

MODEL QUESTION PAPER (Sem-end. Exam)

Time: 3Hrs.] **[Max. Marks: 50**

I. Draw any **TEN** conventional symbols **10 x 1 = 10M.**

II. Draw the below topographical features by contours. **30M.**

a) "V" shapped valley b) Conical hill c) Cliff d) pleatue

e) Ridge f) Escarpment g) Concave h) Convex

i) "U" shaped valley j) Volcanic hill

III. Record **10M.**

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IIIrd Semester

Subject : Geography

Paper-III Economic Geography

(w.e.f. 2020 - 2021)

Syllabus for Third Semester

Unit - I.

Nature, Scope and relationship of economic geography with economics and other branches of social sciences. Classification of economic activities.

Unit - II.

Factors affecting location of economic activity with special reference to agriculture Vonthunen Theory. We bar's industrial theory.

Unit - III.

Spatial distribution of food (rice and wheat), commercial (cotton and sugarcane) and plantation crops (tea, rubber and coffee). Ferrous and non-ferrous resources, distribution and production of coal, iron ore, petroleum and natural gas.

Unit - IV.

Classification of Industries, world distribution and production of iron and steel and textile industry.

Unit - V.

Transport, communication and trade: Land and air transport, recent trends in International Trade.

Suggested Readings:

1. Hartshorne TN and Alexander JW. 1988. Economic Geography, Prentice Hall, New Delhi.
2. Jones CF and Darkenwald GG. 1975. Economic Geography, Mc Millan Company, New York.
3. Thomas, RS 1962. The Geography of Economic Activities. Mc Graw Hill, New York.
4. Wheeler J et Al. 1995. Economic Geography. John Wiley, New York.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IIIrd Semester

Subject : Geography

Paper-III Economic Geography

(w.e.f. 2020 - 2021)

MODEL PAPER

Time: 3Hrs.] **[Max.Marks: 75**

Part - I.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Primary activities ప్రాథమిక వృత్తులు
2. Impact of economic activities about environment పరిసరాలపై ఆర్థిక వృత్తుల ప్రభావం
3. Conservation of resources వనరుల పరిరక్షణ
4. Rubber plantation రబ్బరు తోటల పెంపకం
5. Geographical conditions of wheat crop గోధుమ పంట విస్తరణకు కావల్సిన భౌగోళిక అంశాలు
6. Indian railways భారతీయ రైల్వేలు
7. Favourable conditions of cotton crop ప్రత్తి పంటకు కావల్సిన అనుకూల పరిస్థితులు
8. Deposits of Pertroleum oil పెట్రోలియం నిక్షేపాలు

Part - II.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Write about the objectivities and methods of studies in Economic Geography.
ఆర్థిక భూగోళ శాస్త్రం యొక్క లక్ష్యాలు మరియు అధ్యయన పద్ధతులను వ్రాయండి.
10. Explain the uses of natural resources? Write about conservation.
సహజ వనరుల ఉపయోగములు తెల్పి, వాటి పరిరక్షణ గూర్చి వివరించండి.
11. Write about the primary activities.
ప్రాథమిక వృత్తులను గురించి క్లుప్తంగా వివరించండి.
12. Give an account of geographical features of paddy crop.
వరి పంట విస్తరణపై ఒక భౌగోళిక వ్యాఖ్య వ్రాయండి.
13. Explain different types of coal, write about the production of the coal.
బొగ్గులోని రకములను తెల్పి, దాని యొక్క ఉత్పత్తిని గురించి తెల్పండి.
14. Give an account on favourable conditions wheat crop and production.
గోధుమ పంటకు కావల్సిన భౌగోళిక పరిస్థితులు మరియు దాని ఉత్పత్తిని గురించి తెల్పండి.
15. Write an essay on different industrial zones.
ప్రధాన పారిశ్రామిక ప్రాంతాలను గూర్చి వివరించండి.
16. Write about the air transportation in the world.
ప్రపంచంలోని వాయు రవాణా గురించి వ్రాయండి.
17. Write an essay on road ways in the world.
ప్రపంచంలోని రోడ్డు మార్గాల విస్తరణ గురించి వ్రాయండి.
18. Write an essay on international trade.
అంతర్జాతీయ వ్యాపారం గురించి వివరించండి.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination at the end of IIIrd Semester
Subject : Geography
Paper-III Economic Geography
(w.e.f. 2020 - 2021)
Practical Syllabus : Surveying and Socio-economic Village Survey.

1. Chain Survey
2. Plain Table Survey
3. Prismatic Compass Survey
4. Socio - Economic Village Survey.

D.N.R, COLLEGE (A), Bhimavaram

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II B.A. Degree Examination at the end of IIIrd Semester
Subject : Geography
Paper-III Economic Geography
(w.e.f. 2020 - 2021)
Practical Syllabus : Surveying and Socio-economic Village Survey.
Model Question Paper.

Time: 3Hrs.] **[Max. Marks: 50**

I. Answer any one of the following: **1 x 20 = 20M.**

1. Chain Survey

2. Prismatic compass Survey

II. Viva voice on Village Survey. **20M.**

III. Record. **10M.**

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IVth Semester

Subject : Geography

Paper-IV - Geography of India

(w.e.f. 2020 - 2021)

Syllabus for IVth Semester

Unit - I.

India: Location, relief structure and drainage sytems. Climate, soils, natural vegetation.

Unit - II.

Population: distribution, density, growth and composition. Migration, human settlement types and urbanization.

Unit - III.

Land resources, irrigation, Green revolution and problems of Indian agriculture, Energy and mineral resources; coal, petroleum, hydroelectricity and nuclear energy, iron ore, manganese and mica.

Unit - IV.

Industries - iron and steel, cotton textile, sugar and petrochemical industries; and industrial regions of India.

Unit - V.

Modes of transport and communication, international trade changing pattern of export and import.

Suggested Readings:

1. Deshpande, C D: India - A Regional Interpretation, Northern Book Depot, New Delhi, 1992.
2. Sing, Gopal: Geography of India, Atma Ram and Sons, 2006.
3. Shafi, M: Geography of South Asia, McMillian and company, Calcutta, 2000.
4. Singh, R L (ed): India A Regional Geography, National Geographical Society, India, Varanasi, 1971.
5. Spate, D H K and ATA Learmonth: Indian and Pakistan - Land, People and Economy, Methnen and Company, London, 1967.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IVth Semester

Subject : Geography

Paper-IV - Geography of India

(w.e.f. 2020 - 2021)

Model Question Paper

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	Location in India	భారతదేశ ఉనికి
2.	Alluvial soils	ఒండ్రు మట్టి నేలలు
3.	Density	జనసాంద్రత
4.	Sex ratio	స్త్రీ పురుష నిష్పత్తి
5.	Green revolution	హరిత విప్లవం
6.	Canals	కాలువలు
7.	TISCO	టిస్కో
8.	Distribution of railways	రైలు మార్గాల విస్తరణ

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Write about the physical feature divisions of India. Explain any one of them?
భారతదేశాన్ని ఎన్ని భూ భౌతిక మండలాలుగా విభజించారో తెల్పి, దానిలో ఏదేని ఒక దానిని గూర్చి క్లుప్తంగా వ్రాయండి.
10. Discuss various types of soils and explain them in detail.
భారతదేశంలోని వివిధ రకాల మృత్తికాలను గూర్చి వ్రాయండి.
11. Write a geographical essay on drainage system.
భారతదేశంలోని నదీ వ్యవస్థపై భౌగోళిక వ్యాఖ్య వ్రాయండి.
12. Write a geographical essay on distribution of population in India.
భారతదేశంలోని జనాభాపై భౌగోళిక వ్యాఖ్య వ్రాయండి.
13. Write a coal deposits in India.
భారతదేశంలోని బొగ్గు నిక్షేపాలను గూర్చి వ్రాయండి.
14. Describe iron and steel industry in India.
భారతదేశంలోని ఇనుము - ఉక్కు పరిశ్రమను గూర్చి వ్రాయండి.
15. Explain the cotton textile industry in India.
భారతదేశంలోని నూలు వస్త్ర పరిశ్రమను గూర్చి వ్రాయండి.
16. Explain major regional mineral distribution of India, and write about the iron ore.
భారతదేశంలోని ప్రధాన ఖనిజ విస్తరణ ప్రాంతాలను తెల్పి, ఇనుపు ఖనిజ విస్తరణ గూర్చి వ్రాయండి.
17. Discuss about industrial regions in India.
భారతదేశంలోని పారిశ్రామిక ప్రాంతాలను గురించి వ్రాయండి.
18. Write a geographical essay on Indian transport sytem.
భారతదేశంలోని రవాణా వ్యవస్థపై భౌగోళిక వ్యాఖ్య వ్రాయండి.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination at the end of IVth Semester
Subject : Geography
Paper-IV - Geography of India
(w.e.f. 2020 - 2021)
Practical : Cartographic Techniques Syllabus

Content:
Map - Definition, Scale of map, applications.

Map Projections - classification, plar, zenithal, stereographic, Bonne's and Mercator's projections

Topographic Profiles

Toposheets - Interpretation, slope analysis

Interpretation of Weather maps (one summer, winter and monsoon seasons).

D.N.R. COLLEGE (A), Bhimavaram

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II B.A. Degree Examination at the end of IVth Semester
Subject : Geography
Paper-IV - Geography of India
(w.e.f. 2020 - 2021)
Practical : Cartographic Techniques Syllabus

Model Qeustion Paper

Time: 3Hrs.] **[Max. Marks: 50**

I. Answer the following questions: **20M.**

1. Definition scale of map (or) Draw the one standard parallel projection.

II. Draw the bone projection (or) Interpretation of toposheets. **20M.**

III. Record **10M.**

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IVth Semester

Subject : Geography

Paper-V - Introduction to Remote Sensing & G.I.S.

(w.e.f. 2020 - 2021)

Syllabus for ~~Fifth~~ FOURTH Semester

Unit - I.

Introdcution to Remote Sensing, Definition, Basis of remote sending. Electromagnetic spectrum, stages in remote sensing. Platforms of Remote Sensing, type of satellites. Types of Sensors.

Unit - II.

Introduction to Aerial Photographs: their advantages and types. Remote sensing in India Developments. Applications of Remote sensing techniques in Geographical aspects.

Unit - III.

Introduction to Geographical Information System: Definition, Purpose, Advantages. History of GIS. Software and hardware requirements. Classification of Software and Hardware.

Unit - IV.

GIS data types: Spatial and attribute data-Raster and Vector data structure. GPS, Definition, GPS satellites and its applications.

Unit - V.

Remote sensing and GIS integration. Application of GIS in various fields of geography.

Suggested Readings:-

1. John R. Jensen 2009. Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (Indian Edition) New Delhi.
2. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi.
3. Lillesand and R.W. Kiefer, 2005. Remote Sensing and Image Interpretation, John Wiley and Sons.
4. Pritvish Nag, and M.Kudrat 1998. Digital Remote Sensing, Concept Publishing Company, New Delhi.
5. M.Anji Reddy 2009. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
6. Telugu Academy 2011. B.A./B.Sc., Sudura Grahaka Sastram Bowgolika Samachara Vyavasta.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

II B.A. Degree Examination at the end of IVth Semester

Subject : Geography

Paper-V - Introduction to Remote Sensing & G.I.S.

(w.e.f. 2020 - 2021)

Model Question Paper

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	Advantages of remote sensing.	దూరగ్రాహక ప్రక్రియ యొక్క ప్రయోజనాలు
2.	Geostationery satellites.	భూస్థిరకక్ష్య ఉపగ్రహాలు
3.	Digital cameras.	డిజిటల్ కెమేరాలు
4.	Types of aerialphotographs.	ఆకాశఛాయా చిత్రాల రకాలు
5.	GIS parts	జి.ఐ.యస్. విభాగాలు
6.	Data storage	డేటా స్టోరేజ్
7.	GPS	జి.పి.యస్.
8.	Data conversion	డేటా కన్వర్షన్

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Define Remote Sensing, write about the electro magnetic spectrum in remote sensing
దూర గ్రాహక ప్రక్రియ అనగానేమిటో నిర్వచించి, విద్యుదయస్కాంత వర్ణపటం గూర్చి వ్రాయండి.
10. Discuss about the sensors in Remote Sensing?
దూర గ్రాహక ప్రక్రియలోని గ్రాహకాలు గురించి వ్రాయండి.
11. Write about the different types of aerial cameras in remote sensing.
దూరగ్రాహక ప్రక్రియలోని వివిధ రకాల గగన కెమేరాలను గూర్చి వ్రాయుము.
12. Give an account on acrial photographs types and their advantages.
ఆకాశ ఛాయాగ్రహణంను నిర్వచించి, దాని యొక్క ప్రయోజనాలను తెల్పండి.
13. Write about the remote sensing applications in various fields.
వివిధ రంగాలలో సుదూర గ్రాహక ప్రక్రియ యొక్క అనువర్తితాలు గురించి వ్రాయండి.
14. Define, purpose advantages of Geographical Information System.
భౌగోళిక సమాచార వ్యవస్థసున నిర్వచించుము? మరియు దాని ప్రాముఖ్యత, ప్రయోజనములను గూర్చి వ్రాయుము.
15. Write about the requirements of Hardware components and Software components in GIS. భౌగోళిక సమాచా వ్యవస్థకు కావలసినటువంటి హార్డ్‌వేర్ మరియు సాఫ్ట్‌వేర్ విభాగాలను గూర్చి వ్రాయుము.
16. Write about the Raster and Vector data structure in G.I.S.
భౌగోళిక సమాచార వ్యవస్థలోని రెస్టార్ మరియు వెక్టార్ డేటాలను గూర్చి వ్రాయుము.
17. Explain the data base management system in Geographical Information System.
భౌగోళిక సమాచార వ్యవస్థసందలి దత్తాంశముల యాజమాన్య వ్యవస్థను గూర్చి వ్రాయుము.
18. Explain the Buffering method in Geographical Information System.
భౌగోళిక సమాచార వ్యవస్థలోని బఫరింగ్ గూర్చి వ్రాయండి.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination at the end of IVth Semester
Subject : Geography
Paper-V - Introduction to Remote Sensing & G.I.S.
(w.e.f. 2020 - 2021)
Practical Syllabus for IVth Semester

1. Remote Sensing and GIS: Definition and COmponents, Development, Platforms and Types.

2. Aerial Photography and Satellite Remote Sensing: Principles, Types and Geometry of Aerial.

   Photograph; Principles of Remote Sensing, EMR Interaction with Atmosphere and Earth Surface;

   Satellites (Landsat and IRS) and Sensors.

3. GIS Data Structures: Types (spatial and Non-spatial), Raster and Vector Data Structure

4. Image Processing (Digital and Manual) and Data Analysis: Pre-processing (Radiometric and Geometric Correction), Enhancement (Filtering); Classification (Supervised and Unsupervised), Geo-Referencing; Editing and Output; Overlays

5. Interpretation and Application of Remote Sensing and GIS: Land use / Land Cover, Urban Sprawl Analyasis; Forest Mointoring.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
II B.A. Degree Examination at the end of IVth Semester
Subject : Geography
Paper-V - Introduction to Remote Sensing & G.I.S.
(w.e.f. 2020 - 2021)
Practical Model Question Paper for IVth Semester

Time: 3Hrs.] **[Max. Marks: 50**

I. Answer the following Questions:

1.	Remote Sensing and GIS	(or)	Areal Photography	**1 x 15 = 15M.**
2.	GIS data structure types	(or)		**1 x 10 = 10M.**
	Raster and Vector Data Structure			
3.	Image Processing	(or)		**1 x 15 = 15M.**
	Interpretation and application of Remote sensing and GIS			
II.	Record			**10M.**

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of Vth Semester

Subject : Geography

Paper-IV - Introduction to Remote Sensing

(w.e.f. 2017 - 2018)

Syllabus for Fifth Semester

Unit - I.

Introduction to Remote Sensing, Definition, Basis of Remote sending, Electromagnetic spectrum, stages in remote sensing.

Unit - II.

Platforms of Remote Sensing, type of satellites, Types of Sensors.

Unit - III.

Types of Imageries and their application in various fields such as agriculture, environment and resource mapping.

Unit - IV.

Introduction to Aerial Photographs: their advantages and types .
Element of aerial Photo interpretation.

Unit - V.

Applications of Remote sensing techniques in Geographical aspects.

Suggested Readings:

1. John R. Jensen 2009. Remote Sensing of the Environment; An Earth Resource Perspective, Pearson Education, (Indian Edition) New Delhi.
2. Kumar Meenakshi 2001. Remote Sensing, NCERT, New Delhi.
3. Lillesand and R.W.Kiefer, 2005. Remote Sensing and Image Interpretation, John Wiley and Sons.
4. Pritvish Nag, and M.Kudrat 1998. Digital Remote Sensing, Concept Publishing Company, New Delhi.
5. M.Anji Reddy 2009. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
6. Telugu Academy 2011. B.A./B.Sc., Sudura GRahaka Sastram-Bowgolika Samachara Vyavasata.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of Vth Semester

Subject : Geography

Paper-IV - Introduction to Remote Sensing

(w.e.f. 2017 - 2018)

Model Question Paper

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Advantages of remote sensing. దూరగ్రాహక ప్రక్రియ యొక్క ప్రయోజనాలు
2. Geostationcry satellites. భూస్థిరకక్ష్య ఉపగ్రహాలు
3. Digital cameras. డిజిటల్ కెమేరాలు
4. Types of aerialphotographs. ఆకాశఛాయా చిత్రాల రకాలు
5. Electro Magnetic Radiation. విద్యుత్ అయస్కాంత వికిరణం
6. Platforms in space. అంతరిక్ష వేదికలు
7. Components of remote sensing. సుదూర గ్రాహక ప్రక్రియలోని భాగాలు
8. Spatial resolution. భూతల పృథక్కరణము

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Define Remote Sensing, write about the electro magnetic spectrum in remote sensing
దూర గ్రాహక ప్రక్రియ అనగానేమిటో నిర్వచించి, విద్యుదయస్కాంత వర్ణపటం గూర్చి వ్రాయండి.
10. Discuss about the sensors in Remote Sensing?
దూర గ్రాహక ప్రక్రియలోని గ్రాహకాలు గురించి వ్రాయండి.
11. Write about the different types of aerial cameras in remote sensing.
దూరగ్రాహక ప్రక్రియలోని వివిధ రకాల గగన కెమేరాలను గూర్చి వ్రాయుము.
12. Give an account on aerial photographs types and their advantages.
ఆకాశ ఛాయాగ్రహణంను నిర్వచించి, దాని యొక్క ప్రయోజనాలను తెల్పండి.
13. Write about the remote sensing applications in various fields.
వివిధ రంగాలలో సుదూర గ్రాహక ప్రక్రియ యొక్క అనుపర్తితాలు గురించి వ్రాయండి.
14. Discuss the history of remote sensing in India.
భారతదేశములోని దూర గ్రాహక ప్రక్రియ యొక్క చరిత్రను గూర్చి వ్రాయుము.
15. Write about the Electromagnetic radiation.
విద్యుత్ అయస్కాంత వికిరణం గూర్చి వ్రాయుము.
16. Discuss the plat forms in space in Remote sensing.
దూర గ్రాహక ప్రక్రియలోని అంతరిక్ష వేదికలను గూర్చి వ్రాయండి.
17. Write about the spatial resolution in Remote sensing.
దూర గ్రాహక ప్రక్రియలోని భూతల పృథక్కరణ గూర్చి వ్రాయుము.
18. Explain the Geostationery satellites in Remote sensing.
దూర గ్రాహక ప్రక్రియలోని భూస్థిర కక్ష్య ఉపగ్రహాలు గూర్చి వ్రాయండి.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-III-B - Introduction to Geographical Information System

(w.e.f. 2017 - 2018)

Syllabus for Sixth Semester

Unit - I.

Introduction to Geographical Information System: Definition, Purpose, Advantages. History of GIS.

Unit - II.

Software and hardware requirements.
Classification of Software and Hardware.

Unit-III.

Data capture/Input, Data Storage, Retrieval, analysis and output.
GIS data types: Spatial and attribute data-Ratster and Vector data structure.

Unit - IV.

GPS, Definition, GPS satellites and its applications.

Unit - V.

Remote sensing and GIS integration.
Application of GIS in various fields of geography.

Suggested Readings:

1. M.Anji Reddy 2008. Text book of Remote sensing and Geographical Information Systems, BS Publications, Hyderabad.
2. Telugu Academy 2011. B.A./B.Sc., Sudura GRahaka Sastram-Bowgolika Samachara Vyavasata.
3. Burrough P.A. 1986. Principles of Geographic Information Systems for Land Resources Assesment. Oxform University Press, New York.
4. Fraser Taylor D.R. 1991. Geographic Information system. Pergamon Press, Oxford.
5. Star J. and Estes 1994. Geographic Information Systems: An Introduction. Prentice Hall, Englewood, Cliff, New Jersey.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-III-B - Introduction to Geographical Information System

(w.e.f. 2017 - 2018)

Model Question Paper

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	GIS parts	జి.ఐ.యస్. విభాగాలు
2.	Data storage	డేటా స్టోరేజ్
3.	GPS	జి.పి.యస్.
4.	Data conversion	డేటా కన్వర్షన్
5.	Buffering.	బఫరింగ్
6.	Data editing	డేటా ఎడిటింగ్
7.	DMBS	దత్తాంశముల యాజమాన్య వ్యవస్థ
8.	Degitizing.	డిజిట్రైజింగ్

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Define, purpose advantages of Geographical Information System.
   భౌగోళిక సమాచార వ్యవస్థనున నిర్వచించుము? మరియు దాని ప్రాముఖ్యత, ప్రయోజనములను గూర్చి వ్రాయుము.
10. Write about the requirements of Hardware components and Software components in GIS.
    భౌగోళిక సమాచా వ్యవస్థకు కావలసినటువంటి హార్డ్‌వేర్ మరియు సాఫ్ట్‌వేర్ విభాగాలను గూర్చి వ్రాయుము.
11. Discuss about the different types of GIS data.
    భౌగోళిక సమాచార వ్యవస్థలోని వివిధ రకాల దత్తాంశ సేకరణ పద్ధతులన గూర్చి వ్రాయుము.
12. Give an account of GPS - Applications.
    గ్లోబల్ పొజిషనింగ్ సిస్టమ్‌లోని అనువర్తితాలను గూర్చి వ్రాయండి.
13. Define remote sensing and write about the relations of G.I.S and R.S.
    రిమోట్ సెన్సింగ్ ప్రక్రియను నిర్వచించి, జి.ఐ.యస్.తో దాని అనుబంధమును గూర్చి వ్రాయుము.
14. Write about the Raster and Vector data structure in G.I.S.
    భౌగోళిక సమాచార వ్యవస్థలోని రెష్టార్ మరియు వెక్టార్ డేటాలను గూర్చి వ్రాయుము.
15. Explain the data base management system in Geographical Information System.
    భౌగోళిక సమాచార వ్యవస్థనందలి దత్తాంశముల యాజమాన్య వ్యవస్థను గూర్చి వ్రాయుము.
16. Discuss the Hardware role in Geographical Information system.
    భౌగోళిక సమాచార వ్యవస్థనందలి హార్డ్‌వేర్ పాత్రను గూర్చి వ్రాయుము.
17. Write the importance in different fields in Geographical Information system.
    వివిధ రంగాలలో భౌగోళిక సమాచార వ్యవస్థ ప్రాధాన్యతను వివరించండి.
18. Explain the Buffering method in Geographical Information System.
    భౌగోళిక సమాచార వ్యసవ్థలోని బఫరింగ్ గూర్చి వ్రాయండి.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-IV-B Regional Geography of Asia (Cluster 1)

(w.e.f. 2017 - 2018 (CBCS))

Syllabus for Sixth Semester

Unit - I.

Location and relief of Asia
Climate of Asia

Unit - II.

Drainage system in Asia
Soils in Asia

Unit - III.

Natural Vegetation
Types of Agriculture Crops (Paddy Wheat)

Unit - IV.

Mineral wealth (Iron ore, Coal and Petroleum)
Industries (Ship building, Petro Chemicals)

Unit - V.

Population distribution in Asia
Transportation in Asia.

Sugested Readings:

1. Hartshorne TN and Alexander JW. 1988. Asian Geography, Prentice Hall, New Delhi.
2. Jones CF and Darkenwald GG. 1975. Asian Geography Mc. Millan Company, New York.
3. Thomas, RS 1962. The Geography of Asia. Mc Graw Hill, New York.
4. Wheeler J et al. 1995. Asian Geography. John Wiley, New York.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-IV-B Regional Geography of Asia (Cluster 1)

(w.e.f. 2017 - 2018 (CBCS))

MODEL PAPER

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1.	Wheat distribution in Asia.	ఆసియాలోని గోధుమ విస్తరణ
2.	High density areas in Asia.	అధిక జన సాంద్రతా ప్రాంతాలు
3.	Petrolem production in Asia.	ఆసియాలోని పెట్రోలియం ఉత్పత్తి ప్రాంతాలు
4.	Subsistence Agriculture in Aisa.	ఆసియాలోని జీవనాధార వ్యవసాయం
5.	Rubber in Malaysia.	మలేషియాలోని రబ్బరు
6.	Ship building industry in Asia.	ఆసియాలోని నౌకా నిర్మాణ పరిశ్రమ
7.	Evergreen forest	సతతహరిత అరణ్యములు
8.	High population areas in Asia.	ఆసియాలో అధిక జనాభా కేంద్రాలు

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Describe the major physical features of Asia.
ఆసియా యొక్క ప్రధాన భూస్వరూపాలను గూర్చి వ్రాయుము.
10. Explain the climatic conditions in Asia.
ఆసియా శీతోష్ణస్థితి గురించి వ్రాయండి.
11. Give an account of the natural vegetation of Asia.
ఆసియా యొక్క సహజ ఉద్భిజ్జ సంపదను గూర్చి విశదీకరించుము.
12. Name the major rivers of Asia and describe them briefly.
ఆసియా నందలి ముఖ్య నదులను పేర్కొని వాటి గురించి క్లుప్తముగా వ్రాయుము.
13. Causes growth of population in Asia.
ఆసియాలోని జనాభా పెరుగుదలకు గల కారణాలను గూర్చి వ్రాయుము.
14. Production and distribution of paddy crop in Asia.
ఆసియాలోని వరి పంట ఉత్పత్తి మరియు విస్తరణను గూర్చి వ్రాయుము.
15. Write about the main water ways in Asia.
ఆసియాలో ప్రధాన జలమార్గాలను గూర్చి వ్రాయండి.
16. Explain the distribution of Iron and Steal.
ఆసియాలో ఇనుము ఉక్కు విస్తరణను గూర్చి తెల్పండి.
17. Discuss the different types of soils in Asia.
ఆసియాలోని వివిధ రకాల నేలలను గూర్చి వ్రాయుము.
18. Write about the Northern plains in Asia.
ఆసియాలోని ఉత్తర పల్లపు మైదానాలు గూర్చి వ్రాయండి.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)
III B.A. Degree Examination at the end of VIth Semester
Subject : Geography
Paper-VB - South East Asia (Cluster 1)
(w.e.f. 2017 - 2018 (CBCS))
Syllabus for Sixth Semester

Unit - I.

Location and relief of South East Asia.
Climate of South East Asia.

Unit - II.

Vegetation of South East Asia.
Irrigation of South East Asia.

Unit - III.

Regional Geography of Thailand, Location, Relief.
Regional Geography of Indonesia, Location and Relief.
Regional Geography of Malaysia location, Relief.

Unit - IV.

Agricultural Crops in South East Asia.
Population in South East Asia.

Unit - V.

Mineral wealth (Iron ore, Coal and Petroleum) in South East Asia.
Industries, distribution in South East Asia.

Suggested Readings:

1. Hartshorne TN and Alexander JW. 1988. Asian Geography, Prentice Hall, New Delhi.
2. Jones CF and Darkenwald GG. 1975. Asian Geography, Mc Millan Company, New York.
3. Thomas, RS 1962. The Geography of Asia. MC Graw Hill, New York.
4. Wheeler J et Al. 1995. Asian Geography. John Wiley, New York.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-VB - South East Asia (Cluster 1)

(w.e.f. 2017 - 2018 (CBCS))

MODEL PAPER

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Ship building in Japan. జపాన్‌లోని నౌకా నిర్మాణ పరిశ్రమ
2. Automobile industry. ఆటోమొబైల్ పరిశ్రమ
3. Petroleum products. పెట్రోలియం ఉత్పత్తులు
4. Low density areas. అల్ప జన సాంద్రత ప్రాంతాలు
5. Plantation agriculture. తోట వ్యవసాయం
6. Geographical regions in Iran. ఇరాన్ భౌగోళిక పరిస్థితులు
7. Production of Rubber. రబ్బరు ఉత్పత్తి
8. Petroleum production countries. పెట్రోలియం ఉత్పత్తి చేయు దేశాలు

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Describe the major physical features of South East Asia.
   ఆగ్నేయ ఆసియా యొక్క ప్రధాన భౌతిక స్వరూపాలను గూర్చి వ్రాయుము.
10. Explain the climatic conditions in South East Asia.
    ఆగ్నేయ ఆసియాలోని శీతోష్ణస్థితి గురించి వ్రాయుము.
11. Write the major irrigation facilities of South East Asia.
    ఆగ్నేయ ఆసియా యందలి ముఖ్య నీటి పారుదల వసతుల వసతులు గురించి క్షుప్తముగా వ్రాయుము.
12. Discuss the location and physical features of Indonesia.
    ఇండోనేషియా యొక్క ఉనికి, నైసర్గిక స్వరూపాలను గూర్చి వ్రాయుము.
13. Explain the different types of agricultural practices in South East Asia.
    ఆగ్నేయ ఆసియా నందు అమలులోనున్న వివిధ వ్యవసాయ పద్ధతులను గూర్చి వ్రాయుము.
14. Discuss the causes growth of population in South East Asia.
    ఆగ్నేయ ఆసియాలో జనాభా పెరుగుదలకు గల కారణాలను గూర్చి వ్రాయుము.
15. Explain different types vegetation in South East Asia.
    ఆగ్నేయ ఆసియాలోని వివిధ రకాల వృక్ష సంపదను తెల్పండి.
16. Discuss the oron ore deposits in South East Asia.
    ఆగ్నేయ ఆసియాలోని ఇనుప ఖనిజ నిక్షేపాలను గూర్చి తెల్పండి.
17. Write about eh major Industries in South East Asia.
    ఆగ్నేయ ఆసియాలోని ప్రధాన పరిశ్రమలను గూర్చి వ్రాయండి.
18. Discuss the location physical features of Thailand Country.
    థాయ్‌లాండ్ దేశ భౌగోళిక ఉనికి పరిస్థితులను గూర్చి తెల్పండి.

D.N.R. COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-VI-B South West Asia (Cluster 1)

(w.e.f. 2017 - 2018 (CBCS))

Syllabus for Sixth Semester

Unit - I.

Location and relief of South West Asia.
Climate of South West Asia.

Unit - II.

Vegetation of South West Asia.
Agriculture Crops.

Unit - III.

Regional Geography of Iran, Location, Relief.
Regional Geography of Iraq, Location and Relief.
Regional Geography of Afghanistan location, Relief.

Unit - IV.

Irrigation facilities in South West Asia.
Population.

Unit - V.

Mineral wealth in South West Asia.
Oil resources in South West Asia.

Suggested Readings:

1. Hartshorne TN and Alexander JW. 1988. Asian Geography, Prentice Hall, New Delhi.
2. Jones CF and Darkenwald GG. 1975. Asian Geography, Mc Millan Company, New York.
3. Thomas, RS 1962. The Geography of Asia. MC Graw Hill, New York.
4. Wheeler J et Al. 1995. Asian Geography. John Wiley, New York.

D.N.R, COLLEGE (A), Bhimavaram

(Affiliated to Adikavi Nannaya University)

III B.A. Degree Examination at the end of VIth Semester

Subject : Geography

Paper-VI-B South West Asia (Cluster 1)

(w.e.f. 2017 - 2018 (CBCS))

MODEL PAPER

Time: 3Hrs.] **[Max.Marks: 75**

Section - A.

Answer any FIVE of the following Questions: **5 x 5 = 25M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

1. Wheat distribution. గోధుమ విస్తరణ
2. Low density areas. అల్పజన సాంద్రతా ప్రాంతాలు
3. Petroleum production areas. పెట్రోలియం ఉత్పత్తి ప్రాంతాలు
4. Soils in SEA. నైరుతి ఆసియాలోని నేలలు
5. Decan plateau. దక్కన్ పీఠభూమి
6. Tea production areas. తేయాకు ఉత్పత్తి ప్రాంతాలు
7. Coniferous forest. శృంగాకార అరణ్యాలు
8. Natural gas deposits. సహజ వాయు నిక్షేపాలు

Section - B.

Answer any FIVE of the following Questions: **5 x 10 = 50M.**

ఈ క్రింది వాటిలో ఏవైనా ఐదు ప్రశ్నలకు సమాధానములు వ్రాయుము.

9. Describe the major physical features of South West Asia.
   నైరుతి ఆసియా యొక్క ప్రధాన భూస్వరూపాలను గూర్చి వ్రాయుము.
10. Explain the cliamtic conditions in South West Asia.
    నైరుతి ఆసియా శీతోష్ణస్థితి గురించి వ్రాయండి.
11. Give an account of the natural vegetation of South West Asia.
    నైరుతి ఆసియా యొక్క సహజ ఉద్భిజ్జ సంపదను గూర్చి విశదీకరించుము.
12. Give a geographical account of Iraq.
    ఇరాక్ గురించి భౌగోళిక వ్యాఖ్య వ్రాయుము.
13. Causes growth of population in South West Asia.
    నైరుతి ఆసియా జనాభా పెరుగుదలకు గల కారణాలను గూర్చి వ్రాయుము.
14. Production and distribution of Petroleum products in South West Asia.
    నైరుతి ఆసియాలోని పెట్రోలు ఉత్పత్తి మరియు విస్తరణను గూర్చి వ్రాయుము.
15. Write about the commercial crops in South West Asia.
    నైఋతి ఆసియాలోని వాణిజ్య పంటలను గూర్చి వ్రాయండి.
16. Discuss the physical featurs in the country of Ireq.
    ఇరాక్ దేశపు భౌతిక ప్రదేశాలను గూర్చి వ్రాయండి.
17. Write about differents types of Irrigation in South West Asia.
    నైఋతి ఆసియాలోని వివిధ రకాల నీటి పారుదల పసతులను గూర్చి వ్రాయుము.
18. Write the physical features in South West Asia.
    ఆఫ్గనిస్తాన్ నైఋతి స్వరూపాలను గూర్చి వ్రాయండి.

D.N.R.COLLEGE (A) :: BHIMAVARAM

Board of Studies in Microbiology

Minutes of the meeting of the **Board of Studies in Microbiology** held on 15-11-2021 at 11.00AM Through Online.

S.NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	R.SAKUNTALA Lecturer in Microbiology D.N.R College(A) Bhimavaram	Chairperson	L. Sakuntala
2	Dr.K.ARUNA Assistant professor in Microbiology ASD Govt Degree college for WOMEN,KAKINADA kopuriarunadl@gmail.com 9182525872	UNIVERSITY NOMINEE	
3	Y.RUPALATHA HOD,Department of Microbiology S.R.S.D Mahila kalasala latharupa578@gmail.com Tanuku, west Godavari 7730902428	SUBJECT EXPERT	
4	SHAIK.KHAREEMUNISA Lecturer in Microbiology Sri Y.N college(A),Narsapur Karimunn28@gmail.com 8897482847	SUBJECT EXPERT	
5	B. MOUNIKA Lecturer in Microbiology, D.N.R College (A),Bhimavaram.	MEMBER	B. Mounika.
6	G.VANDANA Lecturer in Microbiology, D.N.R College (A),Bhimavaram. 7013551270	MEMBER	G. Vandana
7.	.M.SATYA SUMANJALI Lecturer in Microbiology, D.N.R College (A),Bhimavaram 6301634088	MEMBER	M. Satya Sumanjali
8.	R.UMAHARITHA P.G Microbiology,8790341949	ALUMNI MEMBER	
7	B.SATYAVANI III B.Sc MICROBIOLOGY(MB.C.CS) 9392465593 D.N.R COLLEGE (A)	STUDENT REPRESENTATIVE	B. Satya Vani

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF MICROBIOLOGY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

AGENDA

Subject No.1: To design and approve the syllabi for **3rd and 4 th** Semester course of B.Sc(Microbiology)in papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Subject No.2: To design and approve the structure of the question papers, model question papers for B.Sc(Microbiology) course of Paper **III , IV & V** with maximum marks 75 of **3rd and 4 th** semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No.3: To design and approve the syllabi, model question papers and break up of practical marks 50 of **3rd and 4 th** semester end practical examinations in B.Sc(Microbiology) course, of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No.4: To design and approve the break-up of the Internal assessment test marks 25 in **3rd and 4 th** semester B.Sc(Microbiology) course of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit system.

Subject No.5: To design and approve the qualifying marks in B.Sc(Microbiology) Course for papers **III , IV & V of 3rd and 4 th** semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No.6: To review the existing syllabi, model question papers of both theory and practicals of,**V and VI semester** B.Sc(Microbiology) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject No.7: To ratify the existing syllabi for **I and II semester** B.Sc(Microbiology) course of **paper-I, paper-II.**

Subject No.8: To ratify the structure of the question papers, model question papers for B.Sc(Microbiology) course of Paper **I , II** with maximum marks 75 of **1st and 2nd semester** end theory examination and abstract of question paper for internal assessment test with maximum marks 25.

Subject No. 9: To ratify the syllabi, model question papers and break up of practical marks 50 of **1st and 2nd** semester end practical examinations in B.Sc(Microbiology) course, of **papers I and II.**

Subject No. 10: To ratify the break-up of the Internal assessment test marks 25 in **1st and 2nd** semester B.Sc(Microbiology) course of **papers I and II.**

Subject No. 11: To approve the list of recommended text books and reference books which are listed at the end of syllabi of papers III, IV and V in B.Sc(Microbiology) course.

Subject No.12: To enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Subject No. 13: To procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resourceful for both students and faculty members.

Subject No. 14: Any other matter with the permission of the chairperson.

Chairperson
Board of studies of Microbiology
D.N.R.College (A)
Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF MICROBIOLOGY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE
RESOLUTIONS

Resolution No1: It is unanimously resolved to approve the syllabi for 3rd and 4 th Semester course of B.Sc(Microbiology)in papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Resolution No2: It is unanimously resolved to approve the structure of the question papers, model question papers for B.Sc(Microbiology) course of Paper **III , IV & V** with maximum marks 75 of **3rd and 4 th** semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Resolution No3: It is unanimously resolved to approve the syllabi, model question papers and break up of practical marks 50 of **3rd and 4 th** semester end practical examinations in B.Sc(Microbiology) course, of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

1. Written exam -30M
2. Spotters-10M
3. Record-5M
4. Viva Voice-5M

Resolution No4: It is unanimously resolved to approve the break-up of the Internal assessment test marks 25 in **3rd and 4 th** semester B.Sc(Microbiology) course of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit system.

1.Written exam-15marks
2.Record/seminar/assignment=5marks
3.Extracurricular activity-5marks

Resolution No5: It is unanimously resolved to approve the qualifying marks in B.Sc(Microbiology) Course for papers **III , IV & V of 3rd and 4 th** semester end examinations(Theory examination 40 marks and practical examinatios 20 marks)

Resolution No6: It is unanimously resolved to reviewed the existing syllabi, model question papers of both theory and practicals of,**V and VI semester** B.Sc(Microbiology) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution No.7: It is unanimously resolved the existing syllabi for **I and II semester** B.Sc(Microbiology) course of **paper-I, paper-II.**

Resolution No.8: : It is unanimously resolved the structure of the question papers, model question papers for B.Sc(Microbiology) course of Paper **I , II** with maximum marks 75 of **1st and 2nd semester** end theory examination and abstract of question paper for internal assessment test with maximum marks 25.

Resolution No. 9: It is unanimously resolved the syllabi, model question papers and break up of practical marks 50 of **1st and 2nd** semester end practical examinations in B.Sc(Microbiology) course, of **papers I and II.**

Resolution No. 10 It is unanimously resolved the break-up of the Internal assessment test marks 25 in **1st and 2nd** semester B.Sc(Microbiology) course of **papers I and II.**

Resolution No. 11: It is unanimously resolved the list of recommended text books and reference books which are listed at the end of syllabi of papers III, IV and V in B.Sc(Microbiology) course.

Resolution No.12: It is unanimously resolved the MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Resolution No. 13: It is unanimously resolved the procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resourceful for both students and faculty members.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Microbiology
Paper – I INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY
(W.e.f. 2020-2021 admitted Batch)

Hours/week-4
Credits-4

UNIT I:

History of Microbiology & Place of Microorganisms in the living world:
History of Microbiology in the context of contributions of Anton von Leeuwenhoek, Edward Jenner, Louis Pasteur, Robert Koch, Ivanowsky,Martinus Beijerinck and Sergei Winogradsky. Importance and applications of microbiology, Place of Microorganisms in the Living World Haeckel's three Kingdom concept, Whittaker's five kingdom concept, three domain concept of Carl Woese

UNIT II:

Prokaryotic microorganisms and Viruses: Ultra-structure of Prokaryotic cell- Cell Wall, Cell Membrane, Cytoplasm, Nucleoid, Plasmid, Inclusion Bodies, Flagella Pili, Capsule, Endospore General characteristics of Bacteria (Size, shape, arrangement, reproduction) General characteristics of Rickettsia, Mycoplasmas, Cyanobacteria, Archaea General characteristics of viruses, Cultivation of Viruses (in brief) Morphology, Structure and replication of TMV and Lambda Bacteriophage.

UNIT III:

Eukaryotic microorganisms: Fungi - Habitat, nutrition, vegetative structure and modes of reproduction; outline classification, Algae - Habitat, thallus organization, photosynthetic pigments, storage forms of food, reproduction., Protozoa – Habitat, cell structure, nutrition, locomotion, excretion, reproduction, encystment, outline classification.

UNIT IV:

Isolation and Culture of Bacteria and Fungi: Growth media- Natural, synthetic and semi synthetic media. Selective, Enrichment, and Differential media Pure culture techniques - dilution- plating, Streak-plate, Spread-plate, Pour-Plate and micromanipulator. Preservation of microbial cultures - sub culturing, overlaying cultures with mineral oils, lyophilization, sand cultures, storage at low temperature.

UNIT V:

Principles of Microscopy, Sterilization and Disinfection: Principles of microscopy - Bright field and Electron microscopy (SEM and TEM). Staining Techniques - Simple and Differential staining techniques (Gram staining, Sporestaining). Sterilization and disinfection techniques -- Physical methods - autoclave, hot- air oven, pressure cooker, laminar air flow, filter sterilization, Radiation methods - UV rays, Gamma rays. Chemical methods - alcohols, aldehydes, fumigants, phenols, halogens and hypochlorite's.

RECOMMENDED TEXT BOOKS:

1. Pelczar, M.J., Chan, E.C.S. and Kreig, N.R. (1993). Microbiology. 5th Edition, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Dube, R.C. and Maheswari, D.K. (2000) General Microbiology. S Chand, New Delhi. Edition), Himalaya Publishing House, Mumbai.
3. Power, C.B. and Daginawala, H.F. (1986). General Microbiology Vol I & II
4. Prescott, M.J., Harley, J.P. and Klein, D.A. (2012). Microbiology. 5th Edition, WCB McGrawHill, New York.
5. Reddy, S.M. and Reddy, S.R. (1998). Microbiology Practical Manual, 3 rd Edition, Sri Padmavathi Publications, Hyderabad.

REFERENCE BOOKS:

1. Singh, R.P. (2007). General Microbiology. Kalyani Publishers, New Delhi.
2. Stanier, R.Y., Adelberg, E.A. and Ingram, J.L. (1991). General Microbiology, 5th Ed., Prentice Hall of India Pvt. Ltd., New Delhi.
3. Microbiology Edited by Prescott
4. Jaya Babu (2006). Practical Manual on Microbial Metabolisms and General Microbiology. Kalyani Publishers, New Delhi.
5. Gopal Reddy *et al.,* Laboratory Experiments in Microbiology

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Microbiology
Paper – I INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : I B.Sc. (2020-21)

Paper : I

Title of the Paper : **INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-I Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	01	02	01	02	02

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Microbiology
Paper – 1 INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY
Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max marks :75m**

SECTION -A (Essay Type Questions)

Answer All questions. Draw labeled diagrams wherever necessary. **5x10=50M**

1. (A) Write the contributions of Louis Pasteur, Robert Koch ?
   (OR)
   (B) Write the contributions of Antonie van Leeuwenhoek, Edward Jenner, Iwanosky?

2. (A) Discuss the ultra structure of prokaryotes

   (OR)

   (B) write an essay on general characteristics of Bacteria

3. (A) write an essay on general characteristics ofProtozoa ?
   (OR)
   (B) Write an essay on outline classifieation of Fungi ?

4. (A) Define Growth media? Write about different types of Growth media?
   (OR)
   (B) Discuss briefly about Preservation of Microbial Cultures

5. (A) Explain the various staining techniques used to study microbial morphology?
   (OR)
   (B) Write an essay on Sterilization methods?

SECTION -B (Short Answer Type Question)

Answer any Five out of the following eight questions **5x5=25M**

6. Spontaneous generation theory
7. Reproduction of bacteria
8. Flagella
9. Asexual reproduction in Fungi
10. Selective media
11. Freeze drying
12. Gram staining
13. Spore staining

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Microbiology
Paper – I INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark: 15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Discuss briefly about Preservation of Microbial Cultures

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Flagella

3. Spore staining

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Microbiology
Paper – I INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY LAB
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

Hours/week-2 **Credits-1**

1. Microbiology Good Laboratory Practices and Biosafety.
2. Preparation of culture media for cultivation of bacteria- Nutrient broth & Nutrient agar
3. Preparation of culture media for cultivation of fungi – Sabourauds agar
4. Sterilization of medium using Autoclave
5. Sterilization of glassware using Hot Air Oven
6. Light compound microscope and its handling
7. Microscopic observation of bacteria (Gram +ve bacilli and cocci, Gram -ve bacilli), Algae and Fungi.
8. Simple staining
9. Gram's staining
10. Hanging-drop method& temporary wet mount (TWM) for observation of living microorganisms.
11. Isolation of pure cultures of bacteria by serial dilution and Streak/Spread/Pour Plate Method.
12. Preservation of bacterial cultures by Serial sub culturing & Slant Preparation with mineral oil overlay.
13. Observation of electron micrographs of bacterial cells

RECOMMENDED TEXT BOOKS:

1. Pelczar, M.J., Chan, E.C.S. and Kreig, N.R. (1993). Microbiology. 5th Edition, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
2. Dube, R.C. and Maheswari, D.K. (2000) General Microbiology. S Chand, New Delhi. Edition), Himalaya Publishing House, Mumbai.
3. Power, C.B. and Daginawala, H.F. (1986). General Microbiology Vol I & II
4. Prescott, M.J., Harley, J.P. and Klein, D.A. (2012). Microbiology. 5th Edition, WCB McGrawHill, New York.
5. Reddy, S.M. and Reddy, S.R. (1998). Microbiology Practical Manual, 3 rd Edition, Sri Padmavathi Publications, Hyderabad.
6. Singh, R.P. (2007). General Microbiology. Kalyani Publishers, New Delhi.
7. Stanier, R.Y., Adelberg, E.A. and Ingram, J.L. (1991). General Microbiology, 5th Ed., Prentice Hall of India Pvt. Ltd., New Delhi.
8. Microbiology Edited by Prescott
9. Jaya Babu (2006). Practical Manual on Microbial Metabolisms and General Microbiology. Kalyani Publishers, New Delhi.
10. Gopal Reddy *et al.,* Laboratory Experiments in Microbiology

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree Examination Semester – I

Subject – Microbiology

Paper – I INTRODUCTION TO MICROBIOLOGY AND MICROBIAL DIVERSITY LAB

(W.e.f. 2020-2021 admitted Batch)

MODEL QUESTION PAPER

SEMESTER END PRACTICAL EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

MAJOR EXPERIMENT **1x20=20M**

1. Write down principle, procedure, do Gram staining to given bacterial sample and report

MINOR EXPERIMENT **1X10=10M**

2. Write down principle, procedure and perform spread plate method

3. Identify the spotters **5x2=10M**

A.Autoclave

B.Alexander flemming

C.Inoculation loop

D.Cyanobacteria

E.Streak plate technique

4. Viva-voce **05M**

5. Record **05M**

Total Marks **50M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Microbiology
Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Biomolecules: General characters and outline classification of Carbohydrates (Monosaccharides- Glucose, Fructose, Ribose, Disaccharides- Sucrose, Lactose, Polysaccharides- Starch, glycogen, Cellulose) General characters and outline classification of fatty acids (Saturated & Unsaturated Fatty Acids) Lipids (Simple & complex lipids) General characteristics of Amino Acids and Proteins. Structure of Nucleic acids.

UNIT II:

Enzymes: Properties and classification of Enzymes. Biocatalysis- induced fit and lock and key models. Coenzymes and Cofactors. Inhibition of enzyme activity- competitive, noncompetitive, uncompetitive and allosteric. Factors effecting enzyme activity

UNIT III:

Analytical Techniques: Principle and applications of - Colorimetry Chromatography (paper, thin-layer, and column), Spectrophotometry (UV & visible), Centrifugation and Gel Electrophoresis (Agarose and SDS).

UNIT IV:

Microbial Nutrition and growth: Nutritional requirements of Microorganisms Nutritional groups of microorganisms- autotrophs, heterotrophs, lithotrophs, organotrophs, phototrophs, chemotrophs Microbial Growth- different phases of growth in batch cultures; Synchronous, continuous, biphasic growth. Factors influencing microbial growth,Methods for measuring microbial growth - Direct microscopy, viable count estimates, turbidometry-and biomass.

UNIT V :

Microbial metabolism: Aerobic respiration - Glycolysis, TCA cycle, ED Pathway, Electron transport Oxidative and substrate level phosphorylations. Anaerobic respiration (Nitrate and sulphate respiration) Fermentation- lacticacid and ethanol fermentations Outlines of oxygenic and anoxygenic photosynthesis in bacteria.

RECOMMENDED TEXT BOOKS:

1. Berg JM, Tymoczko JT. and Stryer L (2011) Biochemistry, W.H.Freeman and Company Caldwell, D.R. (1995). Microbial Physiology and Metabolism, W.C. Brown Publications,Iowa, USA.
2. Lehninger, A.L., Nelson, D.L. and Cox, M.M. (1993). Principles of Biochemistry, 2nd Edition, CBS Publishers and Distributors, New Delhi.
3. Sashidhara Rao, B. and Deshpande, V. (2007). Experimental Biochemistry: A student

Companion. I.K. International Pvt. Ltd.
4. Tymoczko JL, Berg JM and Stryer L (2012) Biochemistry: A short course, 2nd ed.,
5. W.H.Freeman
6. Voet,D. and Voet J.G (2004) Biochemistry 3rd edition, John Wiley and Sons
7. White, D. (1995). The Physiology and Biochemistry of Prokaryotes, Oxford UniversityPress, New York.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
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I B.Sc. Degree Examination Semester – II
Subject – Microbiology
Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year	:	I B.Sc. (2020-21)
Paper	:	II
Title of the Paper	:	**MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY**

Periods of working per week	:	4 hrs
Duration of exam	:	3hrs
Max Marks	:	75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	01	02	01

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree Examination Semester – II

Subject – Microbiology

Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. Max marks :75m

SECTION -A (Essay Type Questions)

Answer All questions. Draw labelled diagrams wherever necessary. 5x10=50M

1. (A) Write about classification of carbohydrates?

(OR)

(B) Write about general characteristics of aminoacids ?

2. (A) Describe about induced fit and lock & key model ?

(OR)

(B) What are the factors effecting enzyme activity

3. (A) Write about the principle and applications of UV- visible spectrophotometry

(OR)

(B) Define centrifugation? Write the types of centrifugation?

4. (A) Write about nutritional groups of microorganisms

(OR)

(B) How microorganisms are classified based on mode of nutrition?

5. (A) Write about electron transport chain ?

(OR)

(B) Describe about TCA cycle

SECTION -B (Short Answer Type Question)

Answer any five out of the following eight questions 5x5=25M

6 Simple lipids

7. Disaccharides

8. Coenzyme

9. Substrate

10. Colorimeter

11. Turbidometry

12. Heterotrophs

13. Substrate level phosphorylation

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Microbiology
Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Write about electron transport chain?

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Disaccharides

3. Heterotrophs

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Microbiology
Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY LAB
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

List of Experiments:

1. Qualitative Analysis of Carbohydrates.
2. Qualitative Analysis of Aminoacids.
3. Colorimetric estimation of proteins by Biuret / Lowry method.
4. Separation of components of a given mixture using a laboratory scale centrifuge.
5. Separation of mixtures by paper / thin layer chromatography.
6. Demonstration of column packing in any form of column chromatography.
7. Effectoftemperature/pH / Salt concentration on bacterial growth
8. Demonstration of electrophoretic technique
9. Study and plot the growth curve of E. coli by turbidometric and Standard Plate Count methods

RECOMMENDED TEXT BOOKS &REFERENCE BOOKS:

1. Berg JM, Tymoczko JL and Stryer L (2011) Biochemistry, W.H.Freeman and Company Caldwell, D.R. (1995). Microbial Physiology and Metabolism, W.C. Brown Publications,Iowa, USA.
2. Lehninger, A.L., Nelson, D.L. and Cox, M.M. (1993). Principles of Biochemistry, 2nd Edition, CBS Publishers and Distributors, New Delhi.
3. Sashidhara Rao, B. and Deshpande, V. (2007). Experimental Biochemistry: A student Companion. I.K. International Pvt. Ltd.
4. Tymoczko JL, Berg JM and Stryer L (2012) Biochemistry: A short course, 2nd ed.,
5. W.H.Freeman
6. Voet,D. and Voet J.G (2004) Biochemistry 3rd edition, John Wiley and Sons
7. White, D. (1995). The Physiology and Biochemistry of Prokaryotes, Oxford UniversityPress, New York.

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
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I B.Sc. Degree Examination Semester – II
Subject – Microbiology
Paper – II MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY LAB
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END PRACTICAL EXAMINATION

MAJOR EXPERIMENT **1x20=20M**

1. Estimate the amount of protein present in given test sample by biuret method and write down principle, procedure and report.

MINOR EXPERIMENT **1X10=10**

2. Write down principle and procedure and perform paper chromatography to separate the mixture of compounds in given test sample?

3. IDENTIFICATION OF SPOTTERS **5x2=10M**

A. Bacterial growth curve
B. Structure of ribose sugar
C. Lock and key model
D. Synchronous culture growth
E. Gel electrophoresis unit

4. Viva-voce **05M**

5. Record **05M**

Total Marks **50M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Microbiology
Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Nucleic acids: DNA and RNA - Role in heredity-The central dogma Watson and Crick model of DNA, Types of RNA, structure, and functions, Organization of DNA in prokaryotes

UNIT II :

Genetic material and replication: Experiments which established DNA as genetic material RNA as genetic material, Mechanism of DNA Replication in Prokaryotes, Proof of semi conservative mechanism of replication (Meselson - Stahl Experiment)

UNIT III:

Gene expression and regulation: Concept of gene - Muton, recon and cistron. Genetic code Protein synthesis - Transcription and translation in Prokaryotes Regulation of gene expression in bacteria -*lac* operon

UNIT IV:

Mutations, damage and repair: Outlines of DNA damage and repair mechanism Mutations - spontaneous and induced Chromosomal aberrations - deletions, inversions, tandem duplications, insertions Point mutations- base pair changes, frame shifts Mutagens - Physical and Chemical mutagens Bacterial recombination-Transformation, Conjugation, Transduction (Generalized and specialized transductions)

UNIT V:

Genetic engineering: Basic principles of genetic engineering. Restriction endonucleases, DNA ligases. Vectors – plasmids (pBR322), Cosmids, Phagemids, lambda phage vector, M 13 vectors. Outlines of gene cloning methods. Polymerase chain reaction. Genomic and cDNA libraries. General account on application of genetic engineering in industry, agriculture, and medicine.

RECOMMENDED TEXT BOOKS:

1. Freifelder, D. (1990). Microbial Genetics. Narosa Publishing House, New Delhi. Freifelder, D. (1997). Essentials of Molecular Biology. Narosa Publishing House, New Delhi.
2. Glick, B.P. and Pasternack, J. (1998). Molecular Biotechnology, ASM Press, Washington D.C., USA.
3. Lewin, B. (2000). Genes VIII. Oxford University Press, England.
4. Maloy, S.R., Cronan, J.E. and Freifelder, D. (1994). Microbial Genetics, Jones and Bartlett Publishers, London.
5. Ram Reddy, S., Venkateshwarlu, K. and Krishna Reddy, V. (2007) A text Book of Molecular Biotechnology. Himalaya Publishers, Hyderabad.
6. Sinnot E.W., L.C. Dunn and T. Dobzhansky. (1958). Principles of Genetics. 5 th Edition. McGraw Hill, New York.

7. Smith, J.E. (1996). Biotechnology, Cambridge University Press.
8. Snyder, L. and Champness, W. (1997). Molecular Genetics of Bacteria. ASM press,
9. Strickberger, M.W. (1967). Genetics. Oxford & IBH, New Delhi. Verma, P.S. and Agarwal, V.K. (2004). Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Co. Ltd., New Delhi

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Microbiology
Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : II B.Sc. (2020-21)

Paper : III

Title of the Paper : **MOLECULAR BIOLOGY AND MICROBIAL GENETICS**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	01	02	01	02	02

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Microbiology

Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. Maxmarks :75m

SECTION -A (Essay Type Questions)

Answer all questions. Draw labeled diagrams whenever necessary. 5X10=50 M

1. (A) Discuss about Watson and Crick model of DNA.

(OR)

(B) Write about organization of DNA in prokaryotes.

2. (A) Write the experiments which established DNA as genetic material.

(OR)

(B) Write about mechanism of DNA replication in prokaryotes.

3. (A) Write about genetic code.

(OR)

(B) Write about regulation of gene expression.

4. (A) What is DNA damage? Write about repair mechanisms of DNA.

(OR)

(B) What are bacterial recombination techniques?

5. (A) What is vector? Explain about plasmids and cosmids.

(OR)

(B) Give general account on applications of genetic engineering in industry, agriculture and medicine.

SECTION-B (Short Answer Type Questions)

Answer any five out of the following eight questions 5x5=25 M

6. Types of RNA
7. Semi conservative mode of replication
8. Enzymes involved in DNA replication
9. Concept of gene
10. Types of mutations
11. Physical and chemical mutagens
12. Restriction endonucleases
13. PCR

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Microbiology
Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Write about genetic code?

Sec-B

II Answer the Following Short answer questions **02x04=08**

2. Semi conservative mode of replication

3. PCR

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Microbiology
Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

List of the Experiments:

1. Study of different types of DNA and RNA using micrographs and model / schematic representations.
2. Study of semi-conservative replication of DNA through micrographs / schematic representations
3. Isolation of genomic DNA from *E. coli*
4. Estimation of DNA using UV spectrophotometer.
5. Resolution and visualization of DNA by Agarose Gel Electrophoresis.
6. Resolution and visualization of proteins by Polyacrylamide Gel Electrophoresis (SDS - PAGE).
7. Problems related to DNA and RNA characteristics, Transcription and Translation.
8. Induction of mutations in bacteria by UV light.
9. Instrumentation in molecular biology - Ultra centrifuge, Transilluminator, PCR

REFERENCE BOOKS:

1. Smith, J.E. (1996). Biotechnology, Cambridge University Press.
2. Snyder, L. and Champness, W. (1997). Molecular Genetics of Bacteria. ASM press,
3. Strickberger, M.W. (1967). Genetics. Oxford & IBH, New Delhi.
4. Verma, P.S. and Agarwal, V.K. (2004). Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Co. Ltd., New Delhi.

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
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II B.Sc. Degree Examination Semester – III
Subject – Microbiology
Paper – III MOLECULAR BIOLOGY AND MICROBIAL GENETICS LAB
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END PRACTICAL EXAMINATION

MAJOR EXPERIMENT **1x20=20M**

1. Estimate the amount of DNA by spectrophotometer and write down principle, procedure and report.

MINOR EXPERIMENT **1X10=10**

2. Write down principle, procedure and perform induction of mutations in bacteria by UV light.

3. IDENTIFICATION OF SPOTTERS **5x2=10M**

A. pBR322
B. Structure of DNA polymerase
C. Structure of tRNA
D. PCR
E. Griffith Experiment

4. Viva-voce **05M**

5. Record **05M**

Total Marks **50M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Immune System: Concept of Innate and Adaptive immunity Primary and secondary organs of immune system - thymus, bursa fabricus, bone marrow, spleen, lymph nodes. Cells of immune system- Identification and function of B and T lymphocytes, null cells, monocytes, macrophages, neutrophils, basophils and eosinophils Complement system (in brief)

UNIT II :

Immune response: Characteristics of antigen (Foreignness, Molecular size, Heterogenicity and solubility) Haptens. Antibodies - basic structure and types and functions (Immune complex formation and elimination - Agglutination, Precipitation, Neutralization, Complement fixation, Phagocytosis) Generation of Humoral Immune Response (Plasma and Memory cells) Generation of Cell Mediated Immune Response MHC- Functions of MHC I & II molecules Hypersensitivity- definition and types (in brief) Autoimmunity (in brief)

UNIT III:

Microbes in Health and Disease: Normal flora of human body. Definitions - Infection, Invasion, Pathogen, Pathogenicity, Virulence, Toxigenicity, Opportunistic infections, Nosocomial infections. General account on microbial diseases – causal organism, pathogenesis, epidemiology, diagnosis, prevention, and control of the following Bacterial diseases - Tuberculosis, Typhoid. Fungal diseases - Candidiasis. Protozoal diseases - Malaria. Viral Diseases –Corona virus and AIDS

UNIT IV:

Principles of Diagnosis: General principles of diagnostic microbiology- Collection, transport of clinical samples, Identification by Culturing&Biochemical characteristics (IMViC),Identification by molecular assays (PCR, RT-PCR, DNA probes), Identification by serological tests (ELISA, Immunofluorescence, Agglutination based tests, Complement fixation)

UNIT V:

Prevention and Treatment: Vaccines Monoclonal antibodies- Production and application Antimicrobial agents- General modes of action of antibacterial (Penicillin), antifungal (Amphotericin), antiviral (Amantadine)agents Interferons Tests for antimicrobial susceptibility (Disc diffusion) Antibiotic resistance in bacteria.

RECOMMENDED TEXT BOOKS:

1. Ananthanarayan R. and Paniker C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication.
2. Brooks G.F., Carroll K.C., Butel J.S., Morse S.A. and Mietzner, T.A. (2013) Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Publication.
3. Delves P, Martin S, Burton D, Roitt IM. (2006). Roitt's Essential Immunology.11th edition Wiley-Blackwell Scientific Publication, Oxford.
4. Goldsby RA, Kindt TJ, Osborne BA. (2007). Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.

REFERENCE BOOKS:

1. Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.
2. Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Microbiology. 4th edition. Elsevier Publication.
3. Willey JM, Sherwood LM, and Woolverton CJ. (2013) Prescott, Harley and Klein's Microbiology. 9th edition. McGraw Hill Higher Education.

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year	:	II B.Sc. (2020-21)
Paper	:	IV
Title of the Paper	:	**IMMUNOLOGY AND MEDICAL MICROBIOLOGY**
Periods of working per week	:	4 hrs
Duration of exam	:	3hrs
Max Marks	:	75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	02	01	01

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree Examination Semester – IV

Subject – Microbiology

Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max marks :75m**

SECTION – A (Essay Type Questions)

Answer all questions. Draw labeled diagrams whenever necessary. **5X10=50 M**

1. (A) Explain different types of immunity?

(OR)

(B) Write about cells of immune system.

2. (A) Write about basic structure, types and functions of antibodies

(OR)

(B) Write an essay on Complement fixation.

3. (A) Write about normal flora of human body.

(OR)

(B) Write about causal organism, pathogenesis, epidemiology, diagnosis, prevention and control of Tuberculosis.

4. (A) Write an essay on general principles of diagnostic microbiology.

(OR)

(B) How the diseases can be identified by serological tests?

5. (A) Give an account on general mode of action of antibacterial agent.

(OR)

(B) Write about antibiotic resistance in bacteria.

SECTION-B (Short Answer Type Questions)

Answer any five questions out of the following eight questions. **5x5=25 M**

6. Thymus
7. B-Lymphocytes
8. IgG
9. Hypersensitivity
10. Nosocomial infections
11. Malaria
12. Immunofluorescence
13. Interferons

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark: 25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark: 15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Write an essay on general principles of diagnostic microbiology.

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Hypersensitivity

3. Malaria

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY LAB
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

List of the Experiments:

1. Identification of human blood groups.
2. Separate serum from the blood sample (demonstration).
3. Immunodiffusion by Ouchterlony method.
4. Identification of any of the bacteria (*E. coli, Pseudomonas, Staphylococcus*, *Bacillus*) using laboratory strains on the basis of cultural, morphological and biochemical characteristics: IMViC, urease production and catalase tests
5. Study of composition and use of important differential media for identification of bacteria: EMB Agar, McConkey agar, Mannitol salt agar
6. Antibacterial sensitivity by Kirby-Bauer method
7. Determination of Minimal Inhibitory Concentration (MIC) of an antibiotic
8. Study symptoms of the diseases with the help of photographs: Anthrax,Polio, Herpes, chicken pox, HPV warts, Dermatomycoses (ring worms)
9. Study of various stages of malarial parasite in RBCs using permanent mounts.
10. Phenol coefficient test
11. Isolation of Normal flora of human body (Hands, Feet, Nostrils, Teeth Surface) by swab method.
12. Evaluation of Hand Sanitizer Effectiveness by Filter Paper Disc Method & thumb impression method.

RECOMMENDED TEXT BOOKS & REFERENCE BOOKS:

1. Ananthanarayan R. and Paniker C.K.J. (2009) Textbook of Microbiology. 8th edition, University Press Publication.
2. Brooks G.F., Carroll K.C., Butel J.S., Morse S.A. and Mietzner, T.A. (2013) Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Publication.
3. Delves P, Martin S, Burton D, Roitt IM. (2006). Roitt's Essential Immunology.11th edition Wiley-Blackwell Scientific Publication, Oxford.
4. Goldsby RA, Kindt TJ, Osborne BA. (2007). Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.
4. Kuby's Immunology. 6th edition W.H. Freeman and Company, New York.
5. Jawetz, Melnick and Adelberg's Medical Microbiology. 26th edition. McGraw Hill Microbiology. 4th edition. Elsevier Publication.
6. Willey JM, Sherwood LM, and Woolverton CJ. (2013) Prescott, Harley and Klein's Microbiology. 9th edition. McGraw Hill Higher Education

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – IV IMMUNOLOGY AND MEDICAL MICROBIOLOGY LAB
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END PRACTICAL EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

MAJOR EXPERIMENT **1X20=20M**

1. Identify the given bacterial culture by IMViC tests and write down principle, procedure and report.

MINOR EXPERIMENT **1X10=10M**

2. Determine the blood grouping and Rh typing and write down principle, procedure and report.

3. Identify the spotters **5X2=10M**

A. Macrophage
B. Chickenpox virus
C. Structure of Antibody A
D. Schizont
E. Spleen

4. Viva-voce **05M**

5. Record **05M**

Total Marks **50M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Microbial Ecology: Role of microorganisms in Biogeochemical cycles (Carbon, nitrogen, phosphorus) Microbe-microbe interactions - Synergism, mutualism, commensalism, antagonism, competition, parasitism, predation Plant- Microbe interactions - Plant growth promoting Microorganisms, Plant pathogens

UNIT II:.

Microorganisms in Environment: Microbes in waste management- solid and liquid waste (aerobic and anaerobic) Microbes in degradation of Xenobiotics Microbes in drinking water- detection of potability by (a) standard qualitative procedure: presumptive test/MPN test, confirmed and completed tests for faecal coliforms (b) Membrane filter technique Microbes in food - intrinsic and extrinsic parameters that affect microbial growth in food.

UNIT III:

Industrial Microbiology: Industrial important Microorganisms- Yeasts & Moulds , Bacteria , Actinomycetes . Screening techniques. Strain improvement techniques.

UNIT IV:

Fermentation processes: Design of fermented (for control of pH, temperature, dissolved oxygen, foaming and aeration) Types of fermentation processes - solid state, liquid state, batch, fed-batch, continuous. Fermentation media (Carbon source, nitrogen source, minerals, vitamins & growth factors, Buffers, Precursors, Antifoam agents, water, oxygen)Examples of Crude media; molasses, corn- steep liquor, sulphite waste liquor, whey. Downstream processing - filtration, centrifugation, cell disruption, solvent extraction.

UNIT V:

Microbial Productions: Microbial production of Industrial products: Citric acid, Ethanol, Penicillin, Glutamic acid, vitamin B12, Amylase, Yogurt Microbial cells as food-SCP.

RECOMMENDED TEXT BOOKS:

- Atlas RM and Bartha R. (2000). **Microbial Ecology: Fundamentals & Applications.** 4th edition. Benjamin/Cummings Science Publishing, USA
- Barton LL & Northup DE (2011). **Microbial Ecology**. 1st edition, Wiley Blackwell, USA
- Campbell RE. (1983). **Microbial Ecology**. Blackwell Scientific Publication, Oxford, England
- Coyne MS. (2001). **Soil Microbiology: An Exploratory Approach.** Delmar Thomson Learning
- Lynch JM &Hobbie JE. (1988). **Microorganisms in Action: Concepts & Application in Microbial Ecology.** Blackwell Scientific Publication, U.K
- Madigan MT, Martinko JM and Parker J. (2014). **Brock Biology of Microorganisms**. 14th edition. Pearson/ Benjamin Cummings
- Maier RM, Pepper IL and Gerba CP. (2009). **Environmental Microbiology**. 2nd edition, Academic Press

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : II B.Sc. (2020-21)

Paper : IV

Title of the Paper : MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	01	02	01

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree Examination Semester – IV

Subject – Microbiology

Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max marks :75m**

SECTION – A (Essay Type Questions)

Answer all questions. Draw labeled diagrams whenever necessary. **5X10=50 M**

1. (A) Write about the role of micro organisams in biogeochemical cycles

(OR)

(B) write about plant-microbe interactions

2. (A) Write in detail about microbes in waste management

(OR)

(B)Explain biodegradation of Xenobiotics.

3. (A) Write about industrially important micro organisms.

(OR)

(B) write an essay on strain improvement techniques.

4. (A) Write in detail about typesof fermentation processes.

(OR)

(B) Explain downsream processing.

5. (A) Write about microbial production of citric acid

(OR)

(B) Write about SCP.

SECTION-B (Short Answer Type Questions)

6. Carbon cycle
7. Plant pathogens
8. Presumptive test
9. Membrane filter technique
10. Screening techniques
11. Design of fermenter
12. Fermentation media
13. Penicillin

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark: 25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark: 15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Write about industrially important micro organisms.

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Membrane filter technique

3. Penicillin

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree Examination Semester – IV

Subject – Microbiology

Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY

(W.e.f. 2020-2021 admitted Batch)

PRACTICAL SYLLABUS

List of the Experiments:

1. Demonstration of fermenter
2. Production Microbial fermentation for the production and estimation of ethanol
3. Isolation of amylase producing microorganisms from soil
4. Isolation of food spoilage microorganisms from spoiled food sample.
5. MPN test
6. of wine from grapes
7. Growth curve and kinetics of any two industrially important microorganisms.
8. Microbial fermentation for the production and estimation of citric acid
9. Preparation of yoghurt.
10. Crowded plate technique
11. Isolation of microorganism from soil
12. Isolation of microorganism from different water samples

REFERENCE BOOKS:

1. Martin A. (1977). **An Introduction to Soil Microbiology**. 2nd edition. John Wiley & Sons Inc. New York & London. Adams MR and Moss MO. (1995). **Food Microbiology**. 4th edition, New Age International
   (P) Limited Publishers, New Delhi, India.
2. Banwart JM. (1987). **Basic Food Microbiology**. 1st edition. CBS Publishers and Distributors, Delhi, India.
3. Casida LE. (1991). **Industrial Microbiology**. 1st edition. Wiley Eastern Limited.
4. Crueger W and Crueger A. (2000). **Biotechnology: A textbook of Industrial Microbiology**. 2nd Edition. Panima Publishing Company, New Delhi
5. Frazier WC and Westhoff DC. (1992). **Food Microbiology**. 3rd edition. Tata McGraw-Hill Publishing Company Ltd, New Delhi, India.
6. Jay JM, Loessner MJ and Golden DA. (2005). **Modern Food Microbiology**. 7th edition, CBS Publishers and Distributors, Delhi, India

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Microbiology
Paper – V MICROBIAL ECOLOGY AND INDUSTRIAL MICROBIOLOGY LAB
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END PRACTICAL EXAMINATION

TIME-3 HOURS
MAXMARKS-50

MAJOREXPERIMENT **1x20=20M**

1. Estimate the amount of citric acid produced by fermentation and write down principle, procedure and report.

MINOR EXPERIMENT **1X10=10M**

2. Isolate the amylase producing bacteria from soil, write down principle, procedure and report.

3. Identify the spotters **5x2=10M**

A. SCP
B. Spoilage of vegetables by fungi
C. Yoghurt
D. Ground nut rust
E. Rhizobia

4. Viva-voce **05M**

5. Record **05M**

Total Marks **50M**

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)

III B.ScMICROBIOLOGY-V Semester/Paper -3A- Theory Syllabus

MBT-501 ENVIRONMENTAL &AGRICULTURAL MICROBIOLOGY
w.e.f., 2017-18 for 2015-16Admitted Batch

MBT- 501 ENVIRONMENTAL & AGRICULTURAL MICROBIOLOGY

TOTAL HOURS: 36 **CREDITS: 3**

UNIT - I **No. of hours:12**

Terrestrial Environment: Soil profile and soil microflora
Aquatic Environment: Microflora of fresh water and marine habitats
Atmosphere: Aeromicroflora and dispersal of microbes
Role of microorganisms in nutrient cycling (Carbon, nitrogen, phosphorus)

UNIT – II **No. of hours: 4**

Treatment and safety of drinking (potable) water, methods to detect potability of water samples: (a) standard qualitative procedure: presumptive test/MPN test, confirmed and completed tests for faecal coliforms (b) Membrane filter technique.

UNIT – III **No. of hours: 6**

Outlines of Solid Waste management: Sources and types of solid waste, Methods of solid waste disposal (composting and sanitary landfill).
Liquid waste management: Composition and strength of sewage (BOD and COD), Primary, secondary (oxidation ponds, trickling filter, activated sludge process and septic tank) and tertiary sewage treatment.

UNIT – IV
Microbial interactions – mutualism, commensalism, antagonism, competition, parasitism, predation.

Plant Growth Promoting Microorganisms - Mycorrhizae, Rhizobia, *Azospirillum*, *Azotobacter*,*Frankia*, phosphate-solubilizers and Cyanobacteria

UNIT-V.
Outlines of biological nitrogen fixation (symbiotic, non-symbiotic).
Biofertilizers - *Rhizobium*.

UNIT – VI **No. of hours: 7**

Concept of disease in plants. Symptoms of plant diseases caused by fungi, bacteria, and viruses. Plant diseases - groundnut rust, Citrus canker and tomato leaf curl.
Principles of plant disease control.

ADIKAVI NANNAYA UNIVERSITY,RAJAMAHENDRAVARAM
B.Sc MICROBIOLOGY (CBCS) SYLLABUS
THIRD YEAR – SEMESTER- V
MBP- 501 ENVIRONMENTAL & AGRICULTURAL MICROBIOLOGY

TOTAL HOURS: 36 **CREDITS: 2**

1. Preparation of soil extract agar and any one culture media for algal growth
2. Isolation of microbes (bacteria and fungi) from soil.
3. Study of air microflora by petriplate exposure method.
4. Microbiological Analysis of potable water Standard Plate Count
5. Determination of Dissolved Oxygen (DO) of water samples.
6. Isolation of *Rhizobium* from root nodules.
7. Isolation of actinomycetes on I.S.P. media (International Streptomyces project media)
8. Observation ofphoto micrographs of plant diseases of local importance - Citrus canker, Tikka disease of Groundnut, Bhendi yellow vein mosaic, Rusts, Smuts, Powdery mildews, Tomato leaf curl.

SUGGESTED READINGS

Atlas RM and Bartha R. (2000). **Microbial Ecology: Fundamentals & Applications.**4th edition. Benjamin/Cummings Science Publishing, USA

Barton LL & Northup DE (2011). **Microbial Ecology**. 1st edition, Wiley Blackwell, USA

Campbell RE. (1983). **Microbial Ecology**. Blackwell Scientific Publication, Oxford, England.

Coyne MS. (2001). **Soil Microbiology: An Exploratory Approach.** Delmar Thomson Learning.

Lynch JM &Hobbie JE. (1988). **Microorganisms in Action: Concepts & Application in Microbial Ecology.** Blackwell Scientific Publication, U.K.

Madigan MT, Martinko JM and Parker J. (2014). **Brock Biology of Microorganisms.** 14th edition. Pearson/ Benjamin Cummings

Maier RM, Pepper IL and Gerba CP. (2009). **Environmental Microbiology.**.2nd.edition,.Academic Press

Martin A. (1977). **An Introduction to Soil Microbiology**. 2nd edition. John Wiley & Sons Inc. New York & London.

Okafor, N (2011). **Environmental Microbiology of Aquatic & Waste systems.** 1st edition, Springer, New York.

Singh A, Kuhad, RC & Ward OP (2009). **Advances in Applied Bioremediation**. Volume 17, Springer-Verlag, Berlin Hedelberg

Stolp H. (1988). **Microbial Ecology: Organisms Habitats Activities**. Cambridge University Press, Cambridge, England.

Subba Rao NS. (1999). **Soil Microbiology**. 4th edition, Oxford & IBH Publishing Co. New Delhi.

Willey JM, Sherwood LM, and Woolverton CJ. (2013). **Prescott's Microbiology.** 9th edition. McGraw Hill Higher Education.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

IIIB.Sc Degree Examination at the end of FIFTH Semester
MICROBIOLOGY –PAPER 3A
MBT-501 ENVIRONMENTAL &AGRICULTURAL MICROBIOLOGY
w.e.f., 2017- 18

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrs **Max Marks:75**

Title of the Paper	:	**Environmental and agricultural Microbiology**
Periods of working per week	:	3hrs
Duration of exam	:	3hrs
Max Marks	:	75

PART- I (Long Answer Questions) **04X12=48 M**

It consists of **SIX** questions
Student can choose any **Four** questions and answer.
Each question carries **12** Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) **04X05=20 M**

It consists of SIX questions
Student can choose any **Four** questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) **07X01=07 M**

It consists of **SEVEN** questions
Student has to answer **ALL** questions.
Total **SEVEN** questions should be given. **one** question should be given from each unit I,II,III,IV,V,VI . **(SEVENTH** question can be given from any unit based on its importance)
[note; question paper should be given keeping in view the different learning ablilities of students namely brigtht,aboveaverage and average].

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of Fifth Semester
MICROBIOLOGY -3A
MBT-501 ENVIRONMENTAL &AGRICULTURAL MICROBIOLOGY
(Semester End Theory Model Question Paper)

w.e.f 2017-18 for 2015-16 admitted batch

TIME: 3 HOURS MAX MARKS: 75

PART-1

ANSWER ANY FOUR QUESTIONS FROM THE FOLLOWING 4X12=48

(1) Write about the environmental that affect microbial growth?
(2) Explain the role of microorganisms in Nutrient Cycling?
(3) Write about methods used to detect the portability of water samples?
(4) Discuss in detail various steps involved in sewage treatment process?
(5) Write about the different types of bio-fertilizers, their importance and applications?
(6) Describe the symptoms of plant diseases caused by fungi, bacteria and viruses?

PART-2

ANSWER ANY FOUR OF THE FOLLOWING 4X5=20

(7) Soil micro flora
(8) Mutualism
(9) Membrane filter technique
(10)Trickling Filter
(11) Mycorrhizae
(12) Citrus canker

PART-3

ANSWER ANY OF THE FOLLOWING IN ONE OR TWO SENTENCES 7X1=7

13)Thermophiles

14) Predation

15) MPN

16) Sludge

17) Chlorination

18) Rhizobia

19) Rusts

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Microbiology-Paper 3A

MBT- 501 Environmental and Agricultural Microbiology
Theory Internal Assessment Model question Paper

w.e.f., 2017 – 18 for 2015-16 admitted batch

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Section-A

I Answer the Following Essay question **01X06=06 M**

1. Explain the role of Microorganisms in Nutrient Cycling

Section-B

II Answer the Following Short answer question **02X03=06 M**

2.Mycorrhizae

3.Mutualism

Section-C

III Answer the following questions with one or two sentences **03X01=03 M**

4. Predation

5. Rhizobia

6. Sludge

D.NR COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.Sc./Microbiology/Semester III/ Paper- 3A Practical

Semester End Examination Model Question Paper

MBP – 501 Environmental and Agricultural Microbiology

Time: 3 Hrs Max Marks: 50

1. Major Experiment - Determine the Biological oxygen demand of the given waste water sample. **30M**

Principle	10M
Procedure	10M
Observation	10M

2. Identify the following Spotters **10M**

a.

b.

c.

d.

e.

3. Record and VIVA Voice **10M**

(Guide Lines for Practical instructors: should Keep about 30 PhotoMicrographs of Microbes ,Diagrams ,Equipment Photos which are relevant to the practical paper ready for the examiner to select spotters.)

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.ScMICROBIOLOGY-V Semester/Paper -4A- Theory Syllabus

MBT-601 FOOD AND INDUSTRIAL MICROBIOLOGY
w.e.f., 2017- 18 for 2015-16 Admitted Batch

TOTAL HOURS: 36 **CREDITS: 3**

UNIT- I **No. of hours: 8**

Intrinsic and extrinsic parameters that affect microbial growth in food
Microbial spoilage of food - fruits, vegetables, milk, meat, egg, bread and canned foods,sterilization of raw food material.
Food intoxication (botulism).
Food-borne diseases (salmonellosis) and their detection.

UNIT – II **No. of hours: 7**

Principles of food preservation - Physical and chemical methods.
Fermented Dairy foods – cheese and yogurt.
Microorganisms as food – SCP, edible mushrooms (white button, oyster and paddy straw). Probiotics and their benefits.

UNIT – III No. of hours: 6

Microorganisms of industrial importance – yeasts,(Saccharomyces cerevisiae)moulds,(Aspergillus niger) Bacteria(E.coli), actinomycetes (Streptomyces griseus).
Outlines of Isolation and Screening and strain improvement of industrially-important microorganisms.

UNIT – IV **No. of hours: 8**

Types of fermentation processes - solid state, liquid state, batch, fed-batch, continuous.
Basic concepts of Design of fermenter.
Ingredients of Fermentation media

UNIT-V
Downstream processing - filtration, centrifugation, cell disruption, solvent extraction.

UNIT – VI **No. of hours: 7**

Microbial production of Industrial products - Citric acid, Ethanol, amylases, penicillin, glutamic acid and vitamin B12.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.ScMICROBIOLOGY-V Semester/Paper -4A- Practical Syllabus

MBT-601 FOOD AND INDUSTRIAL MICROBIOLOGY
w.e.f., 2017- 18 for 2015-16 Admitted Batch

TOTAL HOURS: 36 **CREDITS:2**

1. Isolation of bacteria and fungi from spoiled bread/fruits/vegetables

2. Preparation of Yogurt/Dahi

3. Determination of the microbiological quality of milk sample by MBRT

4. Isolation of antagonistic microorganisms by crowded plate technique

5. Design of Fermenter(identification of diagrams of various types of Fermentors and labelling of parts)

6. Microbial fermentation for the production and estimation of ethanol from Grapes.

7. Microbial fermentation for the production and estimation of citric acid.

SUGGESTED READING

Adams MR and Moss MO. (1995). **Food Microbiology.** 4th edition, New Age International (P) Limited Publishers, New Delhi, India.

Banwart JM. (1987). **Basic Food Microbiology.** 1st edition. CBS Publishers and Distributors, Delhi, India.

Casida LE. (1991). **Industrial Microbiology.** 1st edition, Wiley Eastern Limited.

Crueger W and Crueger A. (2000). **Biotechnology: A textbook of Industrial Microbiology.** 2nd Edition. Panima Publishing Company, New Delhi

Frazier WC and Westhoff DC. (1992). **Food Microbiology.** 3rd edition. Tata McGraw-Hill Publishing Company Ltd, New Delhi, India.

Jay JM, Loessner MJ and Golden DA. (2005). **Modern Food Microbiology.** 7th edition, CBS Publishers and Distributors, Delhi, India

Patel AH. (1996). **Industrial Microbiology** .1st Edition. MacMillan India Limited Publishing Company Ltd. New Delhi, India

Stanbury PF, Whitaker A and Hall SJ. (2006). **Principles of Fermentation Technology.** 2nd edition, Elsevier Science Ltd.

Tortora GJ, Funke BR, and Case CL. (2008). **Microbiology: An introduction.** 9th Edition, Pearson Education

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

IIIB.Sc Degree Examination at the end of FIFTH Semester
MICROBIOLOGY PAPER-4A
MBT-601 FOOD AND INDUSTRIAL MICROBIOLOGY
w.e.f., 2017- 18

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrsMax Marks:75

Title of the Paper :**Food and Industrial Microbiology**
Periods of working per week : 3hrs

Duration of exam :3hrs

Max Marks :75

PART- I (Long Answer Questions) 04X12=48 M

It consists of **SIX** questions
Student can choose any **Four** questions and answer.
Each question carries **12** Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any **Four** questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of **SEVEN** questions
Student has to answer **ALL** questions.
Total **SEVEN** questions should be given. one question should be given from each unit I,II,III,IV,V,VI . (**SEVENTH** question can be given from any unit based on its importance)
[note; question paper should be given keeping in view the different learning abilities of students namely bright, aboveaverage and average.]

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)
IIIB.Sc MICROBIOLOGY Degree Examination at the end of Fifth Semester
MICROBIOLOGY PAPER-4A
MBT-601 Food Microbiology and Industrial Microbiology
(Semester end Theory Examination Model question paper)

w.e.f(2017-18) for 2015-16 admitted batch

TIME: 3 HOURS MAX MARKS: 75

PART-1

ANSWER ANY FOUR QUESTIONS FROM THE FOLLOWING 4X12=48

(13) Discuss the microorganisms involved in spoilage of food
(14) Write in detail about food borne diseases
(15) Write about different types of fermented foods and their importance
(16) Describe the important approaches used in strain improvement?
(17) Write an essay on types of fermentation processes?
(18) Write about the microbial production of Ethanol?

PART-2

ANSWER ANY FOUR OF THE FOLLOWING 4X5=20

(19) Canned food spoilage
(20) Botulism
(21) Paddy straw mushroom
(22) Actinomycetes
(23) Batch fermentation
(24) Penicillin

PART-3

ANSWER ANY OF THE FOLLOWING IN ONE OR TWO SENTENCES 7X1=7

(13)Bloody bread (16)Aspergillus (19) Amylase

(14) Salmonellosis (17) Sparger

(15) Single cell protei (18)Baffle

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Microbiology
PAPER-4A
MBT- 601 Food and Industrial Microbiology
Theory Internal Assessment Model question Paper

w.e.f., 2017 - 18

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Section-A

I Answer the Following Essay question **01X06=06 M**

2. Write in detail about food borne Infections.

Section-B

II Answer the Following Short answer question **02X03=06 M**

2. Actinomycetes

3. Batch Fermentation

Section-C

III Answer the following questions with one or two sentences **03X01=03 M**

4. Single Cell Protein

5. Aspergillus

6. Sparger

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.Sc./Microbiology/Semester V/ Practical

Semester End Examination Model Question Paper

MBP – 601 Food and Industrial Microbiology

Time: 3 Hrs

Max Marks: 50

1. Find out the bacterial load in air by Petri plate exposure method. **30M**

Principle	10M
Procedure	10M
Observation	10M

2. Identify the following Spotters **10M**

a.

b.

c.

d.

e.

3. Record and VIVA Voice **10M**

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of Sixth Semester
MICROBIOLOGY
IIIB MICROBIAL BIOTECHNOLOGY
w.e.f., 2017- 18

TOTAL HOURS: 36 **CREDITS: 3**

UNIT- I **No. of Hours: 8**

Microbial biotechnology: Scope and its applications in human therapeutics, agriculture (Biofertilizers, PGPR, Mycorrhizae), environmental, and food technology.
Genetically engineered microbes for industrial application: Bacteria and yeast

UNIT- II **No. of Hours: 7**

Recombinant microbial production processes in pharmaceutical industries - Streptokinase, recombinant vaccines (Hepatitis B vaccine).
Over view of production and applications of Microbial polysaccharides, Bioplastics and Microbial biosensors

UNIT- III **No. of Hours: 10**

Microbial based transformation of steroids and sterols.
Bio-catalytic processes and their industrial applications: Production of high fructose syrup and production of cocoa butter substitute.
Immobilization methods and their application: Whole cell immobilization

UNIT- IV **No. of Hours: 7**

Bio-ethanol and bio-diesel production: commercial production from lignocellulosic waste and algal biomass.
Biogas production: Methane and hydrogen production using microbial culture.

UNIT -V
Microorganisms in bioremediation: Degradation of xenobiotics.
Mineral recovery, removal of heavy metals from aqueous effluents.

UNIT- VI **No. of Hours: 4**

Outlines of Intellectual Property Rights: Patents, Copyrights, Trademarks

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

IIIB.Sc Degree Examination at the end of FIFTH Semester
MICROBIOLOGY
IIIB MICROBIAL BIOTECHNOLOGY
w.e.f., 2017- 18

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrsMax Marks:75

Title of the Paper :**MICROBIAL BIOTECHNOLOGY**
Periods of working per week : 3hrs

Duration of exam :3hrs

Max Marks :75

PART- I (Long Answer Questions) 04X12=48 M

It consists of **SIX** questions
Student can choose any **Four** questions and answer.
Each question carries **12** Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any **Four** questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of **SEVEN** questions
Student has to answer **ALL** questions.
Total **SEVEN** questions should be given. **one** question should be given from each unit I,II,III,IV,V,VI . (**SEVENTH** question can be given from any unit based on its importance)
[note; question paper should be given keeping in view the different learning abilities of students namely bright, aboveaverage and average.]

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

IIIB.Sc MICROBIOLOGY Degree Examination at the end of 6th Semester

PAPER-3B

MICROBIAL BIOTECHNOLOGY

(Semester end Theory Examination Model question paper)

w.e.f(2017-18) for 2015-16 admitted batch

TIME: 3 HOURS MAX MARKS: 75

PART-1

ANSWER ANY FOUR QUESTIONS FROM THE FOLLOWING 4X12=48

(25) Discuss the applications of microbial biotechnology in biofertilizers
(26) Write about the production and applications of bioplastics
(27) Write an essay on microbial based biotransfermation
(28) Write about bioethanol production
(29) Write in detail about microbial bioremediation
(30) Discuss briefly about intellectual property rights

PART-2

ANSWER ANY FOUR OF THE FOLLOWING 4X5=20

(31) Mycorrhizae
(32) Biosensors
(33) Steroid transformation
(34) Methane production
(35) Degradation of pesticides
(36) Patents

PART-3

ANSWER ANY OF THE FOLLOWING IN ONE OR TWO SENTENCES 7X1=7

(13)PGRR (15)Blood clotting factor (17) Biofuels

(14) GEM (16)immobilization

(18) Mineralization (19) Trade mark

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Microbiology

III B MICROBIAL BIOTECHNOLOGY
Theory Internal Assessment Model question Paper

w.e.f., 2017 - 18

Max Mark:25M

(i) Written examination	15M
(ii) Assignment/Seminar/Project	05M
(iii) Extracurricular Activities	05M

TIME:01Hr **Written examination** **Max Mark:15M**

Section-A

I Answer the Following Essay question **01X06=06 M**

3. Write about the production and applications of bioplastics

Section-B

II Answer the Following Short answer question **02X03=06 M**

2. Mycorrhizae

3. Biosensors

Section-C

III Answer the following questions with one or two sentences **03X01=03 M**

4. Blood clotting factors

5. Immobilization

6. Biofuels

D.NR COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.Sc./Microbiology/Semester VI/ Practical

III B MICROBIAL BIOTECHNOLOGY

1. Yeast cell immobilization in calcium alginate gels

2. Enzyme immobilization by sodium alginate method

3. Pigment production from fungi (*Trichoderma / Aspergillus / Penicillium*)

4. Isolation of xylanase or lipase producing bacteria

5. Study of algal Single Cell Proteins

SUGGESTED READING

Crueger W, Crueger A (1990) Biotechnology: **A text Book of Industrial Microbiology** 2nd edition Sinauer associates, Inc.

Demain, A. L and Davies, J. E. (1999). **Manual of Industrial Microbiology and Biotechnology,** 2nd Edition, ASM Press.

Glazer AN and Nikaido H (2007) **Microbial Biotechnology,** 2nd edition, Cambridge University Press

Glick BR, Pasternak JJ, and Patten CL (2010) **Molecular Biotechnology** 4th edition, ASM Press

Gupta PK (2009) **Elements of Biotechnology** 2nd edition, Rastogi Publications

Prescott, Harley and Klein's **Microbiology** by Willey JM, Sherwood LM, Woolverton CJ (2014), 9th edition, Mc Graw Hill Publishers.

Ratledge, C and Kristiansen, B. (2001). **Basic Biotechnology,** 2nd Edition, Cambridge University Press.

Stanbury PF, Whitaker A, Hall SJ (1995) **Principles of Fermentation Technology** 2nd edition., Elsevier Science

Swartz, J. R. (2001). **Advances in Escherichia coli production of therapeutic proteins. Current Opinion in Biotechnology,** 12, 195–201.

D.NR COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

III B.Sc./Microbiology/Semester VI/ Practical

Semester End Examination Model Question Paper

III B MICROBIAL BIOTECHNOLOGY

Time: 3 Hrs | Max Marks: 50

1. Yeast cell immobilization in calcium alginate gels **30M**

Principle	10M
Procedure	10M
Observation	10M

2. Identify the following Spotters **10M**

   a.

   b.

   c.

   d.

   e.

3. Record and VIVA Voice **10M**

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
IV B MICROBIAL QUALITY CONTROL IN FOOD &PHARMACUETICAL INDUSTRIES

w.e.f., 2017- 18

TOTAL HOURS: 36 **CREDITS: 3**

UNIT – I **No. of Hours: 8**

Good laboratory practices - Good microbiological practices.
Biosafety cabinets – Working of biosafety cabinets, using protective clothing, specification for BSL-1, BSL-2, BSL-3.
Discarding biohazardous waste – Methodology of Disinfection, Autoclaving & Incineration

UNIT – II **No. of Hours: 8**

Culture and microscopic methods - Standard plate count, Most probable numbers, Direct microscopic counts, Biochemical and immunological methods: Limulus lysate test for endotoxin, gel diffusion, sterility testing for pharmaceutical products

UNIT – III **No. of Hours: 8**

Molecular methods - Nucleic acid probes, PCR based detection, biosensors. RTPCR

UNIT – IV **No. of Hours: 8**

Enrichment culture technique, Detection of specific microorganisms - on XLD agar, *Salmonella Shigella* Agar, Manitol salt agar, EMB agar, McConkey Agar, Saboraud Agar

UNIT –V

Ascertaining microbial quality of milk by MBRT, Rapid detection methods of microbiological quality of milk at milk collection centres (COB, 10 min Resazurin assay).

UNIT – VI **No. of Hours: 4**

Hazard analysis of critical control point (HACCP) - Principles, flow diagrams, limitationsMicrobial Standards for Different Foods and Water – BIS standards for common foods and drinking water.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY

IV B MICROBIAL QUALITY CONTROL IN FOOD & PHARMACUETICAL INDUSTRIES

w.e.f., 2017- 18
GUIDE LINES TO QUESTION PAPER SETTERS

Year	:	III B.Sc. (2016-17)
Paper	:	IV B
Title of the Paper &PHARMACUETICAL INDUSTRIES	:	MICROBIAL QUALITY CONTROL IN FOOD
Periods of working per week	:	4 hrs
Duration of exam	:	3hrs
Max Marks	:	75

Time :3 hrs
Max Marks:75

PART- I (Long Answer Questions) 04X12=48 M

It consists of **SIX** questions
Student can choose any **Four** questions and answer.
Each question carries **12** Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI .

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any **Four** questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI .

PART- III (Very Short Answer Questions) 07X01=07

It consists of **SEVEN** questions
Student has to answer **ALL** questions.
Total **SEVEN** questions should be given. **one** question should be given from each unit I,II,III,IV,V,VI . **(SEVENTH** question can be given from any unit based on its importance)
[note; question paper should be given keeping in view the different learning ablilities of students namely brigt=htaboveaverage and average].

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
PART – II MICROBIOLOGY
IV B MICROBIAL QUALITY CONTROL IN FOOD &PHARMACUETICAL INDUSTRIES

w.e.f., 2017- 18

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:25M**

Sec-A

I Answer the Following Essay question **01X06=06 M**

4. Discuss in detail about good laboratory practices?

Sec-B

II Answer the Following Short answer question

02X03=06 M

2. EMB agar

3. MBRT Test

Sec-C

III Answer the following questions with one or two sentences
03X01=03 M

4. Incineration
5. Endotoxin
6. PCR

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
IVB MICROBIAL QUALITY CONTROL IN FOOD &PHARMACUETICAL INDUSTRIES

w.e.f., 2017- 18

Time: 3 Hrs. **Max.Marks:75**

PART - I

Answer the any FOUR Questions from the following. **4X12=48**

SECTION – A

1. Discuss in detail about good laboratory practices
2. Write about of biochemical tests for characterization of microorganisms.
3. Discuss about various molecular methods?
4. Write about enrichment culture technique
5. Write about rapid detection methods of microbiological quality of milk
6. Discuss about regularly compliance standard and limitations of microbial standards for different foods

PART – II

Answer any FOUR of the following. 4X5=20

7. Biosafety cabinates
8. Immunological methods
9. Biosensors
10. EMB agar
11. MBRT Test
12. BIS standers for common tools

PART – III

Answer any ALL of the following in one or two sentences. **7X1=7**

13. Disinfectant
14. Incineration
15. Endotoxin
16. PCR
17. Manitol salt agar
18. Casein
19. HACC

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
IV B MICROBIAL QUALITY CONTROL IN FOOD & PHARMACUETICAL INDUSTRIES
w.e.f., 2017 - 18

PRACTICAL SYLLABUS

TOTAL HOURS: 36 **CREDITS: 2**

1. Microbiological laboratory safety- General rules & Regulations.

2. Sterility tests for Instruments – Autoclave & Hot Air Oven

3. Disinfection of selected instruments &Equipments

4. Sterility of Air and its relationship to Laboratory & Hospital sepsis.

5. Sterility testing of Microbiological media

6. Sterility testing of any one Pharmaceutical product

7. Standard qualitative analysis of water.

8.Microbiological analysis of homogenized food samples by direct microscopic count

SUGGESTED READING

Baird RM, Hodges NA and Denyer SP (2005) Handbook of Microbiological Quality control in Pharmaceutical and Medical Devices, Taylor and Francis Inc.

Garg N, Garg KL and Mukerji KG (2010) Laboratory Manual of Food Microbiology I K International Publishing House Pvt. Ltd.

Harrigan WF (1998) Laboratory Methods in Food Microbiology, 3rd ed. Academic Press

Jay JM, Loessner MJ, Golden DA (2005) Modern Food Microbiology, 7th edition. Springer

Laboratory Exercises in Microbiology, George.A.Wistreich&Max.D.Lechtman, 3 rd Ed, Glencoe press, London.

Manual of diagnostic microbiology, Dr.B.J.Wadher&Dr.G.L.Bhoosreddy, Firs.Ed., Himalaya publishing house, Nagpur.

Microbiology - A laboratory manual, Cappuccino &Sherman , 6 th Ed, Pearson Education

Pharmaceutical Microbiology – Purohit

Pharmaceutical Microbiology – W.B. Hugo

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
IV B MICROBIAL QUALITY CONTROL IN FOOD & PHARMACUETICAL INDUSTRIES
w.e.f., 2017 - 18

Time:2 hrs **Max Marks:50**

1. Major experiment : Sterility testing of Microbiological media 30M

Principle	10 M
Procedure	10 M
Observation	05 M
Result	05 M

2. Identify the following Spotters **10 M**

a.

b.

c.

d.

e.

3. Record and VIVA Voice **10 M**

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

III B.ScMICROBIOLOGY-VI Semester/Paper -5B- Theory Syllabus

MBT-801 –B(SKILL ELECTIVE)

BIOFERTILIZERS AND BIOPESTICIDES

w.e.f., 2017- 18 for 2015-16 Admitted Batch

TOTAL HOURS: 36 ***CREDITS: 3***

UNIT – I **No of Hours: 10**

General account of the microbes used as biofertilizers for various crop plants and their advantages over chemical fertilizers.

Symbiotic N_2 fixers: Rhizobium - Isolation, characteristics, types, inoculum production and field application, legume/pulses plants

Frankia from non-legumes and characterization.

UNIT-II

Cyanobacteria from Azolla, characterization, mass multiplication, Role in rice cultivation, Crop response, field application.

UNIT – III **No of Hours: 6**

Free living Azospirillum, Azotobacter - isolation, characteristics, mass inoculum production and field application.

UNIT – IV **No of Hours: 6**

Phosphate solubilizing microbes - Isolation, characterization, mass inoculum production, field application

UNIT – V **No of Hours: 7**

Importance of mycorrizal inoculum, types of mycorrhizae and associated plants, Mass inoculum production of VAM, field applications of Ectomycorrhizae and VAM.

UNIT – VI **No of Hours: 7**

General account of microbes used as Bio-Insecticides and their advantages over synthetic pesticides.

Bacillus thuringiensis - production, Field applications.

Viruses – NPV cultivation and field applications.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY

V B BIOFERTILIZERS AND BIOPESTICIDES
w.e.f., 2016- 17

GUIDE LINES TO QUESTION PAPER SETTERS

Year : III B.Sc. (2016-17)
Paper : V B
Title of the Paper : BIOFERTILIZERS AND BIOPESTICIDES

Periods of working per week : 4 hrs
Duration of exam : 3hrs
Max Marks : 75

Time :3 hrs
Max Marks:75

PART- I (Long Answer Questions) 04X12=48 M

It consists of **SIX** questions
Student can choose any **Four** questions and answer.
Each question carries **12** Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI .

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any **Four** questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI .

PART- III (Very Short Answer Questions)

07X01=07

It consists of **SEVEN** questions
Student has to answer **ALL** questions.
Total **SEVEN** questions should be given. **one** question should be given from each unit I,II,III,IV,V,VI . **(SEVENTH** question can be given from any unit based on its importance)
[note; question paper should be given keeping in view the different learning ablilities of students namely brigt=htaboveaverage and average].

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
PART – II MICROBIOLOGY
V B MICROBIAL QUALITY CONTROL IN FOOD &PHARMACUETICAL INDUSTRIES

w.e.f., 2017 - 18

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:25M**

Sec-A

I Answer the Following Essay question **01X06=06 M**

5. Write an essay on Mycorrhizal biofertilizers

Sec-B

II Answer the Following Short answer question

02X03=06 M

2. Phosphate solubilizing microorganisms

3. VAM Fungi

Sec-C

III Answer the following questions with one or two sentences
03X01=03 M

4. Azospirillum
5. PSM
6. Ectomycorrhizae

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
VB BIOFERTILIZERS AND BIOPESTICIDES

w.e.f., 2017- 18

Time: 3 Hrs. **Max.Marks:75**

PART - I

Answer the any FOUR Questions from the following. 4X12=48

SECTION – A

20. Give a general account of the microbes used as biofertilizers for various crop plants and their advantages
21. Elaborate on the production of Cyanobacterial biofertilizers and their field applications
22. Discuss about the isolation and characterization of free living nitrogen fixers and their mass inoculums production and field application
23. Write about applications of Phosphate solubilizing microbes as Biofertilizers
24. Write an essay on Mycorrhizal biofertilizers
25. Give a detailed account of principles of Biocontrol and write notes on Biopesticides

PART – II

Answer any FOUR of the following. 4X5=20

26. Rhizobium
27. Role of Cyanobacteria in rice cultivation
28. Azotobacter
29. Phosphate solubilizing microorganisms
30. VAM Fungi
31. Bacillus thurengiensis

PART – III

Answer any ALL of the following in one or two sentences. 7X1=7

32. Legumes
33. Frankia
34. Bioinsecticide
35. Azospirillum
36. PSM
37. Ectomycorrhizae
38. NPV virus
39.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to AdikaviNannaya University)

B.Sc MICROBIOLOGY (CBCS) SYLLABUS

III B.ScMICROBIOLOGY-VI Semester/Paper -5B- Practical Syllabus

MBP-801 –B(SKILL ELECTIVE)

BIOFERTILIZERS AND BIOPESTICIDES

w.e.f., 2017- 18 for 2015-16 Admitted Batch

TOTAL HOURS: 36 **CREDITS: 2**

1. Isolation of *Rhizobium* from root nodules.

3. Isolation of phosphate solubilizers from soil

4. Staining and observation of VAM

3. A visit to biofertilizer production unit.

SUGGESTED READINGS

Agarwal SK (2005) **Advanced Environmental Biotechnology**, APH publication.

Kannaiyan, S. (2003). **Bioetchnology of Biofertilizers,** CHIPS, Texas.

Mahendra K. Rai (2005). **Hand book of Microbial biofertilizers**, The Haworth Press, Inc. New York.

Reddy, S.M. et. al. (2002). **Bioinoculants for sustainable agriculture and forestry**, Scientific Publishers.

Saleem F and Shakoori AR (2012) **Development of Bioinsecticide,** Lap Lambert Academic Publishing GmbH KG

Subba Rao N.S (1995) **Soil microorganisms and plant growth** Oxford and IBH publishing co. Pvt. Ltd. NewDelhi.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to AdikaviNannaya University)
IIIB.Sc Degree Examination at the end of SIXTH Semester
MICROBIOLOGY
V B BIOFERTILIZERS AND BIOPESTICIDES
w.e.f., 2017 - 18

Time:2 hrs **Max Marks:50**

4. Major experiment : Isolate rhizobium from root nodules & report the smear morphology 30M

Principle	10 M
Procedure	10 M
Observation	05 M
Result	05 M

5. Identify the following Spotters **10 M**

a.

b.

c.

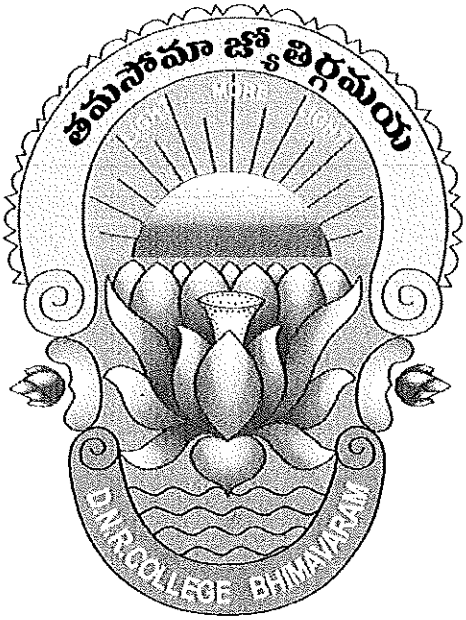
d.

e.

6. Record and VIVA Voice **10 M**

BOARD OF STUDIES MEETING

15 NOVEMBER, 2021



DEPARTMENT OF BIOTECHNOLOGY

D.N.R.COLLGE (AUTONOMOUS)

BHIMAVARAM – 534 202

D.N.R. COLLEGE (A) :: BHIMAVARAM

Board of Studies in Biotechnology

Minutes of the meeting of the **Board of Studies in Biotechnology** held on 15-11-2021 at 2.00 P.M through Online.

S.NO	NAME OF THE PERSON	DESIGNATION	SIGNATURE
1	Miss Y.MEENAKSHI Lecturer in Biotechnology, D.N.R College(A), Bhimavaram.	Chairperson	
2	Sri K.SURESH BABU Lecture in Biotechnology A.B.N& P.R.R Degree& P.G College, Kovvuru. sureshbiozeal@gmail 9966845824	UNIVERSITY NOMINEE	
3	Dr.T.S.RAMAKRISHNA HOD,Department of Biotechnology S.K.B.R College Amalapuram drramkishtsalla@gmail.com 9849899199	SUBJECT EXPERT	
4	Sri T.RAMESH Lecturer in Biotechnology S.V.K.P&Dr K.S. Raju Arts & Science College (A),Penugonda tadi.ramesh@gmail.com 9866765259	SUBJECT EXPERT	
5	Sri E. BHARAT RAJU Lecturer in Biotechnology, D.N.R College (A),Bhimavaram.	MEMBER	
6	Sri P.DURGA RAMA SATISH Lecturer in Biotechnology, D.N.R College (A),Bhimavaram.	MEMBER	
7	Miss.B.KRISHNAVENI Lecturer in Biotechnology, D.N.R College (A),Bhimavaram	MEMBER	
8	N.VINAY TEJA 9885901087	ALUMNI MEMBER	
9	J.KRISHNAKUMARI III B.Sc MICROBIOLOGY(MB.BT.BC) 9390368823,D.N.R COLLEGE (A)	STUDENT REPRESENTATIVE	

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF BIOTECHNOLOGY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE

AGENDA

Subject No.1: To design and approve the syllabi for **3rd and 4 th** Semester course of B.Sc(Biotechnology)in papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Subject No.2: To design and approve the structure of the question papers, model question papers for B.Sc(Biotechnology) course of Paper **III , IV & V** with maximum marks 75 of **3rd and 4 th** semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No.3: To design and approve the syllabi, model question papers and break up of practical marks 50 of **3rd and 4 th** semester end practical examinations in B.Sc(Biotechnology) course, of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Subject No.4: To design and approve the break-up of the Internal assessment test marks 25 in **3rd and 4 th** semester B.Sc(Biotechnology) course of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit system.

Subject No.5: To design and approve the qualifying marks in B.Sc(Biotechnology) Course for papers **III , IV & V of 3rd and 4 th** semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject No.6: To review the existing syllabi, model question papers of both theory and practicals of,**V and VI semester** B.Sc(Biotechnology) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject No.7: To ratify the existing syllabi for **I and II semester** B.Sc(Biotechnology) course of **paper-I, paper-II**.

Subject No.8: To ratify the structure of the question papers, model question papers for B.Sc(Biotechnology) course of Paper **I , II** with maximum marks 75 of **1st and 2nd semester** end theory examination and abstract of question paper for internal assessment test with maximum marks 25.

Subject No. 9: To ratify the syllabi, model question papers and break up of practical marks 50 of **1st and 2nd** semester end practical examinations in B.Sc(Biotechnology) course, of **papers I and II.**

Subject No. 10: To ratify the break-up of the Internal assessment test marks 25 in **1st and 2nd** semester B.Sc(Biotechnology) course of **papers I and II.**

Subject No. 11: To approve the list of recommended text books and reference books which are listed at the end of syllabi of papers III, IV and V in B.Sc(Biotechnology) course.

Subject No.12: To enter into MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Subject No. 13: To procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resourceful for both students and faculty members.

Subject No. 14: Any other matter with the permission of the chairperson.

Chairperson
Board of studies of Biotechnology
D.N.R.College (A)
Bhimavaram

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
DEPARTMENT OF BIOTECHNOLOGY
BOARD OF STUDIES MEETING ON 15-11-2021 through ONLINE
RESOLUTIONS

Resolution No1: It is unanimously resolved to approve the syllabi for **3rd and 4 th** Semester course of B.Sc(Biotechnology)in papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22onwards.

Resolution No. 2: It is unanimously resolved to approve the structure of the question papers, model question papers for B.Sc(Biotechnology) course of Paper **III , IV & V** with maximum marks 75 of **3rd and 4 th** semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

Resolution No.3: It is unanimously resolved to approve the syllabi, model question papers and break up of practical marks 50 of **3rd and 4 th** semester end practical examinations in B.Sc(Biotechnology) course, of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22onwards.

1. Written exam -30M
2. Spotters-10M
3. Record-5M
4. Viva Voice-5M

Resolution No.4: It is unanimously resolved to approve the break-up of the Internal assessment test marks 25 in **3rd and 4 th** semester B.Sc(Biotechnology) course of papers **III , IV & V** for adoption and implementation under Revised Choice Based Credit system.

1.Written exam-15marks
2.Record/seminar/assignment-5marks
3.Extracurricular activity-5marks

Resolution No.5: It is unanimously resolved to approve the qualifying marks in B.Sc(Biotechnology) Course for papers **III , IV & V of 3rd and 4 th** semester end examinations(Theory examination 40 marks and practical examinatios 20 marks)

Resolution No.6: It is unanimously resolved to reviewed the existing syllabi, model question papers of both theory and practicals of,**V and VI semester** B.Sc(Biotechnology) course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution No.7: It is unanimously resolved the existing syllabi for **I and II semester** B.Sc(Biotechnology) course of **paper-I, paper-II.**

Resolution No.8: : It is unanimously resolved the structure of the question papers, model question papers for B.Sc(Biotechnology) course of Paper **I , II** with maximum marks 75 of **1st**

and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25.

Resolution No. 9: It is unanimously resolved the syllabi, model question papers and break up of practical marks 50 of **1st and 2nd** semester end practical examinations in B.Sc(Biotechnology) course, of **papers I and II.**

Resolution No. 10 It is unanimously resolved the break-up of the Internal assessment test marks 25 in **1st and 2nd** semester B.Sc(Biotechnology) course of **papers I and II.**

Resolution No. 11: It is unanimously resolved the list of recommended text books and reference books which are listed at the end of syllabi of papers III, IV and V in B.Sc(Biotechnology) course.

Resolution No.12: It is unanimously resolved the MOUs with reputed Institutions, Organizations, Laboratories, Industries based upon the need of the curriculum, to facilitate faculty exchange programmes etc.,

Resolution No. 13: It is unanimously resolved the procure advanced equipment for laboratories to grade up and procure latest editions of text books, reference books, Journals, e-journals for library to make it more resourceful for both students and faculty members.

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM

(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Biotechnology

Paper – I BIOMOLECULES AND ANALYTICAL TECHNIQUES
(W.e.f. 2020-2021 admitted Batch)

Hours/week-4
Credits-4

UNIT I:

Carbohydrates, Protein and Lipids: Classification, structure, properties of carbohydrates. Classification, structure and properties of amino acids, peptide bond and peptides. Classification, structure (primary, secondary, tertiary, quaternary) and functions of proteins. Denaturation and renaturation of proteins. Classification structure and properties of saturated and unsaturated fatty acids. Structure and functions of glycolipids, phospholipids, and cholesterol.

UNIT II:

Nucleic acid, Vitamins and Bioenergetics: Structure and functions of DNA and RNA. Source, structure, biological role and deficiency manifestation of vitamin A, B, C, D, E and K. Free energy, entropy, enthalpy and redox potential. High energy compounds, Glycolysis, TCA cycle, Electron-Transport System and Oxidative Phosphorylation.

UNIT III:

Centrifugation, Chromatography and Electrophoresis: Basic principles of sedimentation and types of centrifugations. Principle, instrumentation and application of partition, absorption, paper, TLC, ion exchange, gel permeation, affinity chromatography. Introduction to HPLC, GCMS and LCMS. Basic principles and types of electrophoresis, factors affecting electrophoretic migration. PAGE (Native, SDS-PAGE). Introduction to 2D & Isoelectric Focusing.

UNIT IV:

Spectroscopy, Microscopy and Laser Techniques: Beer-Lambert law, light absorption and transmission. Extinction coefficient, Design and application of photoelectric calorimeter and UV-visible spectrophotometer. Introduction to crystallography and application. Types and design of microscopes - compound, phase contrast, fluorescent electron microscopy (TEM, SEM). Introduction to radioisotopes, measurement of radioactivity (scintillation counter and autoradiography).

UNIT V:

Biostatistics: Mean, median, mode, standard deviation, One-way Anova, Two-way Anova, t- test, F-test and chi-square.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Biotechnology
Paper – BIOMOLECULES AND ANALYTICAL TECHNIQUES
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : I B.Sc. (2020-21)

Paper : I

Title of the Paper : **Biomolecules and Analytical techniques**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part-2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	01	02	01	02	02

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree Examination Semester – I

Subject – **Biotechnology**

Paper –I BIOMOLECULES AND ANALYTICAL TECHNIQUES

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. Max marks :75m

SECTION -A (Essay Type Questions)

Answer All questions. Draw labelled diagrams wherever necessary. 5x10=50M

1. (A) Write about the classification and structure of amino acids ?

(OR)

(B) Write about structure and properties of saturated and unsaturated fatty acids?

2. (A) Describe about the Electron transport chain

(OR)

(B) Write bout the Kreb's cycle.

3. (A) Define centrifuge ? Write the principle and types of centrifugation?

(OR)

(B) Define affinity Chromatography? Write the procedure and applications.

4. (A) Define Microscope? Discuss about compound and phase – contrast microscope

(OR)

(B) What is radioactive? Explain about the measurementof radioactivity ?

5. (A) Write an essay on basic concepts of Mean, Median, Mode?

(OR)

(B) Write in detail about chi – square test and t – test

SECTION -B (Short Answer Type Question)

Answer any Five out of the following eight questions 5x5=25m

6. Polysaccharides
7. Fat soluble vitamins
8. m – RNA
9. HPLC
10. Microscopy
11. SEM
12. Standard deviation
13. Median

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Biotechnology
Paper – I BIOMOLECULES AND ANALYTICAL TECHNIQUES
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Define centrifuge ? Write the principle and types of centrifugation?

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Microscopy

3. Median

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree Examination Semester – I

Subject – Biotechnology

Paper – I BIOMOLECULES AND ANALYTICAL TECHNIQUES

(W.e.f. 2020-2021 admitted Batch)

PRACTICAL SYLLABUS

Hours/week-2 **Credits-1**

Details of Lab/Practical/Experiments/Tutorials syllabus:

1. Introduction to basic instruments (Principle standard operation procedure)demonstration and record.
2. Calculation of molarity, normality and molecular weight of compounds.
3. Qualitative analysis of carbohydrates (sugars)
4. Quantitative analysis of carbohydrates.
5. Quantitative estimation of protein - Lowery method.
6. Estimation of DNA by diphenylamine reagent.
7. Estimation of RNA by orcinol reagent.
8. Assay of protease activity.
9. Preparation of starch from potato and its hydrolyze by salivary amylase
10. reparation of standard buffer and pH determination.
11. Separation of amino acids by paper chromatography
12. eparation of lipids of TLC
13. garose gel electrophoresis
14. alculation of mean, median and mode.

RECOMMENDED BOOKS:

1. An Introduction to Practical Biochemistry, 3rd Edition, (2001), David Plummer; Tata McGraw Hill Edu. Pvt.Ltd. New Delhi, India
2. Biochemical Methods,1st Edition, (1995), S.Sadashivam, A.Manickam; New Age International Publishers, India
4. Recommended Co-curricular activities: (Co-curricular Activities should not promote copying from text book or from others' work and shall encourage self/independent and group learning)
   A. Measurable:
      1. Assignments on:
      2. Student seminars (Individual presentation of papers) on topics relating to:
      3. Quiz Programmes on:
      4. Individual Field Studies/projects:
      5. Group discussion on:
      6. Group/Team Projects on:
   B. General
      1. Collection of news reports and maintaining a record of paper-cuttings relating to topics covered in syllabus
      2. Group Discussions on:
      3. Watching TV discussions and preparing summary points recording personal observations etc., under guidance from the Lecturers

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – I
Subject – Biotechnology
Paper – I Biomolecules and Analytical techniques lab
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

MAJOR EXPERIMENT **1x20=20M**

1.Estimation of DNA by Diphenylamine method

MINOR EXPERIMENT **1X10=10M**

2.Write principle of paper chromatography and separate aminoacids

3.Identify the following spotters **5X2=10M**

A.Spectrophotometer

B.Centrifuge

C.PH meter

D.Colorimeter

E.TLC plate

5. Record **05M**

6.Viva-voce **05M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – BIOTECHNOLOGY
Paper – II MICROBIOLOGY ,CELL AND MOLECUALR BIOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Scope and Techniques of Microbiology: History and contribution of Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister and Alexander Fleming. Ultra structure of bacteria and growth curve. Pure culture techniques. Sterilization techniques, principles and application of physical methods (autoclave, hot air oven, incineration), chemical methods and radiation methods. Simple, gram and acid-fast staining.

UNIT II:

Microbial Taxonomy and Metabolism: Concepts of microbial species and strains. Classification of bacteria based on morphology, nutrition and environment. General characteristics, transmission and cultivation of viruses. Structure and properties of plant (tobacco mosaic virus, TMV), animal (Newcastle disease virus, NDV), human (Human immunodeficiency virus, HIV) and bacterial viruses (T4 phage). Emerging and reemerging viruses (dengue virus), zoonotic viruses (rabies, SARS- CoV-2). Microbial production of penicillin. Bacterial toxins, tuberculosis, typhoid. Introduction to fungi, algae and cytoplasm.

UNIT III:

Cell Structure and Functions: Structure, properties and functions of cellular organelles (E.R, Golgi bodies, Mitochondria, Ribosomes and Vacuoles) of eukaryotic cells. Cell cycle and cell division (mitosis and meiosis). Chemical composition and dynamic nature of the membrane, cell signaling and communication, endocytic pathways.

UNIT IV:

DNA Replication, Repair and Regulation of Gene Expression: DNA replication in prokaryotes and eukaryotes (semiconservative, dispersive, conservative, uni and bi-direction, rolling circle). Mechanism of DNA replication, enzymes and protein involved in DNA replication. DNA damage and repair. Regulation of gene expression in prokaryotes Lac and Trip operon concept.

UNIT V:

Central Dogma of Molecular Biology: Genome organization of prokaryotic and eukaryotic organisms. Genetic code, prokaryotic and eukaryotic transcription, enzymes involved in transcription. Post-transcriptional modification (Capping Poly adenylation) and splicing.

Translation: mechanism of translation in prokaryotic and eukaryotic cells (initiation, elongation, termination). Post-translational modification (glycosylation and phosphorylation).

RECOMMENDED BOOKS:

1. Microbiology–6th Edition, (2006), Pelczar M.J., Chan E.C.S., Krieg N.R.; The McGrawHill Companies Inc. NY
2. Prescott's Microbiology, 8th edition, (2010), Joanne M Willey, Joanne Willey, Linda Sherwood, Linda M Sherwood, Christopher J Woolverton, Chris Woolverton; McGrawHill Science Engineering, USA

3. Textbook of Microbiology, Anantnarayan and Paniker (2017)
4. Brock biology of microorganisms, 2003, Brock, T. D., Madigan, M. T., Martinko, J. M., & Parker, J.; Upper Saddle River (NJ): Prentice-Hall, 2003.
5. Genes XI, 11th edition, (2012), Benjamin Lewin; Publisher - Jones and Barlett Inc.USA
6. Molecular Biology of the Gene, 6th Edition, (2008), James D. Watson, J. D., Baker T.A., Bell, S. P., Gann, A., Levine, M., and Losick, R.; Cold Spring Harbour Lab. Press, Pearson Pub.
7. Molecular Biology, 5th Edition, (2011), Weaver R.; McGraw Hill Science. USA
8. Fundamentals of Molecular Biology, (2009), Pal J.K. and Saroj Ghaskadbi; Oxford University Press.
9. Molecular Biology: Genes to Proteins, 4th edition (2011), Burton E Tropp Jones& Bartlett Learning, USA.
10. Cell and Molecular Biology: Concepts and Experiments, 6th Edition, Karp, G. 2010.; John Wiley & Sons. Inc.
11. Cell and Molecular Biology, 8th edition. De Robertis, E.D.P. and De Robertis, E.M.F. 2006; Lippincott Williams and Wilkins, Philadelphia.
12. Cell Biology, (2017), De Robertis & De Roberis, Blaze Publishers & Distributors Pvt.Ltd.
13. The Cell: A Molecular Approach. 5th edition. Cooper, G.M. and Hausman, R.E. 2009. ASMPress & Sunderland, Washington, D.C.; Sinauer Associates, MA.
14. The World of the Cell, 7thedition, Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. 2009 Pearson Benjamin Cummings Publishing, San Francisco.
15. George M. Malacinski. 2013. Freifeder's Essentials of Molecular Biology. Narosa Publishing House.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Biotechnology
Paper – II MICROBIOLOGY ,CELL AND MOLECUALR BIOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : I B.Sc. (2020-21)

Paper : II

Title of the Paper : **MICROBIOLOGY , CELL AND MOLECUALR BIOLOGY**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	01	02	01	02	02

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree Examination Semester – II

Subject – BIOTECHNOLOGY

Paper – II MICROBIOLOGY ,CELL AND MOLECULAR BIOLOGY

Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max marks :75m**

SECTION -A (Essay Type Questions)

Answer All questions. Draw labelled diagrams wherever necessary. **5x10=50M**

1. (A) Define sterilization. Explain sterilization techniques

(OR)

(B) Write about gram and acid fast staining

2. (A) How micro organisms are classified based on the nutrition

(OR)

(B) Write about microbial production of penicillin

3. (A) Explain briefly about cell membrane

(OR)

(B) Explain briefly about Endoplasmic reticulum and Golgi bodies

4. (A) Write an Essay on mechanism of DNA replication

(OR)

(B) Discuss about DNA damage and repair

5. (A) Explain the process of transcription in Eukaryotes

(OR)

(B) Discuss about Genetic code

SECTION -B (Short Answer Type Question)

Answer any Five out of the following eight questions 5x5=25m

6. Simple staining
7. TMV
8. Bacterial toxins
9. .Mitosis
10. Operon concept
11. Enzymes involved DNA replication
12. protein synthesis process
13. Post transcriptional modification

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Biotechnology
Paper – II MICROBIOLOGY ,CELL AND MOLECUALR BIOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Define sterilization. Explain sterilization techniques

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Bacterial toxins
3. Mitosis

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
I B.Sc. Degree Examination Semester – II
Subject – Biotechnology
Paper II MICROBIOLOGY ,CELL AND MOLECUALR BIOLOGY
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

Hours/week-2 **Credits-1**

List of Practical's:-

1. Demonstration, use and care of microbial equipment
2. Cleaning and preparation of glassware
3. Preparation of nutrient agar medium for bacteria
4. Preparation of PDA medium for fungi
5. Sterilization techniques (autoclave, hot air oven, filter)
6. Isolation of bacteria from soil
7. Simple staining technique
8. Differential staining technique
9. Microbial counting by Haemocytometer
10. Identification of different bacteria
11. Motility test by hanging drop
12. Biochemical identification of bacteria
13. Preparation of pure culture by slab, slant, streak culture
14. Study of stages of mitotic cell division
15. Study of stages of meiotic cell division
16. Isolation of chloroplast
17. Extraction and isolation of DNA from bacteria.

RECOMMENDED BOOKS:

1. David A. Thompson. 2011. Cell and Molecular Biology Lab. Manual.
2. P.Gunasekaran. 2007. Laboratory Manual in Microbiology. New Age International.
3. D O Hall, S E Hawkins. 1974. Laboratory Manual of Cell Biology. British Society for Cell Biology, Published by Crane, Russia.
4. Mary L. Ledbetter. 1993. Cell Biology: Laboratory Manual. Edition: 2. Published byRon Jon Publishing. Incorporated.
5. Gunasekaran, P. 2009. Laboratory Manual in Microbiology. 1st Edition. New Age International Publishers.
6. Dr. T. Sundararaj. Microbiology Laboratory Manual. 2005. Dr.A.L. MPGIBMS, University of Madras, Taramani, Chennai – 600 113.
7. James G. Cappuccino and Natalie Sherman. 2013. Microbiology: A Laboratory Manual. 10th Edition. Benjamin Cummings.
8. Dr. David A Thompson. 2011. Cell and Molecular Biology Lab Manual.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
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I B.Sc. Degree Examination Semester – II
Subject – Biotechnology
Paper II MICROBIOLOGY ,CELL AND MOLECUALR BIOLOGY

(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

MAJOR EXPERIMENT **1x20=20M**

1. Write procedure for isolation of bacteria from soil and carryout the experiment

MINOR EXPERIMENT **1X10=10M**

2. Write principle and procedure of simple staining and experiment

Identify given spotters **5 x 2=10**

a) HOT-air oven

b) Stages of meiosis

c) Types of bacteria based on shape

d) HIV

e) Okazaki fragments

Record **05M**

Viva-voce **05M**

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – BIOTECHNOLOGY
Paper –III IMMUNOLOGY AND rDNA TECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Concepts, Cells and Organs of the Immune System: Terminology, antigen, hapten, antibody (types), antigenicity, immunogenicity and types of immunity. Innate and adaptive immunity. Hematopoiesis, organs, tissues, cells and mediators of the immune system (primary and secondary lymphoid organs, lymphocytes and cytokines). Introduction to complement components, MHC. Basic concepts of humoraland cell-mediated immune response.

UNIT II:

Vaccinology and Clinical Immunology: Live, killed, attenuated, subunit and recombinant vaccines. Role and properties of adjuvants. Hybridoma technology, monoclonal antibodies and their application in immunodiagnosis. Antigen and antibody interactions - precipitation, agglutination, immune diffusion and ELISA. Introduction to hypersensitivity and autoimmunity.

UNIT III:

Introduction, Tools and Techniques of rDNA Technology: Introduction to rDNA technology, steps involved in cloning, tools of genetic engineering(Genes, Cloning vectors - plasmids and cosmids, Enzymes – restriction endonucleases and DNA Ligase, Hosts – bacteria and yeast). Principles and application of PCR. Southern, Northern and Western Blotting. Introduction to DNA sequencing (Sanger Sequencing) andSite-directed Mutagenesis.

UNIT IV:

Cloning Strategies and Application of rDNA Technology: rDNA library, construction, methods of transformation, recombinant selection and screening methods. Applications of rDNA technology in agriculture (transgenic plants, edible vaccines and antibodies) and medicine (disease diagnosis and DNA fingerprinting).

UNIT V:

Bioinformatics: Databases (PubMed, NCBI, EMBL and ExPASy), nucleotide and protein BLAST analysis, CLustal W and phylogenetic tree construction. Introduction to omics (proteomics, genomics and transcriptomics). Introduction to nanotechnology.

RECOMMENDED BOOKS:

1. Kuby immunology, Judy Owen, Jenni Punt, Sharon Stranford., 7th edition (2012), Freeman and Co., NY
2. Textbook of basic and clinical immunology, 1st edition (2013), Sudha Gangal and Shubhangi Sontakke, University Press, India
3. Immunology, 7th edition (2006), David Male, Jonathan Brostoff, David Roth, Ivan Roitt, Mosby, USA.
4. Immuno diagnostics, 1996, By S.C. Rastogi, Publ: New Age
5. Introduction to Immunology- 2002, C. V. Rao- Narosa Publishing House

6. Textbook of Biotechnology - 2007, By H.K. Das (Wiley Publications)
7. Principles of Gene Manipulation - 7th edition, 2006, By R.W. Old & S.B. Primrose,Publ: Blackwell
8. Molecular Biology & Biotechnology- 1996, By H.D. Kumar, Publ: Vikas
9. Molecular Biotechnology - 4th edition, 2010, G.R. Click and J.J. Pasternak, Publ:Panima
10. Genes and Genomes – 1991, By Maxine Singer and Paul Berg
11. Genes VII- 2000, By B. Lewin - Oxford Univ. Press
12. Molecular Biology - 4th Edition, 2008, By D. Freifelder, Publ: Narosa Publishing house New York, Delhi
13. Brown TA. (2006). Gene Cloning and DNA Analysis. 5th edition. Blackwell Publishing, Oxford, U.K.
14. Clark DP and Pazdernik NJ. (2009). Biotechnology-Applying the Genetic Revolution.

    Elsevier Academic Press, USA.
15. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington
16. Primrose SB and Twyman RM. (2006). Principles of Gene Manipulation and Genomics, 7th edition. Blackwell Publishing, Oxford, U.K.
17. Introduction to Bioinformatics – 2007, By V. Kothekar
18. Introduction to Bioinformatics – 2013, By Arthur M. Lesk
19. Bioinformatics: 2001, Sequence and Genome Analysis by David W. Mount, Cold Spring Harbor Laboratory Press
20. Biological Sequence Analysis: 1st Edition, 1998, Probabilistic Models of Proteins and Nucleic Acids by Richard Durbin, Sean R. Eddy, Anders Krogh, Graeme Mitchison, Cambridge University Press
21. Bioinformatics tools and Resources – free online tools, software packages,Bioinformatics books and Journals, Bioinformatics web-portal

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Biotechnology
Paper – III IMMUNOLOGY AND rDNA TECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : I B.Sc. (2020-21)

Paper : III

Title of the Paper : **IMMUNOLOGY AND rDNA TECHNOLOGY**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	02	01	01

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – BIOTECHNOLOGY
Paper – III IMMUNOLOGY AND rDNA TECHNOLOGY
Model question paper (W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max marks :75m**

SECTION -A (Essay Type Questions)

Answer all the questions. Each question carries 10 marks. **5 X 10M = 50M**

1.a) Explain the different organs of immune system

(OR)

b) Write about immunity and explain the types of immunity.

2.a) What is vaccine? Explain the different types of vaccines?

(OR)

b) Explain the different types of Ag-Ab reactions

3.a) Write about tools and steps involved in genetic engineering

(OR)

b) Explain blotting techniques

4.a) Write about applications of r-DNA technology in agricultural field

(OR)

b) What is transformation? Write about methods of transformation

5.a) Explain about nanotechnology and its importance

(OR)

b) Explain about protein BLAST method

SECTION -B (Short Answer Type Question)

Answer any Five out of the following eight questions **5x5=25m**

6.MHC

7.Hematopoiesis

8.Properties of Adjuvants

9.Monoclonal Antibodies Applications

10.Sanger Sequencing

11.Principle of PCR

12.DNA Fingerprinting

13.Proteomics

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Biotechnology
Paper – III IMMUNOLOGY AND rDNA TECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Write about applications of r-DNA technology in agricultural field

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Monoclonal Antibodies Applications

3. Proteomics

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Biotechnology
Paper – III IMMUNOLOGY AND rDNA TECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

Hours/week-2 **Credits-1**

List of Practical: -

1. Determination of Blood Groups
2. Pregnancy test
3. Widal test
4. Ocuteroloney immunodiffusion
5. Radial immune diffusion
6. ELISA
7. Production of antibodies (theory exercise)
8. Bleeding, separation of serum and storage
9. Lymphoid organs (theory exercise)
10. Isolation of plasmid DNA (alkaline lysis method)
11. Analysis of plasmid DNA by Agarose gel electrophoresis
12. Southern blotting (theory exercise)
13. PCR Amplification (theory exercise)

Recommended books:

1. Sambrook J, Fritsch EF and Maniatis T. (2001). Molecular Cloning-A LaboratoryManual. 3rdedition. Cold Spring Harbor Laboratory Press.
2. Bioinformatics: 2004, A Practical Guide to the Analysis of Genes and Proteins,Andreas D. Baxevanis, B. F. Francis Ouellette, Wiley-Interscience

Recommended Co-curricular activities: (Co-curricular Activities should not promote copying from text book or from others' work and shall encourage self/independent and group learning)

A. Measurable:
   1. Assignments on:
   2. Student seminars (Individual presentation of papers) on topics relating to:
   3. Quiz Programmes on:
   4. Individual Field Studies/projects:
   5. Group discussion on:
   6. Group/Team Projects on:

B General
1. Collection of news reports and maintaining a record of paper-cuttings relating to topics covered in syllabus
2. Group Discussions on:
3. Watching TV discussions and preparing summary points recording personal observations

etc., under guidance from the Lecturers

4. Any similar activities with imaginative thinking.

Recommended Continuous Assessment methods:

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – III
Subject – Biotechnology
Paper – III IMMUNOLOGY AND rDNA TECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

1. MAJOR EXPERIMENT **1x20=20M**

1.Write principle and procedure for isolation of plasmid DNA and carryout experiment.

2. MINOR EXPERIMENT

2. Determination of blood group 1x**10=10M**

3. Identify the spotter **5 x2=10M**

a) Lymhoid organs

b) Cosmids

c) ELISA

d) BLAST

e) RIA

4. Record **5M**

5.Viva-voce **5M**

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:

Plant tissue culture techniques & secondary metabolites production: Plant tissue culture: to tipotency, media preparation – nutrients and plant hormones; sterilization techniques; establishment of cultures – callus culture, cell suspension culture ,applications of tissue culture-micro propagation; Somatic embryogenesis; synthetic seed production; protoplast culture and somatic hybridization - applications. Cryopreservation,Plant secondary metabolites- concept and their importance

UNIT II:

Transgenesis and Molecular markers: Plant transformation technology-- Agrobacterium mediated Gene transfer (Ti plasmid), hairy root features of Ri plasmid,Transgenic plants as bioreactors. Herbicide resistance – glyphosphate, Insect resistance- Bt cotton,,Molecular markers - RAPD, RFLP and DNA fingerprinting-principles and applications.

UNIT III:

Animal tissue culture techniques: Animal cell culture: cell culture media and reagents; culture of mammalian cells, tissues and organs; primary culture, secondary culture, cell lines,stem cell cultures; Tests: cell viability and cytotoxicity, Cryopreservation. Transfection methods (calcium phosphate precipitation, electroporation, Microinjection) and applications.

UNIT IV:

Transgenic animals & Gene Therapy: Production of vaccines, diagnostics, hormones and other recombinant DNA products in medicine (insulin,somatostatin, vaccines),IVF, Concept of Gene therapy, Concept of transgenic animals – Merits and demerits -Ethical issues in animal biotechnology.

UNIT V:

Bioethics, Biosafety and IPR: Bioethics in cloning and stem cell research, Human and animal experimentation, animal rights/welfare. Bio safety-introduction to biological safety cabinets; primary containment for biohazards; biosafety levels; GLP,GMP, Introduction to IP-Types of IP: patents, trademarks & copyright

RECOMMENDED BOOKS:

1. Introduction to Plant Tissue Culture..M.K. Razdan ,2003,Science Publishers
2. Plant Tissue Culture, kalyan Kumar De,199 M7, New Central Book Agency
3. Biotechnology – By U. Satyanarayana;1997
4. Plant Cell, Tissue and Organ Culture, Applied and Fundamental Aspects By Y.P.S. Bajaj and A. Reinhard ,2001
5. Introduction to Plant Tissue Culture, M. K. Razdan, 2003,Science Publishers
6. A Textbook of Biotechnology,R C Dubey,S. 2014,Chand Publishing
7. Elements of Biotechnology,P. K. Gupta, 1994,Rastogi Publications
8. Daniel R. Marshak, Richard L. Gardner, David Gottllieb "Stem cell Biology" edited byDaniel 2001,Cold Spring Harbour Laboratory press, New York
9. M.M. Ranga, Animal Biotechnology; Agrobios (India) ,2006.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : II B.Sc. (2020-21)

Paper : IV

Title of the Paper : **PLANT AND ANIMAL BIOTECHNOLOGY**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	02	01	01

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – BIOTECHNOLOGY
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
Model question paper (W.e.f. 2020-2021 admitted Batch)
Time: 3 Hrs. **Max Marks : 75**

SECTION -A (Essay Type Questions)

Answer all the questions. Each question carries 10 marks. **5 X 10M = 50M**

1. a) What are metabolites and explain different plant secondary metabolites
   (OR)
   b) Explain different types of cultures

2. a) Explain the herbicide and insecticide resistance in transgenesis process
   (OR)
   b) What are transgenic plants? Write a note on transgenic plants as bioreactors
3. a) What are cell cultures and explain different types of cell cultures
   (OR)
   b) What is transfection and explain different methods of transfection

4. a) Write a note on transgenic animals with merits and demerits
   (OR)
   b) Write about recombinant DNA products in medicine

5. a) Explain about human and animal experimentation
   (OR)
   b) Explain about biosafety and different levels in biosafety

SECTION – B

Answer any 5 questions. Each question carries 5 marks. **5 X 5M = 25M**

1. Micro propagation
2. Cryopreservation
3. RAPD
4. Ti-Plasmid
5. Somatic embryogenesis
6. Cell lines
7. IVF
8. Animal rights

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Explain about human and animal experimentation

Sec-B

II Answer the Following Short answer question **02x04=08**

2. RAPD
3. IVF

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

List of Practical's:

1. plant culture media and composition of MS media
2. Raising of aseptic seedlings
3. Induction of callus from different explants, cytology of callus
4. Plant propagation through Tissue culture (shoot tip and Nodal culture)
5. Establishing a plant cell culture (both in solid and liquid media)
6. suspension cell culture
7. Cell count by hemocytometer.
8. Establishing primary cell culture of chicken embryo fibroblasts.
9. Animal tissue culture – maintenance of established cell lines.
10. Animal tissue culture – virus cultivation.
11. Estimation of cell viability by dye exclusion (Trypan blue).
12. ELISA – Demonstration

RECOMMENDED BOOKS:

1. R. Ian Freshney, "Culture of animal cells – A manual of basic techniques" 4th edition,John Wiley & Sons, 2000 ,Inc, publication, New York
2. Plant Tissue Culture : Theory and Practice By S.S. Bhojwani and A. Razdan,1998

Recommended Co-curricular activities: (Co-curricular Activities should not promote copying from text book or from others' work and shall encourage self/independent and group learning)

A. Measurable:
   1. Assignments on:
   2. Student seminars (Individual presentation of papers) on topics relating to:
   3. Quiz Programmes on:
   4. Individual Field Studies/projects:
   5. Group discussion on:
   6. Group/Team Projects on:

B. General
   1. Collection of news reports and maintaining a record of paper-cuttings relating to topics covered in syllabus
   2. Group Discussions on:
   3. Watching TV discussions and preparing summary points recording personal

observations etc., under guidance from the Lecturers

4. Any similar activities with imaginative thinking.

Recommended Continuous Assessment methods

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – IV PLANT AND ANIMAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

1. **MAJOR EXPERIMENT**
   Write procedure for process of callus induction from different explants **20M**

2. **MINOR EXPERIMENT**
   Suspension cultures **10M**

3. **IDENTIFY THE SPOTTERS** **2 x 5 = 10M**

   1) RFLP
   2) Bt-Cotton
   3) Bioreactor
   4) Plasmid
   5) Chick embryo fibroblast

4. **Record** **5M**

5. **Viva** **5M**

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

UNIT I:
Pollution Types and Control: Environmental Biotechnology-Environmental Pollution: Types of pollution, air pollution & its control through Biotechnology, Biofilters, Bioscrubbers, Biotrickling filter. Water pollution and its management: Measurement of water, pollution, sources of water pollution. Microbiology of waste water treatment, aerobic processes, activated sludge, oxidation ponds, trickling filters, and rotating biological contactors. Anaerobic processes: Anaerobic digesters, upward flow anaerobic sludge blanket reactors.

UNIT II:
Bioremediation: Biodegradation and Bioremediation – Concepts & principles of Bioremediation, Bioremediation of Hydrocarbons and its applications Degradation of pesticides and other toxic chemicals by microorganism. Role of genetically Engineered microbes, Concept of Phytoremediation, , environmental safety guidelines.

UNIT III:
Biofuels: Biofuels-biogas, microbial groups involved in biogas production & interactions, factors affecting biogas production, Biofertilizers, Vermiculture.

UNIT IV:
Basic principles of Microbial technology: Industrially important microbes, its screening, selection and identification. Maintenance and preservation of industrially important microbial cultures. Strain Improvement, Basic concepts of fermentation; Design of fermenter and applications.

UNIT V:
Commercial Production of Microbial products: Microbial technology products and applications; Microbial production of Organic acids (Lactic acid, citric acid), Amino acids (Glutamicacid, Aspartic acid and Lysine). Fermentation by microbes for food additives: dairy products (Cheese, Yogurt), beverages (Beer,Wine) and antibiotics (Streptomycin, Pencillin)

RECOMMENDED BOOKS :

1. K. Vijaya Ramesh, Environmental Microbiology, 2004,MJP Publishers, Chennai.
2. A.G. Murugesan, C. Raja Kumari, Environmental Science & Biotechnology - Theory & Techniques, 2005,MJP Publishers
3. Environmental microbiology by Raina M.Maier Ian L.Pepper &Charles P.Gerba,2000,Academic press.

4. Environmental Chemistry, A.K. De. Wiley Eastern Ltd.,2001, New Delhi
5. Introduction of Biodeterioration, D. Allsopp and K.J. Seal, ELBS/Edward Arnold,2008
6. Power un seen: How microbes rule the world. By Dixon, B. Freeman/ Spectrum, 1994,Oxford.
7. Environmental Microbiology. By. Mitchell. R. Wiley,1992, New York
8. Introduction to Environmental Sciences, Y. Anjaneyulu ,2004, BS Publications
9. Industrial Microbiology by A.H.Patel,2009
10. Prescott & Dum (2002) Industrial Micrbiology, Agrabios (India) ,2005,Publishers
11. Creueger W. & Crueger A.A Text of Industrial Microbiology,2000, 2nd Edition,Panima Publishers corp.

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
GUIDE LINES TO QUESTION PAPER SETTERS

Year : II B.Sc. (2020-21)

Paper : IV

Title of the Paper : **PLANT AND ANIMAL BIOTECHNOLOGY**

Periods of working per week : 4 hrs

Duration of exam : 3hrs

Max Marks : 75

Time :3 hrs **Max marks-75**

Part-1 Essay type questions.Each question carries **TEN** marks. **5X10=50 M**
FIVE questions are to be given at the rate of TWO internal
Choicequestions from each unit(Total Five units) and student has to answer **ALL**

Part2 Paragraph type questions. Each question carries **FIVE** marks. **5x5=25 M**
EIGHT questions are to be given and student has to answer any **FIVE**

BLUE PRINT

QUESTIONS	UNIT-I	UNIT -II	UNIT-III	UNIT-IV	UNIT-V
Essay Questions(1-5)	A (or) B	A (or) B	A (or) B	A (or) B	A (or) B
Short Answer questions (6-13)	02	02	01	01	02

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – BIOTECHNOLOGY
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
Model question paper
(W.e.f. 2020-2021 admitted Batch)

Time: 3 Hrs. **Max Marks : 75**

SECTION -A (Essay Type Questions)

Answer all the questions. Each question carries 10 marks. **5 X 10M = 50M**

1. a) Explain the microbiology of waste water treatment
   (OR)
   b) Explain about biofertilizers and their application
2. a) Explain biodegradation and bioremediation processes
   (OR)
   b) Write about role of genetically engineered microbes
3. a) Write about biogas production
   (OR)
   b) Write about factors affecting biogas production
4. a) Explain about preservation of industrial microbial cultures
   (OR)
   b) Explain design and process of fermentation with an example
5. a) Explain about microbial production of organic acids
   (OR)
   b) What are food additives and explain the process of fermentation for food additives

SECTION – B

Answer any 5 questions. Each question carries 5 marks. **5 X 5M = 25M**

1. Air pollution
2. Oxidation ponds
3. Hydro carbons applications
4. Phytoremediation
5. Biofertilizers
6. Vermiculture
7. Fermenter applications
8. Streptomycin

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME: 01Hr **Written examination** **Max Mark:15M**

Sec-A

I Answer the Following Essay question **01X07=07M**

1. Explain about microbial production of organic acids

Sec-B

II Answer the Following Short answer question **02x04=08**

2. Oxidation ponds
3. Vermiculture

D.N.R. COLLEGE (AUTONOMOUS) BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
PRACTICAL SYLLABUS

List of Practicals:

1. Detection of coli forms for determination of the purity of potable water.
2. Determination of total dissolved solids of water
3. Determination of Hardness and alkalinity of water sample.
4. Determination of dissolved oxygen concentration of water sample
5. Determination of biological oxygen demand of sewage sample
6. Determination of chemical oxygen demand (COD) of sewage sample.
7. Isolation of industrially important microorganisms from soil.
8. Isolation of amylase producing organisms from soil.
9. Production of α – amylase from Bacillus Spp. by shake flask culture.
10. Production of alcohol or wine using different substrates.
11. Production of citric acid by submerged fermentation
12. Estimation of citric acid by titrimetry.

B. Recommended Co-curricular activities: (Co-curricular Activities should not promote copying from text book or from others' work and shall encourage self/independent and group learning)

C. Measurable:

7. Assignments on:
8. Student seminars (Individual presentation of papers) on topics relating to:
9. Quiz Programmes on:
10. Individual Field Studies/projects:
11. Group discussion on:
12. Group/Team Projects on:

D. General

6. Collection of news reports and maintaining a record of paper-cuttings relating to topics covered in syllabus
7. Group Discussions on:
8. Watching TV discussions and preparing summary points recording personal observations etc., under guidance from the Lecturers
9. Any similar activities with imaginative thinking.

C. Recommended Continuous Assessment methods:

D.N.R. COLLEGE (AUTONOMOUS)BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
II B.Sc. Degree Examination Semester – IV
Subject – Biotechnology
Paper – V ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY
(W.e.f. 2020-2021 admitted Batch)
MODEL QUESTION PAPER
SEMESTER END EXAMINATION

TIME-3 HOURS **MAX MARKS-50**

1. **MAJOR EXPERIMENT**

Write procedure for BOD determination and carryout experiment **20M**

2. **MINOR EXPERIMENT**

Write procedure for determination of hardness of water **10M**

3. **IDENTIFY THE SPOTTERS** **2 x 5 = 10M**

1) Fermenter

2) Principle of wine preparation

3) Identify given product from the spotter

4) Biodegradation principle

5) Identify structure of amino acid

4. **RECORD** **5M**
5. **VIVA** **5M**

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)
III B.Sc./BIOTECHNOLOGY/Semester V / Paper III A / Theory/ Syllabus
BT 501: GENETICS AND MOLECULAR BIOLOGY
(W.e.f. 2017-18)

SYLLABUS FOR FIFTH SEMESTER - 2017

UNIT I
Mendels Laws and Inheritance
Mendel experiments, Mendel Laws and deviations: incomplete dominance and Co dominance Penetration and pleiotropism, Recessive and Dominant epistatic gene interactions. Concept of multiple alleles

UNIT II
Genes and their variations
Structure of gene, gene and environment, gene copies and heterogeneity, Meiotic non disjunction of chromosomes, chromosome abnormalities in animals and plants, Linkage, recombination, gene maps, interference and coincidence. Sex determination, genetic population studies and Hardy Weinberg Equations.

UNITIII
DNAReplication
Enzymology of replication (detailed treatment of DNA polymerase I,brief treatment of pol II and III,helicases, topoisomerases, Single strand binding proteins, DNA melting proteins,primase and RNAprimers,distributive and processive properties of DNA polymerasel and III, importance of the-sub unit in polymerase III),proof for semiconservative replication,discontinuous replication and Okazaki fragments,Replication origins, initiation, primosome formation,elongation, and termination.Use of DNA replication mutants in the study of replication.

UNITIV
Mutations
Gene mutations: Induced and Spontaneous, Missense, nonsense and frameshift mutations.
Mutagens:Physical and chemical mutagens.

UNIT V
DNARepair Mechanisms
Repair: Mismatch repair, light induced repair SOS repair. Rec gene and its role in DNA repair, post replication repair

UNIT VI
Transcription
Enzymatic synthesis of RNA:Basic features of transcription,structure of prokaryotic RNA polymerase (core enzyme and holoeyme, Significance of factor),concept of promoter(Pribnowbox,-10and-35sequences and their significance).
Four steps of transcription (Promoter binding and activation, RNA chain initiation and promoter escape, chain elongation, termination and release) regulation of Transcription, Reverse transcription.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of FIFTH Semester
BIOTECHNOLOGY
Paper III A (BT501) GENITICS AND MOLECULAR BIOLOGY
w.e.f., 2017- 18 for 2015 -16 admitted batch

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrs Max Marks:75

Title of the Paper	:	III A GENITICS AND MOLECULAR BIOLOGY
Periods of working per week	:	3hrs
Duration of exam	:	3hrs
Max Marks	:	75

PART- I (Long Answer Questions) 04X12=48 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 12 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of SEVEN questions
Student has to answer ALL questions.
Total SEVEN questions should be given. one question should be given from each unit I,II,III,IV,V,VI . (SEVENTH question can be given from any unit based on its importance)

[Note; question paper should be given keeping in view the different learning ablilities of students namely brigtht,above average and average].

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc. **(BIOTECHNOLOGY),** Semester V
Theory Paper – IIIA: GENETICS AND MOLECULAR BIOLOGY
INTERNAL ASSESMENT TEST
(w.e.f. 2017-18)

Max Marks: 25 M

(i)	Written Examination	: 15 M
(ii)	Assignment/ Seminar/Quiz	: 05 M
(iii)	Extracurricular Activities	: 05 M

Time: 01 Hour Written Examination **Max Marks: 15 M**

Section – A

I. Answer the Following Essay question **01×06=06 M**

1. Write an essay on chromosomal Abnormalities in Plants and Animals

Section – B **02×03=06 M**

II Answer the following short answer questions

2. Gene Copies and Heterogenity
3. Post Replicative Repair

Section – C **03×01=03 M**

1. Answer all the following questions with one or two sentences

4. 35 Sequence
5. Topoisomerase
6. Reverse transcriptase

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc./BIOTECHNOLOGY/Semester V / Paper IIIA/ Theory/ Model question paper

BT 501:GENETICS AND MOLECULAR BIOLOGY

(W.e.f. -2017-2018)

Time: 03hrs **Max. Marks: 75**

Part – I

I Answer **any FOUR** questions from the following **04 x 12 =48 M**

1. Explain about deviations of mendel's laws
2. Write an essay on chromosome abnormalities in plants and animals
3. Write an essay on enzymology of DNA replication
4. Write a note on gene mutation
5. Describe various DNA repair mechanisms
6. Elaborate the process of transcription

Part – II

II. Write short notes on **any FOUR** of the following questions **04X05=20 M**

7. Multiple alleles
8. Gene and environment
9. Semiconservative Replication
10. Chemical mutagens
11. Recombinant repair
12. promotors

Part—III

III. Write Very Short answer to all the following **07X01=07 M**

13. pleiotrophism
14. Recombination
15. Okazaki fragments
16. primosomes
17. Frameshift mutations
18. Photoreactivation
19. Holoenzymes

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc. (BIOTECHNOLOGY), V Semester
Practical Paper III A (BT 501), GENETICS AND MOLECULAR BIOLOGY
(W.e.f. -2017)

Year	: III B.Sc. (2017)
Practical Paper	: III A (BT 501)
Title of the Paper	: **GENETICS AND MOLECULAR BIOLOGY**
Periods of working per week	: 2 hrs.
Duration of exam	: 3 hrs.
Max. Marks	: 50

PRACTICAL SLLABUS
BT 501: GENETICS AND MOLECULAR BIOLOGY

1. Effect of UV radiations on the growth of microorganisms.
2. Isolation of plasmid DNA from bacteria
3. Purity analysis of the Nucleic acids
4. Study of different phases of mitosis in onion root tips and meiosis in *Allium cepa*flower buds.
5. Karyotyping in Allium or Drosophila.
6. Problems and assignments in Mendilian genetics.
7. Isolation of auxotrophic mutants (plants or insects).
8. Mutation of bacteria by UV.
9. Chemical induced mutation in bacteria

Note:-Mandatorytoperformatleast6practical

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-V Semester/Paper -IIIA- Practical

PRACTICAL MODEL QUESTION PAPER

BT (501) GENETICS AND MOLECULAR BIOLOGY

Time: 3 Hrs Max Marks: 50

1. Major Experiment - Perform mitosis for the given onion root tips and report various stages of mitotic division 30M

Principle	10M
Procedure	10M
Observation	5M
Result	5M

2. Identify the following Spotters 5M

a.

b.

3.write the principle and procedures for the following experiments

(A) Purity analysis of the Nucleic acids 5M

(b) Mutation of bacteria by UV

4. Record and VIVA Voice 10M

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc./BIOTECHNOLOGY/Semester V / Paper IV A / Theory/ Syllabus

BT 502: GENE EXPRESSION &r DNA TECHNOLOGY

(W.e.f. 2017-18)

SYLLABUS FOR FOURTH SEMESTER - 2017

UNIT I

Genetic Code

Genetic code: Codon and its characteristics, experimental elucidation of codons, identification of start and stop codons, universality, degeneracy and commaless nature of codons.

The decoding system: aminoacyl synthetases,the adaptor hypothesis, attachment of aminoacids to tRNA.

Codon-anticodon interaction-the wobble hypothesis.

Selection of initiation codon-Shine and Dalgarno sequence and the16SrRNA.

UNITII

Proteinsynthesis:

Initiation,elongation, termination and post translational modification.

Regulation of translation:phage T4 protein p32 translational regulation. Antibiotics affecting translation.

UNIT III

Gene Expression and regulation

Details of initiation, elongation, and termination (intrinsic and rho factor mediated termination).

Regulation of Transcription in Prokaryotes: Basic idea of lac- and trp-operons. Negative and positive control of lac operon

Eukaryotic Gene Regulation: Gal operon

UNIT IV

rDNA Technology

DNA Coning: Basics of genetic engineering, restriction endonucleases, other enzymes of DNA manipulation.

Cutting and joining DNA (Cohesive end ligation, methods of blunt end ligation).Transfection and transformation. Selection of transformed cells. Screening methods.

UNIT V

Vectors: Plasmid vectors (pBR322 and pUC18/19)

Phagevector: Lambdareplacement andinsertion

vectors Cosmids,phagemids, andYAC.

UNIT VI

Genomic DNA library and cDNA library–Concept and methods of creating these libraries. Advantages and disadvantages of cDNA library over genomic DNA library.

General consideration of Polymerase chain reaction, designing of primers for PCR.

Expression of cloned genes: General features of an expression vector.Expression of a eukaryotic gene in prokaryotes –advantages and problems. Applications of recombinant DNA technology.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of FIFTH Semester
BIOTECHNOLOGY
Paper IVA (BT502) GENE EXPRESSION AND rDNA TECHNOLOGY
w.e.f., 2017- 18 for 2015 -16 admitted batch

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrs Max Marks:75

Title of the Paper	:	IV A gene expression and rdna technology
Periods of working per week	:	3hrs
Duration of exam	:	3hrs
Max Marks	:	75

PART- I (Long Answer Questions) 04X12=48 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 12 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of SEVEN questions
Student has to answer ALL questions.
Total SEVEN questions should be given. one question should be given from each unit
I,II,III,IV,V,VI . (SEVENTH question can be given from any unit based on its importance)

[Note; question paper should be given keeping in view the different learning ablilities of students namely brigtht,above average and average].

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc. **(BIOTECHNOLOGY),** Semester V
Theory Paper – IVA: GENE EXPRESSION AND rDNA TECHNOLOGY
INTERNAL ASSESMENT TEST
(w.e.f. 2017-18)

Max Marks: 25 M

(iv) Written Examination : 15 M
(v) Assignment/ Seminar/Quiz : 05 M
(vi) Extracurricular Activities : 05 M

Time: 01 Hour Written Examination **Max Marks: 15 M**

Section – A

II. Answer the Following Essay question **01×06=06 M**

2. Write an essay on Enzymes of DNA Manipulation

Section – B **02×03=06 M**

II Answer the following short answer questions

2. Designing primers for PCR
3. Cosmids

Section – C **03×01=03 M**

2. Answer all the following questions with one or two sentences

7. Shine dalgarno sequence
8. Cohesive ends
9. C DNA Libraries

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc./BIOTECHNOLOGY/Semester V / Paper IV A / Theory/ Model question paper

BT 502: GENE EXPRESSION &r DNA TECHNOLOGY

(W.e.f. -2017)

Time: 03hrs **Max. Marks: 75**

Part – I

I Answer **any FOUR** questions from the following **04 x 12 =48 M**

20. Describe briefly genetic code and its features
21. Write an essay on post translational modifications
22. Write an essay on eukaryotic gene regulation
23. Write an essay on gene cloning
24. Explain about selection of transformed host cells
25. Write an essay on applications of rDNA technology

Part – II

II. Write short notes on **any FOUR** of the following questions **04X05=20 M**

26. Wobble hypothesis
27. Antibiotics affecting translation
28. Negative control of lac operon
29. Phagemids
30. Transfection
31. Genomic DNA libraries

Part –III

III. Write Very Short answer to all the following **07X01=07 M**

32. SDS
33. Translation
34. Gal operon
35. Cohesive Ends
36. YAC Vectors
37. PCR
38. Expression Vectors

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc. (BIOTECHNOLOGY), V Semester
Practical Paper IV A, BT 502 GENE EXPRESSION & r DNA TECHNOLOGY
(W.e.f. -2015-2016 Admitted Batch)

Year	: III B.Sc. (2017)
Practical Paper	: IV A (BT 502)
Title of the Paper	: **GENE EXPRESSION & rDNA TECHNOLOGY**
Periods of working per week	: 2 hrs.
Duration of exam	: 3 hrs.
Max. Marks	: 50

PRACTICAL SLLABUS

BT 502: GENE EXPRESSION&rDNATECHNOLOGY

1.To measure concentration of DNA & RNA by UV Spectrophotometry

2.Estimation of proteins by Bradford method

3.Isolation of genomicDNA.

4.Isolation of PlasmidDNA.

5.Restriction digestion of DNA.

6.Demonstration of Replica plating technique

7.Identification of Lac+ bacteria by blue white screening using IPTG

8.Ligation of DNA

9.Chemical mutagenesis and production of microbial mutants.

Note:-Mandatory to perform atleast 6 practical

* ** * * * *

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-V Semester/Paper -IVA- Practical

PRACTICAL MODEL QUESTION PAPER

BT (501) GENE EXPRESSION AND rDNA TECHNOLOGY

Time: 3 Hrs Max Marks: 50

1. Major Experiment - Estimate the amount of protein in the given sample by Barfords methods and draw the calibrations curve 30M

Principle	10M
Procedure	10M
Observation	5M
Result	5M

2. Identify the following Spotters 5M

a.

b.

3.write the principle and procedures for the following experiments

(A) Isolation of genomic DNA 5M

(b) Demonstration of Replica plating technique

4. Record and VIVA Voice 10M

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc./BIOTECHNOLOGY/Semester VI / Paper III B / Elective Theory/ Syllabus
Paper III B ECOLOGY
(W.e.f. 2017-18 for 2015 – 16 admitted batch)

SYLLABUS FOR SIXTH SEMESTER - 2018

UNIT I
The Environment: Physical environment; Biotic environment; Biotic and abiotic interactions. Habitat and Niche: Concept of habitat and niche; niche width and overlap; fundamental and realized niche; resource partitioning; character displacement.

UNIT II
Population Ecology: Characteristics of a population; population growth curves; population regulation;

UNITIII
Community Ecology: Nature of communities; community structure and attributes; levels of species diversity and its measurement; edges and ecotones. Ecological Succession: Types; mechanisms; changes involved in succession; concept of climax.

UNIT IV
Species Interactions: Types of interactions, interspecific competition, herbivory, carnivory, pollination, symbiosis.

UNIT V
Ecosystem Ecology: Ecosystem structure; ecosystem function; energy flow and mineral cycling Carbon Cycle, Nitrogen and phosphorous Cycle.

UNIT VI
Primary production and Decomposition; Structure and function of some Indian ecosystems: Terrestrial (forest, grassland) and Aquatic (fresh water, marine, estuarine).

D.N.R.COLLEGE (AUTONOMOUS) BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc. **BIOTECHNOLOGY**

Semester -VI, Paper – III B Ecology

(W.e.f 2017-18 for 2015-16 admitted batch)

PATTERN OF SIXTH SEMESTER QUESTION PAPER- 2018

Year : III B.Sc. (2017 -2018)

Theory Paper : III B

Title of the Paper : **Ecology**

Periods of working per week : 3 hrs.

Duration of exam : 3 hrs.

Max. Marks : 75

Guide lines to question paper setters

Time: 3 hrs. **Max. Marks: 75**

Part-I

Answer any four questions from the following
Each question carries 12 marks.

04x12=48 M

It consists of six questions one question from each unit i.e; I, II, III, IV, V &VI students have to answer **FOUR** questions

Part-II

Short answer questions: It consists of six questions one from each unit i.e I, II, III, IV, V, VI

students have to choose at least **four** **04x05=20 M**

Part-III

Very short answer questions: It consists of seven **07×01=07 M**

Students have to answer all (one question from each unit and seventh question from any unit based on its importance)

(**Note:** Equal weightage should be given for all units keeping in view the different

abilities of students namely bright, above average and average)

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc. Degree Examination at the end of **Sixth** Semester

BIOTECHNOLOGY

Theory Paper III B Ecology

(W.e.f. -2015-2016 Admitted Batch)

Time: 03hrs **Max. Marks: 75**

Part – I

I. Answer **any FOUR** questions from the following **04 x 12 =48 M**

1. Describe about Physical and Biotic Environments?
2. Write a note on population Characteristics?
3. Write an Essay on Ecological Sucession?
4. Write a note on Types of Species Interactions?
5. Explain the Process of Mineral Cycling?
6. Write an essay on Aquatic Ecosystem?

Part – II

II. Write short notes on **any FOUR** of the following questions **04X05=20 M**

7. Niche Width and Overlap
8. Population Regulation
9. Concept of Climax
10. Interspecific Competition
11. Carbon Cycle
12. Eustarine Ecosystem

Part – III

III. Write Very Short answer to all the following **07X01=07 M**

13. Environment
14. Population
15. Ectones
16. Herbivory
17. Ecosystem
18. Decomposition
19. Limnology

D..N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of Sixth Semester
BIOTECHNOLOGY
Paper III B ECOLOGY
THEORY INTERNAL ASSESMENT MODEL QUESTION PAPER
w.e.f 2017-18 for 2015-16 admitted batch

Max Mark:25M

(i) Written examination 15M

(ii) Assignment/Seminar/Project 05M

(iii) Extracurricular Activities 05M

TIME:01Hr Written examination Max Mark:15M

Section-A

I Answer the Following Essay question 01X06=06 M.

(1) Describe about physical and biotic environments .

Section-B

II Answer the Following Short answer question 02X03=06 M

(2) population regulation

(3) concept of climax

Section-C

III Answer the following questions with one or two sentences 03X01=03 M

(4) Herbivory
(5) Ecosystem
(6) Decomposition

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-VI Semester/Paper -IIIB- Practical Syllabus

PRACTICAL (ELECTIVE) ECOLOGY

w.e.f., 2017- 18 for 2015-16 Admitted Batch

1.To determine basal cover of tree in the forest ecosystem / Forest plantation

2. Quantitative analysis of soil organic carbon

3. Quantitative analysis of soil pH

4. To study pore space , water holding capacity and bulk density of soil

5. Identification of rocks and minerals on the basis of physical characters.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-VI Semester/Paper -3B- Practical

PRACTICAL (ELECTIVE) ECOLOGY

Semester and model question paper

Time: 3 Hrs Max Marks: 50

1. Major Experiment - Quantitative analysis of soil pH 30M

Principle	10M
Procedure	10M
Observation	10M

2. Identify the following Spotters 5M

a.

b.

3.write the principle and procedures for the following experiments

(A) Determination of basal cover of trees 5M

(b) Quantitative analysis of soil organic carbon.

4. Record and VIVA Voice 10M

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc. (BIOTECHNOLOGY), III Semester
Theory Paper IV B – PLANT PHYSIOLOGY
(W.e.f. -2017-2018 Admitted Batch)

SYLLUBUS FOR THIRD SEMESTER - 2016

UNIT I:

Photosynthesis - Light harvesting complexes; mechanisms of electron transport; photoprotective mechanisms;

UNIT II:

Respiration and photorespiration- CO2 fixation -C3, C4and CAM pathways. Citric acid cycle

UNIT III

plant mitochondrial electron transport and ATP synthesis; alternate oxidase; photorespiratory pathway.

UNIT – IV:

Nitrogen metabolism- Nitrate and ammonium assimilation; amino acid biosynthesis

UNIT V:

Solute transport and photoassimilate translocation–uptake, transport and translocation of water, ions, solutes and macromolecules from soil, through cells, across membranes, through xylem and phloem; transpiration; mechanisms of loading and unloading of photoassimilates

UNIT VI:

Sensory photobiology-Structure, function and mechanisms of action of phytochromes, cryptochromes and phototropins; stomatal movement; photoperiodism and biological clock

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

III B.Sc Degree Examination at the end of SIXTH Semester

BIOTECHNOLOGY

Paper IV B PLANT PHYSIOLOGY

w.e.f., 2017- 18 for 2015 -16 admitted batch

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrs Max Marks:75

Title of the Paper	:	III B PLANT PHYSIOLOGY
Periods of working per week	:	3hrs
Duration of exam	:	3hrs
Max Marks	:	75

PART- I (Long Answer Questions) 04X12=48 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 12 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI

PART- II (Short Answer Questions) 04X05=20M

It consists of SIX questions

Student can choose any Four questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI .

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of SEVEN questions
Student has to answer ALL questions.
Total SEVEN questions should be given. one question should be given from each unit I,II,III,IV,V,VI . (SEVENTH question can be given from any unit based on its importance)

[Note; question paper should be given keeping in view the different learning ablilities of students namely brigtht,above average and average].

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of Sixth Semester
BIOTECHNOLOGY
Paper IV B PLANT PHYSIOLOGY
(Semester End Theory Model Question Paper)
w.e.f 2017-18 for 2015-16 admitted batch

TIME: 3 HOURS MAX MARKS: 75

PART-1

ANSWER ANY FOUR QUESTIONS FROM THE FOLLOWING 4X12=48 M

(1) Explain the process of light reaction of photosynthesis in plants.
(2) Write about carbondioxide fixation in C3 and C4 plants
(3) Write an essay on plant mitochondrial electron transport and ATP synthesis.
(4) Write an essay on nitrogen assimilation in plants.
(5) Explain the process of translocation and distribution water through xylem and phloem.
(6) Write about structure and functions of phytochromes, cryptochromes and phototropis.

PART-2

ANSWER ANY FOUR OF THE FOLLOWING 4X5=20 M

(7) CAM pathway

(8)photorespiratory pathway

(9) amino acid biosynthesis

(10) Transpiration

(11) photoperiodism

(12)light harvesting complexes

PART-3

ANSWER ALL OF THE FOLLOWING IN ONE OR TWO SENTENCES 7X1=7 M

(13) photosynthesis
(14) acetyl coA
(15) ATP synthetase
(16) ammonium assimilation
(17) xylem
(18) photoassimilation
(19) stomatal movement

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of Sixth Semester
BIOTECHNOLOGY
Paper IV B PLANT PHYSIOLOGY
(Semester End Theory Model Question Paper)
w.e.f 2017-18 for 2015-16 admitted batch

TIME: 3 HOURS MAX MARKS: 75

PART-1

ANSWER ANY FOUR QUESTIONS FROM THE FOLLOWING 4X12=48 M

1.Explain the process of light reaction of photosynthesis in plants.
2.Write about carbondioxide fixation in C_3 and C4 plants
3.Write an essay on plant mitochondrial electron transport and ATP synthesis.
4.Write an essay on nitrogen assimilation in plants.
5.Explain the process of translocation and distribution water through xylem and phloem.
6.Write about structure and functions of phytochromes, cryptochromes and phototropis.

PART-2

ANSWER ANY FOUR OF THE FOLLOWING 4X5=20 M

(7) CAM pathway

(8)photorespiratory pathway

(9) amino acid biosynthesis

(10) Transpiration

(11) photoperiodism

(12)light harvesting complexes

PART-3

ANSWER ALL OF THE FOLLOWING IN ONE OR TWO SENTENCES 7X1=7 M

(13) photosynthesis
(14) acetyl coA
(15) ATP synthetase
(16) ammonium assimilation
(17) xylem
(18) photoassimilation
(19) stomatal movement

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc./BIOTECHNOLOGY/Semester VI / Paper V B/ Cluster II /Theory/ Syllabus
Paper V B (Cluster II) Animal Physiology
(W.e.f. 2017-18)

UNIT I:

Blood and circulation- Blood corpuscles, haemopoiesis and formed elements, plasma function, blood volume, blood volume regulation, blood groups, haemoglobin, immunity, haemostasis

UNIT II:

Respiratory system- Comparison of respiration in different species, anatomical considerations, transport of gases, exchange of gases, waste elimination, neural and chemical regulation of respiration.

UNIT III:

Nervous system- Neurons, action potential, neuroanatomy of the brain and spinal cord, central and peripheral nervous system, neural control of muscle tone and posture.Sense organs - Vision, hearing and tactile response.

UNIT IV:

Digestive system -Digestion, absorption, energy balance, BMR.

UNIT V:

Endocrinology and reproduction - Endocrine glands, basic mechanism of hormone action, hormones and diseases

UNIT VI:

Reproductive Biology - Reproductive processes, gametogenesis, ovulation, neuroendocrine regulation

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc Degree Examination at the end of SIXTH Semester
BIOTECHNOLOGY
Paper VB ANIMAL PHYSIOLOGY
w.e.f., 2017- 18 for 2015 -16 admitted batch

GUIDE LINES TO QUESTION PAPER SETTERS

Time :3 hrs Max Marks:75

Title of the Paper	:	III B ANIMAL PHYSIOLOGY
Periods of working per week	:	3hrs
Duration of exam	:	3hrs
Max Marks	:	75

PART- I (Long Answer Questions) 04X12=48 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 12 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- II (Short Answer Questions) 04X05=20 M

It consists of SIX questions
Student can choose any Four questions and answer.
Each question carries 05 Marks.
Total SIX questions should be given one question should be given from each unit I,II,III,IV,V,VI
.

PART- III (Very Short Answer Questions) 07X01=07 M

It consists of SEVEN questions
Student has to answer ALL questions.
Total SEVEN questions should be given. one question should be given from each unit I,II,III,IV,V,VI . (SEVENTH question can be given from any unit based on its importance)

[Note; question paper should be given keeping in view the different learning ablilities of students namely brigtht,above average and average].

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc./BIOTECHNOLOGY/Semester VI / Paper V B/ Cluster II /Theory/ Syllabus
Paper V B (Cluster II) Animal Physiology
(W.e.f. 2017-18)

Time: 03hrs Max. Marks: 75

Part – I

I Answer any FOUR questions from the following 04 x 12 =48 M

1.Discuss about different types of Blood Corpuscles

2.Write an essay on transport of gases and export of gases in Respiratory system of humans

Part – II

II. Write short notes on any F of the following questions 04X05=20 M

1. Absorption of Electromagnetic radiations
2. Types of Ion Exchange resins
3. Migration of ions in electric field
4. Biological applications of Radioisotopes.
5. Basic principle of Centrifugation
6. Graphical Representation of Data

Part – III

III. Write Very Short answer to all the following 07X01=07 M

7. Beer,s Law
8. Mobile Phase
9. Ligand
10. Isoelectric point
11. Differential Centrifugation
12. ANOVA
13. F- Test

D.N.R COLLEGE (AUTONOMOUS), BHIMAVARAM
(Affiliated to Adikavi Nannaya University)
III B.Sc./BIOTECHNOLOGY/Semester VI / Paper V B (Cluster II) Animal Physiology
Internal Assessment Test
(W.e.f. 2017-18)

Max Marks: 25 M

(vii) Written Examination : 15 M
(viii) Assignment/ Seminar/Project : 05 M
(ix) Extracurricular Activities : 05 M

Time: 01 Hour Written Examination Max Marks: 15 M

Section – A

III. Answer the Following Essay question 01×06=06 M

1. Write an essay on transport of gases and exchange of gases in respiratory system

Section – B 02×03=06 M

IV. Answer the following short answer questions

2. Blood volume regulation
3. Blood groups

Section – C 03×01=03 M

V. Answer all the following questions with one or two sentences

10. Haemoglobin
11. Plasma
12. Haemostatis

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-VI Semester/Paper -5B- Practical Syllabus

PRACTICAL (CLUSTER II) ANIMAL PHYSIOLOGY

w.e.f., 2017- 18 for 2015-16 Admitted Batch

1. Detection of protein, carbohydrate and lipid.
2. Study of Human salivary enzyme activity in relation to pH.
3. Detection of nitrogenous waste products - Ammonia & Urea
4. Exercise on Haematology - Counting of RBC /WBC and Blood grouping in blood samples.
5. Estimation of Haemoglobin in blood samples.

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

B.Sc BIOTECHNOLOGY (CBCS) SYLLABUS

III B.Sc BIOTECHNOLOGY-VI Semester/Paper -5B- Practical

PRACTICAL (CLUSTER II) ANIMAL PHYSIOLOGY

Semester and model question paper

Time: 3 Hrs | Max Marks: 50

1. Major Experiment - Estimation of haemoglobin in blood sample. 30M

Principle	10M
Procedure	10M
Observation	10M

2. Identify the following Spotters 5M

a.

b.

3.write the principle and procedures for the following experiments

(A) Detection of proteins ,carbohydrates and lipids 5M

(b) detection of nitrogenous waste products-ammonia and urea

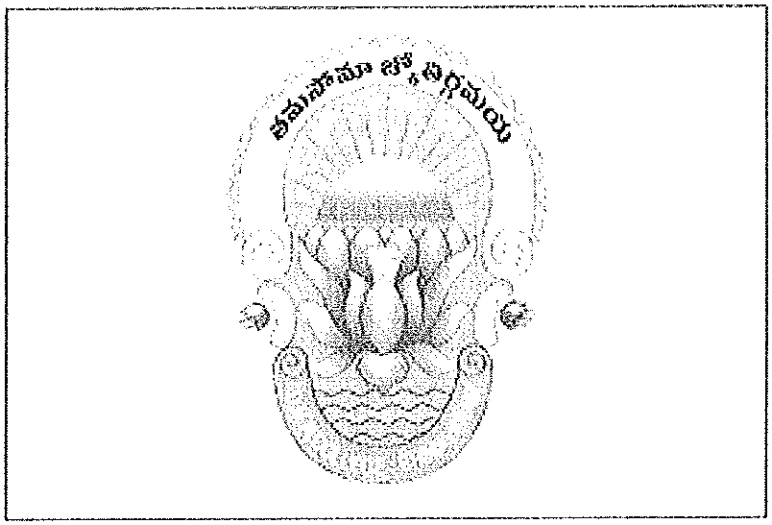
4. Record and VIVA Voice 10M

D.N.R. COLLEGE
(AUTONOMOUS)
BHIMAVARAM

GEOLOGY

BOARD OF STUDIES MEETING

15th November, 2021 at 11:30 A.M.



Venue:

Through Online

D.N.R. COLLEGE (A) :: BHIMAVARAM

Board of Studies in Geology

Minutes of the meeting of the **Board of Studies in Geology** held on 15-11-2021 at 11-30 A.M. through Online.

S.No	Name	Members	Signatures
1.	Sri K. Santhosh Head I/C, Department of Geology D.N.R. College (A), Bhimavaram.	Chairman	K. Santhosh 15/11/21
2.	Dr. Ch. Krishna Principal Govt. Degree College, Ravulapalem, Mobile: 94400 93239 E-Mail: geokrishna1@yahoo.co.in	University Nominee	Attended through online.
3.	Dr. M. R. GOUTHAM Head, Dept. of Geology Govt., College (A), Rajamahendravaram. Mobile: 9441654840 E-Mail : gouthammr@gcrjy.ac.in	Subject Expert	Attended through online
4.	Sri K. Satyanarayana Naidu Asst. Professor, Department of Geology, M. R. College(A), Viziangaram. Mobile: 7989464475 E-Mail : satya.geo10@gmail.com	Subject Expert	Attended through online.
5.	Sri B. Raju Lecturer in Geology, D.N.R. College (A), Bhimavaram.	Member	B. Raju 15/11/21
6.	Miss A. S. Chandana Lecturer in Geology, D.N.R. College (A), Bhimavaram.	Member	A. S. Chandana 15/11/21
7.	Dr. P. A. Rama Krishna Raju Professor, Dept of Civil Engineering Co-Ordinator, WET Centre SRKR Engineering College, Bhimavaram, Mobile: 9440891225	Special Invite	15/11/21
8.	Sri A. Surendra Head of the department (Retd.), Department of Geology, D.N.R. College (A), Bhimavaram. Mobile: 9440679255	Alumni	15/11/21
9.	S. Sai Krishna Reddy GMP Final year Student, D.N.R. College (A), Bhimavaram.	Student representative	S. Sai Krishna Reddy 15/11/21

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Department of Geology

Board of studies meeting in the department of Geology on 15-11-2021.

AGENDA

Subject 1: To ratify the action of the chairman, Board of Studies, in introducing the syllabus for 1st and 2nd Semesters during the academic year 2020-21 under Revised Choice Based Credit System (RCBCS).

Subject 2: To ratify the action of the chairman, Board of Studies, in introducing the structure of the question papers, model question papers for Geology course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 during the academic year 2020-21 under Revised Choice Based Credit System (RCBCS).

Subject 3: To ratify the action of the chairman, Board of Studies, in introducing the syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Geology course(s), of papers I and II during the academic year 2020-21 under Revised Choice Based Credit System (RCBCS).

Subject 4: To ratify the action of the chairman, Board of Studies, in the break-up of the Internal assessment test marks 25 in 1st and 2nd semester Geology course(s) of papers I and II during the academic year 2020-21 under Revised Choice Based Credit System (RCBCS).

Subject 5: To ratify the action of the chairman, Board of Studies, the qualifying marks in Geology Course(s) for papers I and II of 1st and 2nd semester end theory examination and practical examination during the academic year 2020-21 under Revised Choice Based Credit System (RCBCS).

Subject 6: To approve the syllabi for 3rd and 4th Semester course(s) of Geology in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Subject 7 : To approve the structure of the question papers, model question papers for Geology course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with

maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject 8: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Geology course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Subject 9: To approve the break-up of the Internal assessment test marks 25 in 3rd and 4th semester Geology course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Subject 10: To approve the qualifying marks in Geology Course(s) for papers III, IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Subject 11: To review the existing syllabi, model question papers of both theory and practical of V and VI semester Geology course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject 12: To ratify the action of the chairman, Board of Studies, to introduce a new Combination in B.Sc. course with Geology, as one of the subjects, along with Statistics and Computer Science from the academic year 2021-22.

Subject 13: To approve the list of paper setters and examiners for Geology Course.

Subject 14: Any other matter with the permission of the chair.

Chairman
Board of Studies of Geology
D.N.R.College (A)
Bhimavaram

D.N.R. COLLEGE (AUTONOMOUS): BHIMAVARAM

Department of Geology

Board of studies meeting in the department of Geology on 15-11-2021

RESOLUTION

Resolution 1: The syllabi for 1st and 2nd Semester course(s) of Geology in papers I & II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 2: The structure of the question papers, model question papers for Geology course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 3: The syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Geology course(s), of papers I and II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 4: The break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 1st and 2nd semester Geology course(s) of papers I and II which is adopted under Revised CBCS w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 5: It is ratified that the qualifying marks in Geology Course(s) for papers I and II of 1st and 2nd semester end theory examination is 40 marks (External-26, Internal-14) and practical examination is 20 marks which is adopted under revised CBCS w.e.f. the academic year 2020-21 onwards is ratified.

Resolution 6: It is resolved to approve the syllabi for 3rd and 4th Semester course(s) of Geology in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Resolution 7: It is resolved to approve the structure of the question papers, model question papers for Geology course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 8: It is resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Geology course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 9: It is resolved to approve the break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 3rd and 4th semester Geology course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Resolution 10: It is resolved to approve the qualifying marks in Geology Course(s) for papers III, IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Resolution 11: It is reviewed and resolved the existing syllabi, model question papers of both theory and practical of V and VI semester Geology course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution 12: The Proposal to introduce a new Combination in B.Sc. course with Geology, as one of the subjects, along with Statistics and Computer Science from the academic year 2021-22 is ratified.

Resolution 13: Resolved to approve the following list of paper setters and examiners for Geology course.

Resolution 14: Any other matter with the permission of the chair.

Chairman
Board of studies of Geology
D.N.R.College(A)
Bhimavaram

AGENDA & RESOLUTION

Subject 1: To ratify the syllabi for 1st and 2nd Semester course(s) of Geology in papers I & II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards.

Resolution 1: The syllabi for 1st and 2nd Semester course(s) of Geology in papers I & II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

B.Sc.	GEOLOGY	Semester : I
Paper: I	PHYSICAL GEOLOGY & CRYSTALLOGRAPHY	Hrs/Wk : 4

Syllabus

Unit-1

Definition of Geology - Basic assumptions of Geology - Its relationship with other sciences

Branches of Geology – Aim, Scope and Applications of Geology.

Earth as a planet Movements of the Earth and their effects- Rotation, Revolution, Perihelion-Aphelion (Apogee), and Equinoxes-Solstices.

Origin of the Earth – Nebular, Planetesimal, Tidal, and Big-Bang hypotheses; their merits and demerits.

Age of the earth

Geological processes - **Weathering** - Types of weathering of rocks - Physical and Chemical; Definition of erosion and denudation, Cycle of erosion - erosion, transportation and deposition. Agents of erosion

Unit-2

Rivers :- Erosion, transportation and deposition of river (fluvial) cycle in different stages development of typical landforms by river erosion and deposition - V-shaped Valley, Waterfall, Alluvial fan, Meander, Ox-bow lake, Flood plain, Natural levee, Peneplain and Delta. Types of rivers. Drainage patterns.

Wind :- Development of characteristic features by wind (arid cycle) erosion and deposition pedestal rock - mushroom topography - inselberge, ventifacts, loess, sand dunes.

Glaciers :- Definition of a Glacier - types of glaciers - development of typical landforms by glacial erosion and deposition.

Unit-3

Ground Water :- Storage of ground water - Porosity, Permeability, aquifer, water tablezone of saturation and zone of aeration.

Seas :- Offshore profile: Continental shelf, Continental slope, Abyssal plane, Oceanic Deep. Movements of sea-water.

Interior of the Earth: Structure & Constitution. P-wave and S-wave Shadow zones.

Volcanoes :- Parts of a typical volcano, Types of volcanoes. Products of volcanoes. Hot Spot.

Earthquakes :- Causes, kinds of earthquake waves, mode of propagation, intensity of

earthquakes, Richter scale, Seismograph and Seismogram - Effects of earthquakes, Earthquake zones.

Unit-4

Crystallography: Definition of a crystal - amorphous and crystalline states, Morphology of crystals - face, edge, solid angle, interfacial angle.
Forms: Simple, Combination, Closed and Open forms.
Symmetry: Plane, Axis, Centre, Crystallographic axes, Parameters, Indices.
Crystallographic Notation: Parameter system of weiss, Index system of Miller.
Classification of Crystals into 7 systems
Morphological study of the following classes of symmetry
Cubic system - Normal Class (Galena Type)
Tetragonal system - Normal Class (Zircon Type)

Unit-5

Morphological study of the following classes of symmetry :
Hexagonal system - Normal Class (Beryl Type)
Trigonal system - Normal Class (Calcite Type)
Orthorhombic system - Normal Class (Barytes Type)
Monoclinic system - Normal Class (Gypsum Type)
Triclinic system - Normal Class (Axinite Type)
Twinning in crystals - definitions of twin, twin plane, twin axis, composite plane. Laws of twinning and Types of twinning.

Recommended Text Books:

	TITLE	AUTHOR	PUBLISHER
1.	General Geology (1996),	V.Radha Krishna	V.V.Publishers
2.	Introduction to Physical Geology	A.K.Datta	Kalyani, Ludhiana
3.	Putnam's Geology (1982)	Larson & Birkeland-	Oxford University Press
4.	Text Book of Physical Geology	G.B.Mahapatra	C.B.S.
8.	Elements of Crystallography	Wade & Mattox	Oxford & IBH.

Reference books:

1.	Holmes' Principles of Physical Geology (1992)	P.M.D.Duff	E.L.B.S.
2.	Physical Geology	A.N.Strahler	Harper & Row.
3.	Basic Physical Geology	E.S.Robinson	John Wiley & sons
4.	The evolving earth -A text in Physical Geology	F.J.Sawkins	Macmillan
5.	Physical Geology	Mallory & Cargo	Mc Graw Hill.
6.	Introduction to Geomorphology (2001)	V.S.Kale & A.Gupta	Orient Longman

B.Sc.	GEOLOGY	Semester : II
Paper: II	MINERALOGY (INCL. OPTICAL MINERALOGY)	Hrs/Wk: 4

Syllabus

Unit-1

Definition of a mineral - Classification of minerals into rock-forming and ore-forming minerals. Physical properties of minerals - Colour, Streak, Transparency, Lustre, Form, Hardness, Tenacity, Cleavage, Fracture, Specific gravity.

Chemical properties of minerals - Isomorphism - Solid solution, Polymorphism - Allotrophy, Pseudomorphism, Radioactivity, Silicate structures.

Magnetic properties, Electrical properties: Pyro & Peizo electricity.

Unit-2

Study of Physical properties, Chemical properties and mode of occurrence of the following mineral groups:

Nesosilicates - Olivine, Garnet, Aluminium silicates

Sorosilicates – Epidote, Cyclosilicates – Beryl.

Unit-3

Study of physical properties, chemical properties and mode of occurrence of the following mineral groups:

Inosilicates - Pyroxene & Amphibole

Phyllosilicates - Mica & Hydrous magnesium silicates

Unit-4

Study of physical properties, chemical properties and mode of occurrence of the following mineral groups:

Tectosilicates - Feldspars, Feldspathoids, Quartz. Forms of Silica

Miscellaneous - Staurolite, Tourmaline, Zircon, Calcite, Corundum, Apatite.

Unit-5

Optical Mineralogy:

General principles of optics. Optical properties of Minerals - Isotropic & Anisotropic substances. Polarized light, Refractive index, Double refraction, Uniaxial and Biaxial Minerals.

Nicol Prism and its construction, Concept of crossed nicols.

Petrological (Polarising) Microscope - its mechanical and optical parts. Behaviour of isotropic and anisotropic minerals between crossed nicols - Extinction, Pleochroism, Interference colours.

Optical properties of important minerals.

Recommended Text Books:

1. A textbook of mineralogy - E.S. Dana and W.E. Ford.
2. Rutleys elements of mineralogy - H.H. Reed
3. Essential of Crystallography - E. Flint.

Reference books:

1. Manual of mineralogy - C.S. Hurlbut and C. Klein
2. Mineralogy for students - M.H. Batey.
3. An introduction to rock forming minerals - Deer, Howie, and Zussman.
4. Elements of mineralogy - Mason and Bern.

AGENDA & RESOLUTION

Subject 2: To ratify the structure of the question papers, model question papers for Geology course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards.

Resolution 2: The structure of the question papers, model question papers for Geology course of Paper I & II with maximum marks 75 of 1st and 2nd semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Model Question Paper

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY

PAPER – I (PHYSICAL GEOLOGY & CRYSTALLOGRAPHY)

Time: 3 Hrs **Marks : 75**

Part – A

Answer any Five of the following. 5 x 5 = 25 M

1. Soil Profile

2. Three Stages of River

3. Profile of Ground Water (Zone of Aeration & Saturation)

4. Parts of a Volcano

5. Nebular Hypothesis by Kant and Laplace

6. Parameter system of Weiss

7. Law of constancy of Interfacial angles.

8. Didigonal Dipyramid

Part – B

Answer any Five of the following. 5 x 10 = 50 M

1. Define Geology. Describe the various branches of Geology.

2. Describe the Fluvial cycle (River) of Erosion.

3. Write an essay on the Interior of the Earth?

4. Explain the role of Sea waves as denudation agent.

5. Describe different types of Volcanoes and their products?

6. Describe any four hypotheses proposed by different scientists on the origin of the Earth.

7. Describe the symmetry and forms of the Zircon type.

8. Describe the symmetry and forms of Barytes type.

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MODEL QUESTION PAPER

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree, Second Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY

PAPER – II MINERALOGY (INCL. OPTICAL MINERALOGY)

Time: 3 Hrs **Marks : 75**

Part – A

Answer any Five of the following. 5 x 5 = 25 M

1. Ore forming minerals

2. Grossular

3. Spessartite

4. Kyanite

5. Asbestos

6. Quartz

7. Interference colour

8. Uniaxial minerals

Part – B

Answer any Five of the following. 5 x 10 = 50 M

1. What is Mineralogy? Describe any four characters of minerals that depend on light?

2. Write an essay on Silicate structures.

3. Give an account of the Garnet group of minerals.

4. Describe the Pyroxene group of minerals.

5. Describe the Mica group of minerals.

6. Describe the various forms of Silica.

7. Give the construction and uses of Nicol Prism?

8. Describe the parts and their functions of a polarizing microscope?

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Subject 3: To ratify the syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Geology course(s), of papers I and II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards.

Resolution 3: The syllabi, model question papers and break up of practical marks 50 of 1st and 2nd semester end practical examinations in Geology course(s), of papers I and II which is adopted under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2020-21 onwards is ratified.

Lab/Practical syllabus: **PAPER – I (PHYSICAL GEOLOGY & CRYSTALLOGRAPHY)**

I) Identification of geomorphologic features in topographical maps.

II) Study of symmetry, and form of the Normal classes of seven crystal systems of the following:

I. Cubic system – Normal (Galena)
II. Tetragonal system – Zircon type
III. Hexagonal system – Beryl type
IV. Orthorhombic system – Barites type
V. Monoclinic system – Gypsum type
VI. Triclinic system – Axinite type

Structure of the Question Paper

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY PRACTICAL

PAPER – I (PHYSICAL GEOLOGY & CRYSTALLOGRAPHY)

Time: 3 Hrs **Marks : 50**

I. Write the description of following Geo-morphological Models with neat diagram 4 x 2 = 8 M

1.)

2.)

II. Write the Symmetry, System, Class and Form with Miller symbol of following Crystal models 4 x 8 = 32 M

1.)

2.)

3.)

4.)

5.)

6.)

7.)

8.)

Record - 10 Marks

Lab/Practical syllabus: **Paper-II - MINERALOGY (INCL. OPTICAL MINERALOGY)**

Study of physical properties and diagnostic features of the following mineral:

Quartz Jasper, Agate, Chalcedony, Amethyst, Orthoclase, Microcline, Albite, Anorthite, Labradorite, Enstatite, Hypersthene, Augite, Hornblende, Actinolite, Tremolite, Asbestos, Muscovite, Biotite, Phlogopite, Olivine, Epidote, garnet, Kyanite, Sillimanite, Andalusite, Beryl, Zircon, Apatite, Corundum, Talc, Gypsum, Calcite, Flurospar and Serpentine.

Study of optical properties of the following minerals:
Quartz, Orthoclase, Microcline, Plagioclase, Hypersthene, Augite, Tremolite, Hornblende, Muscovite, Biotite, Olivine, Epidote, Garnet, Kyanite, Beryl, Calcite, Chlorite, sillimanite, Leucite.

Structure of the Question Paper
D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

I B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY PRACTICAL

PAPER – II - MINERALOGY (INCL. OPTICAL MINERALOGY)

1. Describe and identify the given **Minerals** from Tray no. 01 to 07 7 x 4 = 28 Marks

Tray No.1:

Tray No.2:

Tray No.3:

Tray No.4:

Tray No.5:

Tray No.6:

Tray No.7:

2. Describe and identify the given **Minerals under Microscope** 2 x 6 =12 Marks

M1:

M2:

Record - 10 Marks

Subject 4: To ratify the break-up of the Internal assessment test marks 25 in 1st and 2nd semester Geology course(s) of papers I and II which is adopted under Revised Choice Based Credit System w.e.f. the academic year 2020-21 onwards.

Resolution 4: The break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 1st and 2nd semester Geology course(s) of papers I and II which is adopted under Revised CBCS w.e.f. the academic year 2020-21 onwards is ratified.

Subject 5: To ratify the qualifying marks in Geology Course(s) for papers I and II of 1st and 2nd semester end theory examination and practical examination which is adopted under revised CBCS w.e.f. the academic year 2020-21 onwards.

Resolution 5: It is ratified that the qualifying marks in Geology Course(s) for papers I and II of 1st and 2nd semester end theory examination is 40 marks (External-26, Internal-14) and practical examination is 20 marks which is adopted under revised CBCS w.e.f. the academic year 2020-21 onwards is ratified.

AGENDA & RESOLUTION

Subject 6: To approve the syllabi for 3rd and 4th Semester course(s) of Geology in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

Resolution 6: It is resolved to approve the syllabi for 3rd and 4th Semester course(s) of Geology in papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) for adoption and implementation w.e.f. the academic year 2021-22 onwards.

B.Sc.	GEOLOGY	Semester: III
Paper: III	PETROLOGY (IGNEOUS, SEDIMENTARY & METAMORPHIC)	Hrs/Wk: 4

UNIT - I

Nature and scope of Petrology - Definition of Rock, Classification of rocks into Igneous, Sedimentary and Metamorphic; distinguishing features of three types of rocks.

Forms-Lava flows, intrusions, sill, laccolith, bysmalith, lopolith, dykes, ring dykes, cone sheets, volcanic necks, phacolith and batholith.

Structures - Vesicular, amygdoloidal, block lava, ropy lava, pillow, flow, jointing, sheeting, plates, columnar, prismatic

Textures -microstructure, devitrification; allotriomophic hypidiomorphic, panadiomorphic, ophitic, intergranular, intersertal, trachytoid, graphic and micrographic, microgranitic, felsitic, porphyritic, poikilitic. Reaction structures - corona, myrmekitic, orbicular, spherulitic, perilitic.

UNIT - II

Classification of Igneous rocks: C.I.P.W. and Tyrrel - Tabular. Composition and constitution of magma- Uni component, binary magma with eutectic and solid solution.

Origin of Igneous rocks - Bowen's reaction principle; Differentiation and Assimilation.

Descriptive study of the following Igneous rocks - Granite, Granodiorite, Syenite, Nepheline syenite, Diorite porphyry, Pegmatite, Aplite, Gabbro, Anorthosite, Peridotite, Pyroxenite, Dunite, Dolerite, Rhyolite, Obsidian, Pumice, Trachyte, Andesite, Basalt, Pitchstone, Dacite, Phonolite.

UNIT - III

Source of sediments - Mechanical and Chemical weathering; modes of transportation, sedimentary environments. Definition of diagenesis, Lithification, Cementation, Stratification. Types of bedding, surface marks, deformed bedding, solution structures.

Classification of Sedimentary rocks - Clastic - rudaceous, arenaceous, argillaceous; nonclastic- Calcareous, Carbonaceous, Ferruginous, Phosphatic, evaporites.

Descriptive study of the following Sedimentary rocks : Conglomerate, Breccia, Grit, Sandstone, Arkose, Graywacke, Shale, Limestone, Shell limestone.

UNIT – IV

Definition of Metamorphism, Agents and types of metamorphism, Grades and Zones of Metamorphism. Metamorphic minerals - stress and antistress minerals. Structures of Metamorphic rocks - Cataclastic, Maculose, Schistose, Granulose and Gneissose. Textures - Crystalloblastic, Palimpsest, Xenoblastic, Idioblastic.

UNIT – V

Classification of Metamorphic rocks - Concept of Metamorphic facies. Cataclastic metamorphism of argillaceous and arenaceous rocks; Thermal metamorphism of argillaceous, arenaceous and calcareous rocks; Dynamothermal metamorphism of argillaceous, arenaceous and basic igneous rocks. Plutonic metamorphism, metasomatism and additive processes. Definitions of anatexis and palingenesis. Descriptive study of the following rocks : Gneiss, Schist, Slate, Phyllite, Quartzite, Marble, Granulite, Eclogite, Amphibolite, Migmatite. Charnockite, Khondalite, Gondite.

Recommended Text Books:

1. **Principles of petrology** - **G.W. Tyrrell**
2. **Petrology** - **W.T.Huang**
3. **Metamorphic petrology** - **B Bhaskar Rao**

Reference books:

1. **Petrology for students** - **S.R.Ndckolds Knox, Chinnar**
2. **A Text book of sedimentary petrology** - **Verma & Prasad**
3. **Petrology of the sedimentary rocks** - **J.T. Greehsmith**
4. **Petrology of the sedimentary rocks** - **F.H. Hatch, A. K. Wells and M. K. Wells.**
5. **Petrology of the igneous rocks** - **F.H. Hatch, A. K. Wells and M. K. Wells.**
6. **Petrology of Igneous and Metamorphic rocks** - ***Hyndman***

B.Sc.	GEOLOGY	Semester: IV
Paper: IV	Structural Geology, Palaeontology & General Stratigraphy	Hrs/Wk: 4

Syllabus

UNIT – I

Definition of Structural Geology; Aim and objectives of structural Geology. Importance of study of structures - Primary and Secondary structures. Bed, bedding planes, out crop, attitude of beds-strike, dip and apparent dip; use of Clinometer, primary structures as markers;

Folds-description, geometric classification; recognition of folds in the field.

UNIT - II

Faults - Geometric and genetic classification, recognition of faults in the field, effects of faults on out crops.

Joints - Geometric and genetic classification.

Unconformities - Definition of unconformity, types of unconformities, recognition of unconformities in the field; distinguishing the faults from unconformities.

Definitions of overlap, off-lap, outlier, inlier, cleavage, schistosity, foliation and lineation.

Unit – III

Definitions of palaeontology and fossilization, conditions for preservation, modes of preservation, uses of fossils, Introduction to Geo-Chronological units. Study of taxonomy, classification, morphology, geological and geographical distribution of the invertebrates: Phylum Echinodermata, Brachiopod.

Study of the following fossils: Cidaris, Micraster, Holaster, Hemiaster.

Unit – IV

Definition of Palaeontology, Branches of Palaeontology, conditions of fossilization, modes of preservation and uses of fossils. Geochronologic Units. Index Fossils.

Detailed study of morphology, classification and geological distribution of -Corals and Brachiopoda,

Fossils: Calceola, Zabhranthis, Terebratula, Spirifer, Rhynchonella, Products, Detailed study of morphology, classification and geological distribution of Mollusca (Gastropods,Cephalopoda and Lamellibranchia) Turritella, Natica, Physa, Conus, Pecten. Gyphaea.Arca, Cardita, Nautilus. Ammonoids, Ceratites, Bellemnites.

Unit- V

Detailed study of morphology, classification and geological distribution of -Trilobita, Echinodermata, Graptolites and Plant fossils.

Fossils: Calymene, Paradoxide, Cidaris, Micraster, Hemiaster, Monograptus, Diplograptus, glossopteris, gangamopteris and ptylophyllum Lepidodendron.

Stratigraphy: Definition of Stratigraphy. Principles of Stratigraphy. Nomenclature of Stratigraphy – Geochronologic units, Chronostratigraphic units, Biostratigraphic units and Lithosratigraphic units.

Recommended Text Books:

1. Structural Geology - Marlarid F. Billings.
2. An outline of structural Geology - E. S. Hills
3. *Invertebrate Palaeontology* - *Henry Woods.*
4. *An introduction to palaeontology* - *Jain, P. C et.al.*
5. *Principles of stratigraphy* - *Dunbars & Rodgers.*

Reference books:

1. Structural Geology - L. U. De Setter
2. An outline of structural Geology - E. S. Hills
3. *Invertebrate Palaeontology* - *Henry Woods.*
4. *An introduction to palaeontology* - *Jain, P.C et.al.*

B.Sc.	GEOLOGY	Semester: IV
Paper: V	*INDIAN GEOLOGY & ECONOMIC GEOLOGY*	Hrs/Wk: 4

Syllabus

Unit- I

Standard **Geological Time Scale**, Principles of correlation. Physiographic divisions of India with their stratigraphic and structural characteristics. A brief study of type areas, distribution in India, lithology, fossil content and economic importance of the following **Geological Groups of India** – Dharwars, Puranas – Cuddapahs,

Unit-II

Vindhyas, Kurnools, Gondwana system, Triassic of Spitit, Jurassic of Kutch, Cretaceous of Trichinopoly, Deccan traps and their age, Siwaliks with vertebrate fossils.

Unit-III

Definition of **Economic geology**, mineral resources and mineral deposits, importance of economic minerals and rocks, ore minerals, gangue minerals (gangue). Ore and industrial minerals. **Classification of mineral deposits** - Bateman's classification modified by Jensen. **Processes of formation of mineral deposits**; Endogenetic and Exogenetic processes.

Unit-IV:

Study of ore deposits of gold, copper, lead, zinc, aluminium, with respect to their mineralogy, uses mode of occurrence, origin and distribution in India.

Iron, manganese, chromium, uranium and thorium, with respect to their mineralogy, uses mode of occurrence, origin and distribution in India.

Unit-V:

Distribution of industrial minerals in India for the following industries: Abrasives, cement and Ceramic.

Fossil fuels: Coal - origin and types of coal - coal deposits of India.

Atomic minerals: Uranite, Pitchblende, Coffenite - Beach sands: Monozite, ilmenite; Rutile and Zircon and their use. Mineral resources of Andhra Pradesh.

Recommended Text Books:

1. Fundamentals of Historical Geology & Stratigraphy - Ravindra Kumar
2. Geology of India & Burma - MS Krishna
3. Geology of India (Vol. 1 & 2) - R. Vydyanadhan & Ramakrishnan
4. *Indian mineral resources* - *S. Krishnaswamy*
5. *Introduction of India's economic Minerals* - *N. Lisharrna, K. S. V. Ram*
6. *Geology & mineral resources of Andhra Pradesh* - *N. V. B. S. Dutt*
7. *Mineral Resources of Andhra Pradesh* - *Dr. P. K Ramam*

Reference books:

1. *Indian mineral year book (1997)* - *Indian Bureau of Mines*
2. *Fuel minerals* - *A. K. Brown & Dey*

Subject 7: To approve the structure of the question papers, model question papers for Geology course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 7: It is resolved to approve the structure of the question papers, model question papers for Geology course of Paper III, IV & V with maximum marks 75 of 3rd and 4th semester end theory examination and abstract of question paper for internal assessment test with maximum marks 25 for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

MODEL QUESTION PAPER

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, Third Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY

PAPER – III - PETROLOGY

Time: 3 Hrs **Marks : 75**

Part – A

Answer any Five of the following. 5 x 5 = 25 M

1. Felsic and mafic minerals

2. Primary magmas

3. Granodiorite

4. Limestone

5. Guano

6. Agents of Metamorphism

7. Metamorphic facies

8. Pyroxene gneiss

Part – B

Answer any Five of the following. 5 x 10 = 50 M

1. Define the term rock? What are the different types of rocks and describe them.

2. Write an essay on the Structures of Igneous rocks.

3. Write an essay on Tyrrell's classification of Igneous rocks.

4. Describe the origin of Igneous rocks based on the Bowen's Reaction Principle.

5. Describe the major mechanical structures of Sedimentary rocks.

6. Describe the Sedimentary rocks of Clastic origin.

7. Write an essay on the Structures and Textures of metamorphic rocks.

8. Write an essay on Dynamo Thermal Metamorphism and its products.

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MODEL QUESTION PAPER

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, Fourth Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY

PAPER – IV - Structural Geology, Palaeontology & General Stratigraphy

Time: 3 Hrs **Marks : 75**

Part – A

Answer any Five of the following. 5 x 5 = 25 M

1. Three stages of deformation
2. Clinometer Compass
3. Extension Joint
4. Columnar Joints
5. Index Fossil
6. Gangamopteris
7. Litho-Stratigraphic Units
8. Chrono-Stratigraphic Units

Part – B

Answer any Five of the following. 5 x 10 = 50 M

1. Define the term 'Fold'? Describe parts of a Fold and how they are recognized in the field.
2. Define Fault. Describe various types of Faults.
3. What is Unconformity? Describe different kinds of Unconformities?
4. Define Palaeontology and describe the different modes of preservation of Fossils.
5. Describe the Morphological characters of Echinoids with neat sketch.
6. Describe the Morphological Characters and Geological range of Brachiopods.
7. Enumerate the principles of Stratigraphy and their importance in stratigraphic studies.
8. Describe the Morphology and geological range of Trilobites.

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MODEL QUESTION PAPER

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, Fourth Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY

PAPER – V - *INDIAN GEOLOGY & ECONOMIC GEOLOGY*

Time: 3 Hrs **Marks : 75**

Part – A

Answer any Five of the following. 5 x 5 = 25 M

1. Chari formation
2. Middle Siwaliks
3. Deccan Traps in Godavari Districts
4. Kaimur Series
5. Kurnool group
6. Copper deposits of A.P.
7. Hutti Gold Field
8. Beach placers

Part – B

Answer any Five of the following. 5 x 10 = 50 M

1. What is correlation? Describe the various methods of correlation.
2. Describe the Archaean rocks of Karnataka and give their economic importance.
3. Write an essay on Cuddapah Supergroup of rocks and its economic importance
4. Write an essay on the classification of Gondwana rocks.
5. Write an essay on Bateman's classification of mineral deposits.
6. Describe the Early and Late Magmatic deposits with Indian examples.
7. Explain the oxidation and supergene enrichment process with neat sketch of zones.
8. Describe the Aluminum ore mineral deposits of India.

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Subject 8: To approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Geology course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Resolution 8: It is resolved to approve the syllabi, model question papers and break up of practical marks 50 of 3rd and 4th semester end practical examinations in Geology course(s), of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System (RCBCS) w.e.f. the academic year 2021-22 onwards.

Lab/Practical syllabus: **PAPER – III (PETROLOGY)**

- Megascopic and microscopic study of the following igneous rocks: Dunite, Perodotite, Granite. Syenite, Diorite, Gabbro. Dolerite, Rhyolite, Basalt, Pegmatite,
- Additional curriculum: Granodiorite, Diorite, Nepheline syenite, Granite porphyry, Syenite porphyry.
- Megascopic and microscopic study of the following sedimentary rocks: Conglomerate, Breccia, Sandstone, Shale, Limestone and its varieties
- Megascopic and microscopic study of the following rocks: Schist, Gneiss, Quartzite, Marble, Charnockite and Khondalite.

Structure of the Question Paper

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY PRACTICAL

PAPER – III - PETROLOGY

I .Describe and identify the following megascopic rocks 7x4=28 marks

Tray no:

1.

2

3.

4.

5.

6.

7.

II. Describe and identify the following microscopic rock sections 3x4=12 marks

1.

2.

3.

III. Record 10 Marks

Lab/Practical syllabus: **PAPER – IV (Structural Geology, Palaeontology & General Stratigraphy)**

- Study of topographical maps.
- Interpretation of simple geological maps with horizontal and inclined beds, Unconformity, folds and faults with reference to the topography and structure, geological succession and history. Section drawing
- Problems dealing with true dip and apparent dip. Bore-hole data thickness and width of the outcrop and dip of the beds
- Classification, Morophology and Geological distribution of Fossils: Cidaris, Micraster, Hemiaster. Cerethium, Terebratula, Spirifer, Rhynchonella, Turritella, Natica, Physa, Pecten, Gryphaea, Arca, Cardita, Nautilus, Ammonodis, Ceratites, Bellemnites, Calymene, Paradoxide. Corals. Plant fossils Glossopeteris, Gangamopteris and ptylophyllum.

Structure of the Question Paper

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY PRACTICAL

PAPER – IV - Structural Geology, Palaeontology & General Stratigraphy

I . Study of topographical map	1x8=8 marks
II . Structural Geology problems	2x8=16 marks
III . Fossils	4x4=16 marks
IV. Record	10 Marks

Lab/Practical syllabus: **PAPER – V (*INDIAN GEOLOGY& ECONOMIC GEOLOGY*)**

Megascopic study, mode of occurrence, distribution in India and uses of the following economic minerals: haematite, magnetite Pyrite, Pyrolustie, Psilomelane, Chalcopyrite, malachite, Azurite, Bauxite, Chromite: Galena, Sphalrite, Magnesite, Gypsum, Asbestos, Steatite, Graphite, Monazite, illmenite, Zircon, Fluorite, Barytes, Corundum, Topaz, Calcite, Kaolinite, Kyanite, Sillimanite, Garnet and Mica.

Study of Indian Geology maps.

Structure of the Question Paper

D.N.R. COLLEGE (AUTONOMOUS), BHIMAVARAM

(Affiliated to Adikavi Nannaya University)

II B.Sc. Degree, First Semester (From 2020-2021 Admitted Batch)

SUBJECT: GEOLOGY PRACTICAL

PAPER – IV - Structural Geology, Palaeontology & General Stratigraphy

I . Map Study	1x8=8 marks
III . Economic minerals Study	8x4=32 marks
IV. Record	10 Marks

Subject 9: To approve the break-up of the Internal assessment test marks 25 in 3rd and 4th semester Geology course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Resolution 9: It is resolved to approve the break-up of the Internal assessment test marks 25 (15 + 5 CCA + 5 ECA) in 3rd and 4th semester Geology course(s) of papers III, IV & V for adoption and implementation under Revised Choice Based Credit System.

Subject 10: To approve the qualifying marks in Geology Course(s) for papers III, IV & V of 3rd and 4th semester end theory examination and practical examination for adoption and implementation under revised CBCS.

Resolution 10: It is resolved to approve the qualifying marks in Geology Course(s) for papers III, IV & V for adoption and implementation of semester end theory examination is 40 marks (External-26, Internal-14) and practical examination is 20 marks for adoption and implementation under revised CBCS.

AGENDA & RESOLUTION

Subject 11: To review the existing syllabi, model question papers of both theory and practical of V and VI semester Geology course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Resolution 11: It is reviewed and resolved the existing syllabi, model question papers of both theory and practicals of V and VI semester Geology course in papers 3A, 3B, 4A, 4B, 5B, 6B.

Subject 12: To ratify the Proposal to introduce a new Combination in B.Sc. course with Geology, as one of the subjects, along with Statistics and Computer Science from the academic year 2021-22.

Resolution 12: The Proposal to introduce a new Combination in B.Sc. course with Geology, as one of the subjects, along with Statistics and Computer Science from the academic year 2021-22 is ratified.

AGENDA & RESOLUTION

Subject 13: To approve the list of paper setters and examiners for Geology Course.

Resolution 13: Resolved to approve the following list of paper setters and examiners for Geology course.

Panel of Examiners

1. Dr. M. R. Goutham	Lecturer and HOD of Geology Govt. Degree College Rajahmundry – 533 105
2. Dr. S. S. K. Chaitanya	Lecturer and HOD of Geology C. R. R. College (A) Eluru.
4. Dr P. Ganapathi Rao	Asst. Professor in of Geology M.R. College (A) Vizianagaram.
5. Sri K. Satyanarayana Naidu	Asst. Professor in Geology M.R. College (A) Vizianagaram.
6. Dr. T. Rama Babu	Asst. Professor Dept of Civil Engineering SRKR Engineering College Bhimavaram,

Subject 14: Any other matter with the permission of the chair.

Resolution 14: Any other matter with the permission of the chair.

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM-534202
DEPARTMENT OF COMMERCE (U.G)
AGENDA OF THE BOARD OF STUDIES MEETING

Subject No. 1: To review the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 5th & 6th semesters of B.Com (General) and B.Com (Comp. Appl.) Programmes under CBCS pattern applicable from the batch of students joined 1st year of the said programmes during the academic year 2015-16 onwards.

Subject No. 2: To review the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 1st & 2nd semesters of B.Com (General) and B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/B.Voc(Risk Management) Programmes under Revised CBCS pattern applicable from the batch of students joined 1st year of the said programmes during the academic year 2020-21 onwards.

Subject No. 3: To introduce New Courses for 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc (Accounts & Taxation)/B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Subject No. 4: To approve the syllabus for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined 1st year of the said programmes during the academic year 2020-21 onwards.

Subject No. 5: To approve the model question papers, Blue Print and Structure of Question Papers and Question Banks (for Non-problem oriented courses) which are already prepared for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programees during the academic year 2020-21 onwards.

Subject No. 6: To discuss and approve the allotment of maximum marks and Instruction hours for teaching the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes commencing from the academic year 2020-21 onwards as recommended by APSCHE and the Affiliating University.

Subject No. 7: To discuss and approve the break-up of allotment of Maximum marks, Credits to be allotted and qualifying marks in the respective courses etc., of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Subject No. 8: To discuss and approve the introduction of Certificate Courses.

Subject No. 9: To introduce the Skill Development Course in 3rd Semester of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Subject No.10: To approve the syllabi, Max. Marks allotted Model Question Paper, Credits allotted, Instruction hours per week etc., for the Skill Development Courses.

Subject No.11: To approve the introduction of English Medium in B.Com(General) in pursuance to the G.O.Ms. No.49 dt., 16-09-2021 issued by Govt., of Andhra Pradesh.

Subject No. 12: To discuss the conduct of the Practical Examination in the courses viz., "Programming with C and C++" and "Database Management System" in 3rd and 4th Semesters respectively of B.Com Computer Applications programme under Revised CBCS, applicable for the batches of students joined First Year of the said programmes during the academic year 2021-22 onwards.

Subject No. 13: To change the nomenclature of "Department of Commerce" as "Department of Commerce and Management Studies"

Subject No.14: To discuss and approve the measures to be taken to conduct Online Classes and Online Examinations in all courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes for the respective semesters during the Academic Year 2021-22 whenever physical appearance of the students is not possible.

Subject No.15: To review the initiatives that are being followed for the inclusive development of Learning Management System (LMS) confining to courses being offered by Commerce department.

Subject No.16: To review the functioning MoUs that was entered by the Commerce Dept.

Subject No.17: To approve the list of Recommended Text Books & Reference Books which are listed at the end of the syllabi of the respective courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management)

Subject no. 18: To discuss the effective implementation of Co-curricular activities.

Subject No.19: To review the Seminars / Webinars / Guest Lectures etc., that were conducted during the current academic year.

Subject no.20: To discuss the need of continuity of the Faculty Development, Faculty Exchange and Students' Exchange Programmes.

Subject No. 21: To approve the list of Paper Setters and Examiners for all Commerce and Management Subjects.

CHAIRMAN
COMMERCE BOARD OF STUDIES

CHAIRMAN
Board of Studies in Commerce
D.N.R. College, (Autonomous)
BHIMAVARAM-534 202, (A.P.)

D.N.R.COLLEGE(AUTONOMOUS), BHIMAVARAM-534202
DEPARTMENT OF COMMERCE (U.G)
MINUTES OF THE BOARD OF STUDIES MEETING

Minutes of the meeting of the members of the Board of Studies of Commerce, D.N.R. College (Autonomous), Bhimavaram held on 15-11-2021 at 3.00 pm in the Department of Commerce.

MEMBERS PRESENT:

S.No.	Name of the Member	Status	
1.	Sri D.SRINIVASA RAJU Head, Dept., of Commerce	Chairman	D Srinivasa Raju
2.	Sri J.SURESH Lecturer in Commerce, D.N.R..College.	Member	J Suresh
3.	Dr. U.MADHURI Lecturer in Commerce, D.N.R. College.	Member	U. Madhuri.
4.	Smt. D.V.MADHAVI Lecturer in Commerce, D.N.R. College.	Member	Absent
5.	Smt. R.RADHA RANI Lecturer in Commerce, D.N.R. College	Member	R. Radha Rani
6.	Smt. K. SARIKA Lecturer in Commerce, D.N.R. College	Member	K. Sarika
7.	Miss D.NAGA LAKSHMI Lecturer in Commerce, D.N.R. College	Member	D. Nagalaxmi
8.	Smt. P.NAGA VENI Lecturer in Commerce, D.N.R. College	Member	Absent
9.	Smt. P.HARITHA Lecturer in Commerce, D.N.R. College	Member	Haritha
10.	Ms. P. DIVA KRUPA Lecturer in Commerce, D.N.R. College	Member	P. Diva Krupa
11.	Smt A V VASAVI Lecturer in Commerce, D.N.R. College	Member	A. V. Vasavi
12.	Dr. M NEERAJA Read. HOD of Commerce, S.K.S.D. Mahila Kalasala(A), Tanuku	AKNU Nominee	online
13.	Dr. K. AMMAJI Read. Principal, B.G.B.S. Women's, Narasapuram.	AKNU Nominee	online

14.	Dr. M. RAMESH, Asset. Professor, Dept. of Commerce & Management Studies Adikavi Nannaya University, Rajamahendravaram	AKNU Nominee	online
15.	Sri V. VIJAYA KUMAR, Sr Lecturer in Commerce Sir C R R College, Eluru.	Subject Expert	online
16.	Sri B. VENKATA RATNAM, Head, Dept., of Commerce , Sri Y N College, Narasapuram.	Subject Expert	online
17.	Sri P.RAMA KRISHNAM RAJU Principal (Retd.,) and Administrative Officer	Spl. Invitee	Received
18.	Sri J.MANIKYALA RAO Retired Lecturer, D.N.R. College, Bhimavaram.	Alumni Member	online
19.	Sri P.RAVINDRA VARMA Chartered Accountant, Rajahmundry	Alumni & C.A.	online
20.	Sri G.PANDU RANGA RAJU, Executive Director Delta Paper Mills Limited, Vendra	Industrialist	online
21.	V. DIVYESWARI III B.Com Student, Roll No. 319540332	Student Representative	V. Divyeswari

RESOLUTIONS:

Subject No. 1: To review the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 5th & 6th semesters of B.Com (General) and B.Com (Comp. Appl.) Programmes under CBCS pattern applicable from the batch of students joined 1st year of the said programmes during the academic year 2015-16 onwards.

Resolution No.1: Reviewed thoroughly the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 5th & 6th semesters of B.Com (General) and B.Com (Comp. Appl.) Programmes under CBCS pattern and found to be satisfactory applicable from the batch of students joined 1st year of the said programmes during the academic year 2015-16 onwards.

Subject No. 2: To review the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 1st & 2nd semesters of B.Com (General) and B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/B.Voc(Risk Management) Programmes under Revised CBCS pattern applicable from the batch of students joined 1st year of the said programmes during the academic year 2020-21 onwards.

Resolution No.2: Reviewed thoroughly the existing Syllabi, structure of Question Papers, Credits allotted and allotment of maximum marks of courses of 1st & 2nd semesters of B.Com (General) and B.Com (Comp. Appl.)/ B.Voc (Accounts & Taxation) / B.Voc(Risk Management) Programmes under Revised CBCS pattern and found to be satisfactory applicable from the batch of students joined 1st year of the said programmes during the academic year 2020-21 onwards.

Subject No. 3: To introduce New Courses for 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc (Accounts & Taxation)/B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Resolution No.3: Resolved to introduce the following New Courses for 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.) / B.Voc (Accounts & Taxation)/ B.Voc (Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programmes and commencing from the academic year 2020-21.

B.Com (General)			
SEMESTER - 3		SEMESTER - 4	
Course No.	Name of the Course	Course No.	Name of the Course
3A	Advanced Accounting	4A	Corporate Accounting
3B	Marketing	4B	Cost & Management Accounting
3C	Business Statistics	4C	Income Tax
3D	Logistics Management (Add – on – Course)	4D	Business Laws
		4E	Auditing
		4F	Goods and Services Tax

B.Com (Computer Applications)			
SEMESTER - 3		SEMESTER - 4	
Course No.	Name of the Course	Course No.	Name of the Course
3A	Advanced Accounting	4A	Corporate Accounting
3B	Programming with C and C++	4B	Cost & Management Accounting
3C	Business Statistics	4C	Income Tax
3D	Logistics Management (Add – on – Course)	4D	Business Laws
		4E	Auditing
		4F	Database Management System

B.Voc (Accounts & Taxation)			
SEMESTER - 3		SEMESTER - 4	
Course No.	Name of the Course	Course No.	Name of the Course
3A	Advanced Accounting	4A	Corporate Accounting
3B	Marketing	4B	Cost & Management Accounting
3C	Business Statistics	4C	Income Tax
3D	Business Correspondence and Report Writing	4D	Business Laws
		4E	Auditing
		4F	Goods and Service Tax

B.Voc (Risk Management)			
SEMESTER - 3		SEMESTER - 4	
Course No.	Name of the Course	Course No.	Name of the Course
3A	Stores Management	4A	Purchase Management
3B	Marketing	4B	Rural Marketing

3C	Disaster Management -1	4C	Disaster Management -2
3D	Business Correspondence & Report Writing.	4D	Business Laws
		4E	Auditing
		4F	Event Management

Subject No. 4: To approve the syllabus for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined 1st year of the said programmes during the academic year 2020-21 onwards.

Resolution No. 4: Resolved to approve the syllabus for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined 1st year of the said programmes and commencing from the academic year 2020-21 onwards.

Subject No. 5: To approve the model question papers, Blue Print and Structure of Question Papers and Question Banks (for Non-problem oriented courses) which are already prepared for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programees during the academic year 2020-21 onwards.

Resolution No. 5: Resolved to approve the model question papers, Blue Print and Structure of Question Papers and Question Banks (for Non-problem oriented courses) which are already prepared for the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation, applicable for the batches of students joined First year of the said programes during the academic year 2020-21 onwards. (Model Question papers, Blue Print and Structure of Question Papers and Question Banks are appended herewith)

Subject No. 6: To discuss and approve the allotment of maximum marks and Instruction hours for teaching the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes commencing from the academic year 2020-21 onwards as recommended by APSCHE and the Affiliating University.

Resolution No. 6: Discussed thoroughly and resolved to approve the allotment of maximum marks and Instruction hours for teaching the respective courses of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes commencing from the academic year 2020-21 onwards as recommended by APSCHE and the Affiliating University.

B.Com (General)					
Semester - 3			Semester - 4		
Name of the Paper	Max. Marks allotted	Instruction hours allotted	Name of the Paper	Max. Marks allotted	Instruction hours allotted
Advanced Accounting	100	05	Corporate Accounting	100	05
Business Statistics	100	05	Cost & Management Accounting	100	05
Marketing	100	05	Income Tax	100	05
Logistics Management (Add – on – Course)	100	05	Business Laws	100	05
			Auditing	100	05
			Goods and Services Tax	100	05

B.Com (Computer Applications)					
Semester - 3			Semester - 4		
Name of the Paper	Max. Marks allotted	Instruction hours allotted	Name of the Paper	Max. Marks allotted	Instruction hours allotted
Advanced Accounting	100	05	Corporate Accounting	100	05
Business Statistics	100	05	Cost & Management Accounting	100	05
Programming with C and C++	100	05	Income Tax	100	05
Logistics Management (Add – on – Course)	100	05	Business Laws	100	05
			Auditing	100	05
			Database Management System	100	05

B.Voc (Accounts & Taxation)					
Semester - 3			Semester - 4		
Name of the Paper	Max. Marks allotted	Instruction hours allotted	Name of the Paper	Max. Marks allotted	Instruction hours allotted
Advanced Accounting	100	05	Corporate Accounting	100	05
Marketing	100	05	Cost & Management Accounting	100	05
Business Statistics	100	05	Income Tax	100	05
Business Correspondence & Report Writing	50	02	Business Laws	100	05
			Auditing	100	05
			Goods and Service Tax	100	05

B.Voc (Risk Management)					
Semester - 3			Semester - 4		
Name of the Paper	Max. Marks allotted	Instruction hours allotted	Name of the Paper	Max. Marks allotted	Instruction hours allotted
Stores Management	100	05	Purchase Management	100	05
Marketing	100	05	Rural Marketing	100	05
Disaster Management -1	100	05	Disaster Management -2	100	05
Business Correspondence & Report Writing.	50	02	Business Laws	100	05
			Auditing	100	05
			Event Management	100	05

Subject No. 7: To discuss and approve the break-up of allotment of Maximum marks, Credits to be allotted and qualifying marks in the respective courses etc., of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Resolution No.7: Resolved to approve the break-up of allotment of Maximum marks, Credits to be allotted and qualifying marks in the respective courses etc., of 3rd and 4th Semesters of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Semester No. & Name of the Course	Break-up of Allotment of Maximum Marks (100)					Credits allotted	Qualifying Marks 40%
	External Exam 75%	Internal Examination 25%			Total Marks 100%		
		Theory 15%	Seminar/ Assignment/ Project– 5%	Extra Curricular 5%			
B.Com (General)							
SEMESTER - 3							
Advanced Accounting	75	15	5	5	100	4	40
Business Statistics	75	15	5	5	100	4	40
Marketing	75	15	5	5	100	4	40
Logistics Management (Add–on – Course)	75	15	5	5	100	4	40
SEMESTER - 4							
Corporate Accounting	75	15	5	5	100	4	40
Cost & Management Accounting	75	15	5	5	100	4	40
Income Tax	75	15	5	5	100	4	40
Business Laws	75	15	5	5	100	4	40
Auditing	75	15	5	5	100	4	40
Goods and Services Tax	75	15	5	5	100	4	40
B.Com (Computer Applications)							
SEMESTER - 3							
Advanced Accounting	75	15	5	5	100	4	40
Business Statistics	75	15	5	5	100	4	40
Programming with C and C++	75	15	5	5	100	4	40
Logistics Management (Add–on – Course)	75	15	5	5	100	4	40
SEMESTER - 4							
Corporate Accounting	75	15	5	5	100	4	40
Cost & Management Accounting	75	15	5	5	100	4	40
Income Tax	75	15	5	5	100	4	40
Business Laws	75	15	5	5	100	4	40
Auditing	75	15	5	5	100	4	40
Database Management System	75	15	5	5	100	4	40

B.Voc (Accounts & Taxation)							
SEMESTER - 3							
Advanced Accounting	75	15	5	5	100	4	40
Marketing	75	15	5	5	100	4	40
Business Statistics	75	15	5	5	100	4	40
Business Correspondence & Report Writing	50 (100%)	-	-	-	50	2	20
SEMESTER - 4							
Corporate Accounting	75	15	5	5	100	4	40
Cost & Management Accounting	75	15	5	5	100	4	40
Income Tax	75	15	5	5	100	4	40
Business Laws	75	15	5	5	100	4	40
Auditing	75	15	5	5	100	4	40
Goods and Service Tax	75	15	5	5	100	4	40
B.Voc (Risk Management)							
SEMESTER - 3							
Stores Management	75	15	5	5	100	4	40
Marketing	75	15	5	5	100	4	40
Disaster Management -1	75	15	5	5	100	4	40
Business Correspondence & Report Writing.	50 (100%)	-	-	-	50	2	20
SEMESTER - 4							
Purchase Management	75	15	5	5	100	4	40
Rural Marketing	75	15	5	5	100	4	40
Disaster Management -2	75	15	5	5	100	4	40
Business Laws	75	15	5	5	100	4	40
Auditing	75	15	5	5	100	4	40
Event Management	75	15	5	5	100	4	40

Subject No. 8: To discuss and approve the introduction of Certificate Courses.

Resolution No. 8: Discussed thoroughly and resolve to approve the introduction of following Certificate Courses from the academic year 2021-11 in the place of existing courses. Also resolved to approve the syllabi, model question paper, allotment of marks, Instruction hours.

Name of the Certificate Course	Max. Marks allotted	Instruction hours for the completion of course.
Business Correspondence & Report Writing	50	45
Digital Marketing	50	45
Consumer Behaviour	50	45

Subject No. 9: To introduce the Skill Development Course in 3rd Semester of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes under Revised CBCS for adoption and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Resolution No.9: Resolved to introduce the following Skill Development Course in 3rd Semester of B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes as shown against the course under Revised CBCS for adoption

and implementation as shown in the following table, applicable for the batches of students joined First year of the said programmes during the academic year 2020-21 onwards.

Name of Skill Development Courses	Applicable Programmes
Online Business	B.Com (General)/ B.Com (Comp. Appl.)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management)
Disaster Management	B.A.,/B.Sc.,/B.Voc (Comm. Aquaculture)

Subject No.10: To approve the syllabi, Max. Marks allotted Model Question Paper, Credits allotted, Instruction hours per week etc., for the Skill Development Courses.

Resolution No. 10: Resolved to approve the syllabi, Max. Marks allotted Model Question Paper, Credits allotted, Instruction hours per week etc., for Skill Development Courses as shown in the following table.

Name of Skill Development Courses	Max. marks allotted (100%)	Credits allotted	Instruction hours per week
Online Business	50	02	02
Disaster Management	50	02	02

Note: No internal examination will be conducted to the above Skill Development Courses. Evaluation process shall be done through External Examination for 100% marks.

Subject No.11: To approve the introduction of English Medium in B.Com(General) in pursuance to the G.O.Ms. No.49 dt., 16-09-2021 issued by Govt., of Andhra Pradesh.

Resolution No. 11: Resolved to approve the introduction of English Medium in B.Com(General) in pursuance to the G.O.Ms. No.49 dt., 16-09-2021 issued by Govt., of Andhra Pradesh.

Subject No. 12: To discuss the conduct of the Practical Examination in the courses viz., "Programming with C and C++" and "Database Management System" in 3rd and 4th Semesters respectively of B.Com Computer Applications programme under Revised CBCS, applicable for the batches of students joined First Year of the said programmes during the academic year 2021-22 onwards.

Resolution No. 12: Resolved to conduct practical Examination for 25 marks in the place of CAT-2 of the respective Semester in the courses viz., "Programming with C and C++" and "Database Management System" in 3rd and 4th Semesters respectively of B.Com Computer Applications programme under Revised CBCS, applicable for the batches of students joined First Year of the said programmes, during the academic year 2020-21 onwards. It is also resolved to conduct the said Practical Examination with Internal Examiners only The breakup for 25 marks is as under.

Practical Execution	15 marks
Practical Record preparation	05 marks
Viva voce	05 marks.

Subject No. 13: To change the nomenclature of "Department of Commerce" as "Department of Commerce and Management Studies"

Resolution No.13: Resolved to change the nomenclature of "Department of Commerce" of UG Courses as "Department of Commerce and Management Studies" since more no. of Management Courses are being taught at Undergraduate level by the faculty of Commerce Department.

Subject No.14: To discuss and approve the measures to be taken to conduct Online Classes and Online Examinations in all courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes for the respective semesters during the Academic Year 2021-22 whenever physical appearance of the students is not possible.

Resolution No.14: Resolved to approve the measures to be taken to conduct Online Classes and Online Examinations through Computer Apps, Zoom, Google classroom, Google meet etc., in all courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes for the respective semesters during the Academic Year 2021-22 whenever physical appearance of the students is not possible.

Subject No.15: To review the initiatives that are being followed for the inclusive development of Learning Management System (LMS) confining to courses being offered by Commerce department.

Resolution No.15: Reviewed thoroughly the initiatives that are being followed for the inclusive development of Learning Management System (LMS) confining to courses being offered by Commerce department and found to be satisfactory. Further resolved to generate E-content, PPTs, online courseware etc., for the benefit of the student community.

Subject No.16: To review the functioning MoUs that was entered by the Commerce Dept.

Resolution No.16: Reviewed thoroughly the functioning of existing MoUs and found to be satisfactory. Resolved to work on to enter into MoUs with organizations which can help the Commerce Department with respect to Online classes / Online examinations.

Subject No.17: To approve the list of Recommended Text Books & Reference Books which are listed at the end of the syllabi of the respective courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management)

Resolution No.17: Resolved to approve the list of Recommended Text Books & Reference Books which are listed at the end of the syllabi of the respective courses of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes.

Subject no. 18: To discuss the effective implementation of Co-curricular activities.

Resolution No. 18: Resolved to take-up Co-curricular activities (which are mentioned at the end of the syllabi of the respective paper) for the benefit of the students of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes in addition to the regular academic class work.

Subject No.19: To review the Seminars / Webinars / Guest Lectures etc., that were conducted during the current academic year.

Resolution No. 19: Reviewed the Webinars that were conducted at National and International levels and found to be satisfactory. So, it is resolved to conduct some more Webinars / Seminars/ Guest Lectures during the current academic year.

Subject no.20: To discuss the need of continuity of the Faculty Development, Faculty Exchange and Students' Exchange Programmes.

Resolution No.20: Resolved to continue the Faculty Development, Faculty Exchange and Students' Exchange programmes for the benefit of the students of B.Com (General) / B.Com (Computer Applications)/ B.Voc(Accounts & Taxation)/ B.Voc(Risk Management) programmes in addition to the regular academic class work.

Subject No. 21: To approve the list of Paper Setters and Examiners for all Commerce and Management Subjects.

Resolution No. 21: Resolved to approve the following list of Paper Setters and Examiners for all Commerce and Management Subjects.

S.No	Name of the Lecturer	College Address
1.	Ch. Satyamurthy, Lecturer in Commerce	A.S.N.M.Govt. College(A), Palakol
2.	K.Rama Krishna, Lecturer in Commerce	ABN & PRR College of Science, Kovvuru
3.	Nainbeig, Lecturer in Commerce	ABN & PRR College of Science, Kovvuru
4.	B.Venkata Ratnam, Lecturer in Commerce	Sri Y.N.College(A), Narsapur
5.	R.V.Lakshmi Devi, Lecturer in Commerce	Sri Y.N.College(A), Narsapur
6.	P.Veeraswamy, Lecturer in Commerce	Sri Y.N.College(A), Narsapur
7.	B.Kabitha Rani, Lecturer in Commerce	Sri Y.N.College(A), Narsapur
8.	B.Varalakshmi, Lecturer in Commerce	Sri Y.N.College(A), Narsapur
9.	K.Sarveswara Rao, Lecturer in Commerce	Ideal College(a), Kakinada
10.	V.Nageswara Rao, Lecturer in Commerce	Ideal College(a), Kakinada
11.	R.Venkateswarlu, Lecturer in Commerce	Ideal College(a), Kakinada
12.	V.Rama Mohan Rao, Lecturer in Commerce	Ideal College(a), Kakinada
13.	Y.R.L.Chowdary, Lecturer in Commerce	Ideal College(a), Kakinada
14.	M.G.K.Yadav, Lecturer in Commerce	Ideal College(a), Kakinada
15.	P.Lakshmi Devi, Lecturer in Commerce	S.K.S.D.Mahila Kalasala(A), Tanuku
16.	Ch. Rama Devi, Lecturer in Commerce	S.K.S.D.Mahila Kalasala(A), Tanuku
17.	K.Bala Tripura Sundari, Lecturer in Commerce	S.K.S.D.Mahila Kalasala(A), Tanuku
18.	A.V.Satyanarayana, Lecturer in Commerce	S.K.S.D.Mahila Kalasala(A), Tanuku
19.	P.Rajababu, Lecturer in Commerce	DAR College, Nuzividu
20.	V.Ramesh, Lecturer in Commerce	DAR College, Nuzividu
21.	V.Suresh, Lecturer in Commerce	DAR College, Nuzividu
22.	N.Narasimha Murthy, Lecturer in Commerce	DAR College, Nuzividu
23.	V.Vijaya Kumar, Lecturer in Commerce	Sir CRR College(a), Eluru
24.	B.Surya Prakasa Rao, Lecturer in Commerce	Sir CRR College(a), Eluru
25.	B.V.R.D.Phani Kumar, Lecturer in Commerce	Sir CRR College(a), Eluru
26.	S.Elija Raju, Lecturer in Commerce	Sir CRR College(a), Eluru
27.	D.N.V.Sridha, Lecturer in Commerce	Sir CRR College(a), Eluru
28.	A.Lavanya, Lecturer in Commerce	Sir CRR College(a), Eluru
29.	B. Amitha, Lecturer in Commerce	DNR Women's College, Palakol
30.	G.Harathi, Lecturer in Commerce	DNR Women's College, Palakol
31.	R.S.N.Raju, Lecturer in Commerce	SKBR College, Amalapuram
32.	V.Krishna Mohan, Lecturer in Commerce	SKBR College, Amalapuram
33.	Dr. K.Satyanarayana, Lecturer in Commerce	SKBR College, Amalapuram
34.	K.V.V.Satyanarayana, Lecturer in Commerce	SKBR College, Amalapuram
35.	G.S.D.Prasada Rao, Lecturer in Commerce	SKBR College, Amalapuram
36.	P.Sundara Ramaiah, Lecturer in Commerce	SKBR College, Amalapuram
37.	M.Satyanarayana Murthy, Lecturer in Commerce	SKBR College, Amalapuram
38.	Y.V.Jyothi, Lecturer in Commerce	SKBR College, Amalapuram
39.	K.Rambabu, Lecturer in Commerce	SKBR College, Amalapuram
40.	P.Indumathi Someswari, Lecturer in Commerce	SKBR College, Amalapuram
41.	B.V.Stepon, Lecturer in Commerce	Noble College(A), Machilipatnam
42.	T.Deena Elijebeth, Lecturer in Commerce	Noble College(A), Machilipatnam

S.No	Name of the Lecturer	College Address
43.	M.V.Gopi Krishna, Lecturer in Commerce	Noble College(A), Machilipatnam
44.	D.Nancharaiah, Lecturer in Commerce	Noble College(A), Machilipatnam
45.	Y.Subrahmanyam, Lecturer in Commerce	Noble College(A), Machilipatnam
46.	K.Bhavani, Lecturer in Commerce	Noble College(A), Machilipatnam
47.	K.Sandeep, Lecturer in Commerce	Noble College(A), Machilipatnam
48.	M.P.Rama Mohana Rao, Lecturer in Commerce	VSM College(A), Ramachandrapuram
49.	K.V.V.S.Chowdary, Lecturer in Commerce	VSM College(A), Ramachandrapuram
50.	V.S.R.Chowdary, Lecturer in Commerce	VSM College(A), Ramachandrapuram
51.	K.Srinivas, Lecturer in Commerce	VSM College(A), Ramachandrapuram
52.	D.Madhura Meenakshi, Lecturer in Commerce	VSM College(A), Ramachandrapuram
53.	V.Rama Krishna, Lecturer in Commerce	VSM College(A), Ramachandrapuram
54.	M.Phani Kumar, Lecturer in Commerce	VSM College(A), Ramachandrapuram
55.	Dr. K.Rathna Manikyam, HoD of Commerce	Govt., Arts College, Rajahmundry
56.	Dr.A.A.Annapurna, Lecturer in Commerce	Govt., Arts College, Rajahmundry
57.	Dr. P.Shanmukha Rao, Lecturer in Commerce	Govt., Arts College, Rajahmundry
58.	K.Appala Narasimham, Lecturer in Commerce	Govt., Arts College, Rajahmundry
59.	P.V.Prasad, Lecturer in Commerce	Govt., Arts College, Rajahmundry
60.	K.S.N.Murthy, Lecturer in Commerce	P.R.Govt., College, Kakinada
61.	J.Pandu Ranga Rao, Lecturer in Commerce	P.R.Govt., College, Kakinada
62.	T.T.Vijaya Prasad, Lecturer in Commerce	P.R.Govt., College, Kakinada
63.	Ch. Balaji, Lecturer in Commerce	P.R.Govt., College, Kakinada
64.	K.B.N.Kumari, Lecturer in Commerce	P.R.Govt., College, Kakinada
65.	G.Nooka Raju, Lecturer in Commerce	P.R.Govt., College, Kakinada
66.	D.Madhu Prasad, Lecturer in Commerce	P.R.Govt., College, Kakinada

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(Accredited by NAAC at "B++" grade)
(Affiliated to Adikavi Nannaya University)
II B.Com Degree Examination at the end of 3rd Semester
Title of the Programme: B.Voc (R.M)
Title of the Course: STORES MANAGEMENT – 3A
(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

SYLLABUS

Unit-I: Stores Function: Layout and Organization - Stores Responsibilities - Relationships with Other Departments - Logistics - Supply Chain - Coding of materials - Methods of Coding

Unit-II: Material Receipt and Issue: Receipts from Suppliers - Inspection - Authorization of issues - Methods of issue - Records and Systems - Manual Systems - Computerized Systems – Recent Developments.

Unit-III: Stock Control Techniques: Approaches to Control - ABC Analysis - Provision of Safety Stock - Stocktaking Procedure - Obsolescence and Redundancy - Prevention of Deterioration – Stock Checking.

Unit-IV: Stores Operations: Storehouse Location - Centralization of Storage - Measurement of Stores efficiency - Health and Safety directives on stores operations - Manual and Mechanical lifting - Control of Substances Hazardous to Health Regulations - Storage Equipment.

Unit-V: Procedure Manuals: Need for Manuals - Preparation of the Manual - Contents of the Manual - Publication and Distribution - Implementation of the Manuals.

Reference Books:

1.Jessop David & Morrison Alex, Storage and Supply of Materials, Pearson Education Ltd. England.
2. Saleemi N.A., Store keeping and Stock Control Simplified, Saleemi Publications Ltd., Nairobi.
3. Gopalakrishnan P. & Sundaresan. M., Materials Management-An Integrated Approach, PHI.
4. P. Gopala Krishan, Purchasing and Materials Management, Tata McGraw-Hill Education.

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II B.Com Degree Examination at the end of 3rd Semester

Title of the Programme: B.Voc (R.M)

Title of the Course: Stores Management – 3A

(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

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UNIT No's	*Details of the topics*	*EQ*	*SQ*
UNIT-1	**Stores Function:** Layout and Organization - Stores Responsibilities - Relationships with Other Departments - Logistics - Supply Chain - Coding of materials - Methods of Coding	2	2
UNIT-II	**Material Receipt and Issue:** Receipts from Suppliers - Inspection - Authorization of issues - Methods of issue - Records and Systems - Manual Systems - Computerized Systems – Recent Developments.	2	2
UNIT-III	**Stock Control Techniques:** Approaches to Control - ABC Analysis - Provision of Safety Stock - Stocktaking Procedure - Obsolescence and Redundancy - Prevention of Deterioration – Stock Checking.	2	1
UNIT-IV	**Stores Operations:** Storehouse Location - Centralization of Storage - Measurement of Stores efficiency - Health and Safety directives on stores operations - Manual and Mechanical lifting - Control of Substances Hazardous to Health Regulations - Storage Equipment.	2	2
UNIT-V	**Procedure Manuals:** Need for Manuals - Preparation of the Manual - Contents of the Manual - Publication and Distribution - Implementation of the Manuals.	2	1

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II B.Com Degree Examination at the end of 3rd Semester

Title of the Programme: B.Voc (R.M)

Title of the Course: Stores Management – 3A

(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

MODEL QUESTION PAPER

TIME : 3hrs **Max Marks : 75**

SECTION – A

I. Answer the following questions. All questions carry equal marks ***5 x 10 = 50 M***

1a) Define stores. What are the responsibilities of a store?

(OR)

b) Explain the relationship of stores with other departments.

2 a) What are the documents required for issue of a materials?

(OR)

b). Write about different methods of Issue of Materials?

3a)Explain about ABC analysis.

(OR)

b) Write about stock taking procedures.

4a) Write the important factors of store house location.

(OR)

b) Explain the advantages and disadvantages of centralized stores.

5a) Discuss about preparation of the manuals.

(OR)

b) Discuss about the procedure for implementation of manuals.

SECTION – II

Answer any Five questions ***5 x 5= 25M***

6. Explain about logistics.
7. What is store environment? Explain the advantages of a good store atmosphere .
8. Distinguish between stock card and stores ledger.
9. What is meant by continuous stock taking?
10. Discuss about material receipts.
11. What is meant by centralisation of storage?
12. How manuals are useful for stores?
13. What is store image building ?

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II B.Com Degree Examination at the end of 3rd Semester
Title of the Programme: B.COM(General) B.Voc (R.M & A&T)
Title of the Course: MARKETING – 3B
(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

SYLLABUS

Unit-I: Introduction: Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.

Unit-II: Consumer Behaviour and Market Segmentation: Buying Decision Process – Stages – Buying Behaviour – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation.

Unit-III: Product Management: Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labeling.

Unit-IV: Pricing Decision: Factors Influencing Price – Determination of Price - Pricing Strategies: Skimming and Penetration Pricing.

Unit-V: Promotion and Distribution: Promotion Mix - Advertising - Sales promotion - Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels- Online Marketing

Reference Books:

1. Philip Kotler, Marketing Management, Prentice Hall of India.
2. Philip Kotler & Gary Armstrong, Principles of Marketing, Pearson Prentice Hall.
3. Stanton J. William & Charles Futrel, Fundamentals of Marketing, McGraw Hill.
4. V.S. Ramaswamy S. NamaKumari, Marketing Management – Planning, McMillan.
5. The Consumer Protection Act 1986 and Consumer Protection Act 2019.
6. Dhruv Grewal and Michael Levy,Marketing, McGraw Hill Education.
7. Dr L Natarajan, Financial Markets, Margham Publications.
8. Dr M Venkataramanaiah, Marketing, Seven Hill International Publishers.
9. C N Sonanki, Marketing, Kalyani Publications.

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II B.Com Degree Examination at the end of 3rd Semester
Title of the Programme: B.COM(General) B.Voc (R.M & A&T)
Title of the Course: MARKETING – 3B
(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

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UNIT No's	*Details of the topics*	*EQ*	*SQ*
UNIT-1	**Introduction:** Concepts of Marketing: Need, Wants and Demand - Marketing Concepts – Marketing Mix - 4 P's of Marketing – Marketing Environment.	2	2
UNIT-II	**Consumer Behaviour and Market Segmentation:** Buying Decision Process – Stages – Buying Behaviour – Market Segmentation –Bases of Segmentation - Selecting Segments – Advantages of Segmentation.	2	2
UNIT-III	**Product Management**: Product Classification – Levels of Product - Product Life Cycle - New Products, Product Mix and Product Line Decisions - Design, Branding, Packaging and Labeling.	2	1
UNIT-IV	**Pricing Decision:** Factors Influencing Price – Determination of Price - PricingStrategies: Skimming and Penetration Pricing.	2	1
UNIT-V	**Promotion and Distribution:** Promotion Mix - Advertising - Sales promotion -Publicity – Public Relations - Personal Selling and Direct Marketing - Distribution Channels-Online Marketing	2	2

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II B.Com Degree Examination at the end of 3rd Semester

Title of the Programme: B.COM(General) B.Voc (R.M & A&T)

Title of the Course: MARKETING – 3B

(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

MODEL QUESTION PAPER

TIME : 3hrs **Max Marks : 75**

SECTION – A

I. Answer the following questions. **5 x 10 = 50 marks**

1. (a) Explain the different concepts of marketing.
   మార్కెటింగ్ గురించిన వివిధ భావనలను వివరించండి.

   (OR)

   (b) Write about 4P's concept.
   4P's భావనను గూర్చి వ్రాయుము.

2. (a) Define the consumer behaviour. Explain the decision making process of consumer.
   వినియోగదారుని ప్రవర్తనను నిర్వచించి వారి నిర్ణయ ప్రక్రియను వివరింపుము.

   (OR)

   (b) Explain the theories of Buyer's behaviour.
   కొనుగోలుదారుని ప్రవర్తన యొక్క సిద్ధాంతాలను వివరింపుము.

3. (a) What is Product Life Cycle? Explain the stages of Product life cycle?
   వస్తు జీవిత చక్రం అనగానేమి? వస్తువు జీవిత చక్రంలోని వివిధ దశలను వివరింపుము.

   (OR)

   (b) Explain the packaging Strategies.
   ప్యాకేజింగ్ వ్యూహాలను వివరింపుము.

4. (a) What is pricing? Explain the objectives of pricing.
   ధర నిర్ణయంను అనగానేమి? దాని లక్ష్యాలను వివరించండి.

   (OR)

   (b) Explain the various pricing methods.
   వివిధ ధర నిర్ణయ పద్ధతులను వివరించండి.

5. (a)What is advertising? Explain the objectives of Advertising.
   అడ్వర్టైజింగ్ అనగానేమి ? అడ్వర్టైజింగ్ యొక్క లక్ష్యాలను వివరింపుము.

   (OR)

   (b) Explain various types of distribution channels.
   వివిధ రకాలైన పంపిణీ మార్గాలను వివరింపుము.

Section - B

Answer any **FIVE** of the following. 5 X 5 = 25M

6. State the feature of Marketing.

మార్కెటింగ్ యొక్క లక్షణాలను పేర్కొనుము.

7. Write about product mix?
   వస్తు మిశ్రమం గూర్చి వ్రాయుము.
8. Explain the role of people in buying process.

   కొనుగోలు ప్రక్రియలో వ్యక్తుల పాత్రను వివరించండి.
9. Explain the limitations of market segmentation.
   మార్కెట్ విభజన యొక్క పరిమితులను వివరించండి.
10. What do you meant by new product?

    నుతన వస్తువు అనగానేమి?
11. Write about penetrating pricing.
    చొచ్చుకుపోయే ధరనిర్ణయం గూర్చి వ్రాయండి.
12. What is Promotion mix?
    ప్రామోషన్ మిక్స్ అనగానేమి?
13. Write about Online market.
    ఆన్లైన్ మార్కెట్ గూర్చి వ్రాయండి.

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CHAIRMAN,
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BHIMAVARAM-534 202, (A.P.)

D.N.R.COLLEGE (AUTONOMOUS), BHIMAVARAM-534 202
(A College with Potential for Excellence)
(Accredited by NAAC at "B++" grade)
(Affiliated to Adikavi Nannaya University)
II B.Com Degree Examination at the end of 3rd Semester
Title of the Programme: B.COM(C.A.)
Title of the Course: PROGRAMMING WITH C & C++ - 3B
(w.e.f. the batch of students who joined 1st B.Com & B.Voc during the academic year 2020-21)

Syllabus

UNIT I: Introduction and Control Structures

History of 'C' - Structure of C program – C character set, Tokens, Constants, Variables, Keywords, Identifiers – C data types - C operators - Standard I/O in C - Applying if and Switch Statements

UNIT II: Loops and Arrays

Use of While, Do While and For Loops - Use of Break and Continue Statements - Array Notation and Representation - Manipulating Array Elements - Using Multi Dimensional Arrays

UNIT III: Strings and Functions

Declaration and Initialization of String Variables - String Handling Functions -Defining Functions -Function Call - Call by Value, Call by Reference – Recursion

UNIT IV: Classes and Objects

Introduction to OOP and its basic features - C++ program structure - Classes andobjects - Friend Functions-Constructor – Types of constructors – Destructors.

UNIT V: Inheritance

Inheritance - Types of Inheritance -Types of derivation- Public – Private - Protected Hierarchical Inheritance - Multilevel Inheritance – Multiple Inheritance - Hybrid Inheritance

Learning Resources (Course 3C: Programming with C & C++)

Reference Books:

1. E-commerce and E-business Himalaya publishers.
2. E-Commerce by Kenneth C Laudon, PEARSON INDIA.
3. Web Design: Introductory with Mind Tap Jennifer T Campbell, Cengage India.
4. HTML & WEB DESIGN:TIPS& TECHNIQUES JAMSA, KRIS, McGraw Hill.
5. Fundamentals Of Web Development by Randy Connolly, Ricardo Hoar, Pearson.
6. HTML & CSS: COMPLETE REFERENCE POWELL,THOMAS, McGrawHill