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**MODIFIED CBCS CURRICULUM OF  
SIX MONTH CERTIFICATE COURSE ON  
FORESTRY, WILDLIFE AND CLIMATE CHANGE  
PROGRAMME**

**Updated on 26.03.2022**

**SUBJECT CODE = FWCC**

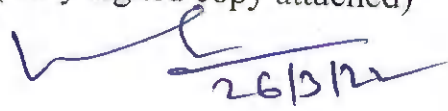
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**FOR POST GRADUATE COURSES UNDER RANCHI UNIVERSITY**



Implemented w.e.f.  
Academic Session 2022

The Draft Syllabus of Six months Certificate Course on Forestry, Wildlife and Climate Change Programme (2022) of Ranchi University was placed before the Board of Studies (Botany). The members discussed about the contents of the syllabus in details. Some minor modifications were suggested. All the suggestions were incorporated and thereafter the syllabus was approved by the Members of Board of Studies. (Duly signed copy attached)

  
26/3/22

Abhinav Kumar  
26/3/22

  
26.3.22

Members of Board of Studies of CBCS Syllabus as per Guidelines of the Ranchi University, Ranchi.

Syllabus Constituted by Board of Studies in Six Month Certificate Course on Forestry, Wildlife and Climate Change, Ranchi University, Ranchi  
(w.e.f. 2022 onwards)

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26/3.2022

Session 2022 Onwards

*Anil Kumar*  
26/3/22

*Rakesh*  
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*Sudeta Negi*  
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*Abhinav*  
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*Bharat*  
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*Dharam*  
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COURSE STRUCTURE FOR M.Sc. BOTANY

**Table AI-1: Distribution of 25 Credits for Subjects without Practical Papers**

[\*wherever there is a practical examination there will be no tutorial and vice-versa.]

Course	Papers	Credits Theory + Practical	Credits Theory + Tutorial
<b>II. Core Course (CC)</b>	Theory	<b>(CC 1 to 5)</b> 4 Papers	4X5=20
	Practical/ Tutorial* Project		
<b>Total Credit</b>			<b>= 25</b>

**Table AI-2.1 Semester wise Examination Structure for Mid Sem & End Sem Examinations:**

Sem	Core, SE/ GE/ DC/ EC & Compulsory FC Courses				Examination Structure		
	Paper	Paper Code	Credit	Name of Paper	Mid Semester Evaluation (F.M.)	End Semester Evaluation (F.M.)	End Semester Practical/ Viva (F.M.)
<b>I</b>	Core Course	CCFWCC101	5	Silviculture, Forest Ecology and Ethnobotany	30	70	---
	Core Course	CCFWCC102	5	Agroforestry, Social Forestry, Joint Forestry Management and Tribal Study	30	70	---
	Core Course	CCFWCC103	5	Environmental Conservation and Biodiversity	30	70	---
	Core Course	CPFWCC104	5	Forest Management and Management System, Forest Protection and Wildlife Biology	30	70	---
	PROJECT	PRFWCC105	5	Project Work	---	---	70 + 30

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*Sanjay Gyanjyoti*  
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*Manish*  
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*Kandor*  
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## SEMESTER I

5 Papers

Total 100 x 5 = 500 Marks

I. CORE COURSE [CCFWCC101]:

(Credits: Theory-04, Tutorial-01)

Marks: 30 (MSE: 20Th. 1Hr + 5Attd. + 5Assign.) + 70 (ESE: 3Hrs)=100

Pass Marks (MSE:17 + ESE:28)=45

Instruction to Question Setter:Mid Semester Examination (MSE):

There will be two groups of questions in written examinations of 20 marks. Group A is compulsory and will contain five questions of very short answer type consisting of 1 mark each. Group B will contain descriptive type five questions of five marks each, out of which any three are to be answered.

End Semester Examination (ESE):

There will be two groups of questions. Group A is compulsory and will contain two questions. Question No.1 will be very short answer type consisting of five questions of 1 mark each. Question No.2 will be short answer type of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to be answered.

Note: There may be subdivisions in each question asked in Theory Examinations

The Mid Semester Examination shall have three components. (a) Two Semester Internal Assessment Test (SIA) of 20 Marks each, (b) Attendance/ regular interactions of 05 marks and (c) Seminar/ assignment of 05 marks. "Better of Two" shall be applicable for computation of marks for SIA.

(Attendance Upto 75%, 1 mark; 75 < Attd. < 80, 2 marks; 80 < Attd. < 85, 3 marks; 85 < Attd. < 90, 4 marks; 90 < Attd., 5 marks).

**SILVICULTURE, FOREST ECOLOGY AND ETHNOBOTANY**

Theory: 60 Hours; Tutorial: 15 Hours

## SILVICULTURE – GENERAL:

GENERAL SILVICULTURAL PRINCIPLES: Ecological and physiological factors influencing vegetation, natural and artificial regeneration of forests; site factors; nursery and planting techniques nursery beds, poly bags and maintenance, water budgeting, grading and hardening of seedlings; special approaches, establishment and tending.

SILVICULTURE SYSTEM: Clear felling, uniform shelter wood selection, coppice and conversion systems, Management of silviculture systems of temperate, subtropical, humid tropical, dry tropical and coastal tropical forests with special reference to plantation silviculture, choice of species, establishment and management of standards, enrichment methods, technical constraints, intensive mechanized methods, aerial seeding, thinning.

FOREST ECOLOGY: Biotic and abiotic components, forest ecosystems; forest community concepts; vegetation concepts, ecological succession and climax, primary productivity, nutrient cycling and water relations; physiology in stress environments (drought, water logging, salinity and alkalinity). Forest types in India, Conservation of forest ecosystem.

FOREST RESOURCES AND UTILIZATION: Environmentally sound forest harvesting practices; logging and extraction techniques and principles, transportation systems, storage and sale; Non

Session 2022 Onwards

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Session 2022 Onwards

Session 2022 Onwards

Session 2022 Onwards

Session 2022 Onwards

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Timber Forest Products (NTFPs) – definition and scope; gums, resins, oleoresins, fibres, oil seeds nuts, rubber, canes, bamboos, medicinal plants, charcoal, lac and shellac, katha and bidi leaves, collection, processing and disposal; need and importance of wood seasoning and preservation; general principles of seasoning, air and kiln seasoning, solar dehumidification, steam heated and electric kilns.

Pranav  
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Pranav  
28/3/22

Rohit  
28/3/22

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28/3/22

Session 2022 Onwards

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26/03/22

Pranav  
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Akhinshava  
26/3/22

Samir Bijuwan Kalay  
26/3/22

Kaushik  
26-3-22

**II. CORE COURSE [CCFWCC102]:**

(Credits: Theory-04, Tutorial-01)

**Marks: 30 (MSE: 20Th. 1Hr + 5Attd. + 5Assign.) + 70 (ESE: 3Hrs)=100****Pass Marks (MSE:17 + ESE:28)=45****Instruction to Question Setter:****Mid Semester Examination (MSE):**

There will be two groups of questions in written examinations of 20 marks. Group A is compulsory and will contain five questions of very short answer type consisting of 1 mark each. Group B will contain descriptive type five questions of five marks each, out of which any three are to be answered.

**End Semester Examination (ESE):**

There will be two groups of questions. Group A is compulsory and will contain two questions. Question No.1 will be very short answer type consisting of five questions of 1 mark each. Question No.2 will be short answer type of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to be answered.

**Note:** There may be subdivisions in each question asked in Theory Examinations

The Mid Semester Examination shall have three components. (a) Two Semester Internal Assessment Test (SIA) of 20 Marks each, (b) Attendance/ regular interactions of 05 marks and (c) Seminar/ assignment of 05 marks. "Better of Two" shall be applicable for computation of marks for SIA.

(Attendance Upto 75%, 1 mark; 75 < Attd. < 80, 2 marks; 80 < Attd. < 85, 3 marks; 85 < Attd. < 90, 4 marks; 90 < Attd, 5 marks).

**AGROFORESTRY, SOCIAL FORESTRY, JOINT FORESTRY MANAGEMENT AND TRIBAL STUDY****Theory: 60 Hours; Tutorial: 15 Hours**

AGROFORESTRY : Scope and necessity; role in the life of people and domestic animals and in integrated land use, planning specially related to (i) soil and water conservation; (ii) water recharge; (iii) nutrient availability to crops; (iv) nature and eco-system preservation including ecological balances through pest-predator relationship and (v) providing opportunities for enhancing biodiversity, medicinal and other flora and fauna, agro forestry system under different agro-ecological zones, selection of species and role of multipurpose trees and NTFPs, techniques, food, fodder and fuel security; research and extension needs.

SOCIAL/URBAN FORESTRY: Objectives, scope and necessity; people's participation.

JOINT FOREST MANAGEMENT: Principles, objectives, methodology, scope, benefits and role of NGOs.

TRIBAL STUDIES: Tribal scene in India; tribes, concept of race; principles of social grouping, stages of tribal economy, education, cultural tradition, customs, ethos and participation in forestry programmes.

Ladly Dami  
26.3.2022

Session 2022 Onwards

Omach  
26/3/22

Rising  
26/3/22

Anil Kumar  
26/3/22

Shweta Negi  
26/03/22

Sharan  
26.3.22

Akhilava  
26/3/22

Sanjay Singh  
26/3/22

Kandor  
26/3/22



**III. CORE COURSE [CCFWCC103]:**

(Credits: Theory-04, Tutorial-01)

**Marks: 30 (MSE: 20Th. 1Hr + 5Attd. + 5Assign.) + 70 (ESE: 3Hrs)=100****Pass Marks (MSE:17 + ESE:28)=45****Instruction to Question Setter:****Mid Semester Examination (MSE):**

There will be two groups of questions in written examinations of 20 marks. **Group A is compulsory** and will contain five questions of **very short answer type** consisting of 1 mark each. **Group B will contain descriptive type five questions** of five marks each, out of which any three are to be answered.

**End Semester Examination (ESE):**

There will be two groups of questions. **Group A is compulsory** and will contain two questions. **Question No.1 will be very short answer type** consisting of five questions of 1 mark each. **Question No.2 will be short answer type** of 5 marks. **Group B will contain descriptive type six questions** of fifteen marks each, out of which any four are to be answered.

**Note:** There may be subdivisions in each question asked in Theory Examinations

The Mid Semester Examination shall have three components. (a) Two Semester Internal Assessment Test (SIA) of 20 Marks each, (b) Attendance/regular interactions of 05 marks and (c) Seminar/assignment of 05 marks. "Better of Two" shall be applicable for computation of marks for SIA.

(Attendance Upto 75%, 1 mark; 75 < Attd. < 80, 2 marks; 80 < Attd. < 85, 3 marks; 85 < Attd. < 90, 4 marks; 90 < Attd., 5 marks).

**ENVIRONMENTAL CONSERVATION AND BIODIVERSITY****Theory: 60 Hours; Tutorial: 15 Hours**

Components and importance, principles of conservation, impact of deforestation; forest fires and various human activities like mining, construction and developmental projects, population growth on environment; global warming and climate change, green house effects, climate change and health, impact of climate change on agriculture, climate change and sea level rise; renewable energy, biodiversity protection and climate change, forest and climate change; waste management; ozone layer depletion, impact and control measures, environmental monitoring; concepts of sustainable development, roles of trees and forests in environmental conservation, carbon sequestration potential of forests, control and prevention of air, water and noise pollution, environmental policy and legislation in India; environmental impact assessment.

Session 2022 Onwards

IV. CORE COURSE [CCFWCC104]:

(Credits: Theory-04, Tutorial-01)

Marks: 30 (MSE: 20Th. 1Hr + 5Attd. + 5Assign.) + 70 (ESE: 3Hrs)=100

Pass Marks (MSE:17 + ESE:28)=45

Instruction to Question Setter:Mid Semester Examination (MSE):

There will be two groups of questions in written examinations of 20 marks. Group A is compulsory and will contain five questions of very short answer type consisting of 1 mark each. Group B will contain descriptive type five questions of five marks each, out of which any three are to be answered.

End Semester Examination (ESE):

There will be two groups of questions. Group A is compulsory and will contain two questions. Question No.1 will be very short answer type consisting of five questions of 1 mark each. Question No.2 will be short answer type of 5 marks. Group B will contain descriptive type six questions of fifteen marks each, out of which any four are to be answered.

Note: There may be subdivisions in each question asked in Theory Examinations

The Mid Semester Examination shall have three components. (a) Two Semester Internal Assessment Test (SIA) of 20 Marks each, (b) Attendance/ regular interactions of 05 marks and (c) Seminar/ assignment of 05 marks. "Better of Two" shall be applicable for computation of marks for SIA.

(Attendance Upto 75%, 1 mark; 75 < Attd. < 80, 2 marks; 80 < Attd. < 85, 3 marks; 85 < Attd. < 90, 4 marks; 90 < Attd. < 95, 5 marks).

## FOREST MANAGEMENT AND MANAGEMENT SYSTEM, FOREST PROTECTION AND WILDLIFE BIOLOGY

Theory: 60 Hours; Tutorial: 15 Hours

FOREST MANAGEMENT AND MANAGEMENT SYSTEM: Objective and principles; techniques; stand structure and dynamics, sustained yield relation; rotation, normal forest, growing stock; regulation of yield; management of forest plantations, commercial forests, forest cover monitoring, Joint Forest Participatory Management, details of steps involved such as formation of Village Forest Committees.

FOREST PROTECTION AND WILDLIFE BIOLOGY: Injuries to forest – abiotic and biotic, destructive agencies, insect pests and disease, effects of air pollution on forests and forest die back. Susceptibility of forests to damage, nature of damage, cause, prevention, protective measures and benefits. General forest protection against fire, equipment and methods, controlled use of fire, economic and environmental costs; rotational and controlled grazing, different methods of control against grazing and browsing animals; effect of wild animals on forest regeneration, human impacts, encroachment, wildlife in India and their management, wildlife outside protected areas, landscape connectivity, human wildlife interactions, wildlife tourism, poaching, grazing, live fencing.

Ladly Dami  
26.3.2022  
Session 2022 Onwards

Prakash  
26/3/22

Roshni  
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Anil Kumar  
26/3/22

Sheeti Neel  
26/03/22

Adil  
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Sharon  
26.3.22

Sanjay Guptan  
26/3/22

Kaushik  
26.3.22

**I. CORE COURSE (PROJECT) [PRFWCC105]:**

(Credits: 05)

**Marks : 100 (ESE: 3Hrs)=100****Pass Marks =45****Guidelines to Examiners for****End Semester Examination (ESE):**

Overall project dissertation may be evaluated under the following heads:

- Motivation for the choice of topic
- Project dissertation design
- Methodology and Content depth
- Results and Discussion
- Future Scope & References
- Participation in Internship programme with reputed organization
- Application of Research technique in Data collection
- Report Presentation
- Presentation style
- Viva-voce

**The distribution of marks will be as follows:**

- |  |    |
|--|----|
| 1. Assessment of Project Thesis.   | 70 |
| 2. Describe in brief your work on project with its significance.                                     | 10 |
| 3. Eminent Scientists related to your project work Scientific Journals related to your project work. | 10 |
| 4. Viva-voce.  | 10 |

**PROJECT WORK**

Each student **must** submit two copies of the dissertation work duly forwarded by the **Director of the Course and duly signed by the supervisor concerned**. The forwarded copies will be submitted in the Department of Botany, Ranchi University, for evaluation (Seven days before the seminar).

**Topics**

Each students shall have to complete a project work on any topic of his choice, but relevant to a topic from the concerned special paper, or on a topic allotted by his/her Project Guide/ Supervisor/ Department in Semester -IV.

The topic of project should be completed under following heads:

1. Introduction
2. Review literature
3. Materials and Methods
4. Results
5. Discussion
6. Reference

The practical of project should be completed either in the Departmental laboratory/Institution.

NB:- Students will select topics for the project work in consultation with a teacher of the department. The Seminar will be held in the Department of Botany, Ranchi University, Ranchi.

Session 2022 Onwards

Leela Devi  
26/3/22

Rishi  
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Anil Kumar  
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Sheetal Negi  
26/03/22

All  
Sharan  
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James  
26-3-22

DISTRIBUTION OF CREDITS FOR P.G. PROGRAMME (SEMESTER-WISE) FOR POSTGRADUATE 'P.G. Voc./M.Sc./M.A./M.Com' PROGRAMME

Table B-1: Semester wise distribution of 25 Credits for Subjects without Practical Papers.

Semester	CC	FC	GE/DC	AE	Total credits
Semester I	25				25
Semester II					
Semester III					
Semester IV					
	25				25

CC=Core Course; FC=Foundation Compulsory/Elective Course; GE=Generic Elective; SE=Skill Enhancement Course; DC=Discipline Centric Elective

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Suman Gungun Lal  
26/03/22

AK  
26/3/22  
Kandor  
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Session 2022 Onwards

SAMPLE CALCULATION FOR SGPA & CGPA FOR POSTGRADUATE 'P.G. Voc./M.Sc./M.A./M.Com' PROGRAMME

Table B-2: Sample calculation for SGPA for M.Sc./M.A./M.Com Programme

Course	Credit	Grade Letter	Grade Point	Credit Point (Credit X Grade)	SGPA (Credit Point/Credit)
<b>Semester I</b>					
FC	05	A	8	40	
C-1	05	B+	7	35	
C-2	05	B	6	30	
C-3/CP	05	B	6	30	
<b>Total</b>	<b>20</b>			<b>135</b>	<b>6.60 (135/20)</b>
<b>Semester II</b>					
C-4	05	B	6	30	
C-5	05	C	5	25	
C-6	05	B+	7	35	
C-7/CP	05	A+	9	45	
<b>Total</b>	<b>20</b>			<b>135</b>	<b>6.60 (135/20)</b>
<b>Semester III</b>					
EC-1	05	A+	9	45	
C-8	05	O	10	50	
C-9	05	A	8	40	
C-10/CP	05	A	8	40	
<b>Total</b>	<b>20</b>			<b>175</b>	<b>8.75 (175/20)</b>
<b>Semester IV</b>					
EC-2/EC-2	05	B	6	30	
EC-3/EC-3	05	A+	9	45	
C11/EP	05	B	6	30	
Project	05	A+	9	45	
<b>Total</b>	<b>20</b>			<b>150</b>	<b>7.50 (150/20)</b>
<b>CGPA</b>					<b>7.50 (150/20)</b>
<b>Grand Total</b>	<b>80</b>			<b>595</b>	<b>7.44 (595/80)</b>

Table B-3: Sample calculation for CGPA for P.G. Vocational M.Sc./M.A./M.Com Programme

Semester I	Semester II	Semester III	Semester IV
Credit:20; SGPA:6.60	Credit:20; SGPA: 6.60	Credit:20; SGPA: 8.75	Credit:20; SGPA: 7.50

Thus CGPA =  $(20 \times 6.60 + 20 \times 6.60 + 20 \times 8.75 + 20 \times 7.50) / 80 = 7.36$

Session 2022 Onwards

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*Amal*  
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*Rupis*  
*26/03/22*  
*Anil Kumar*  
*26/3/22*  
*Shweta Negi*  
*26/03/22*  
*Ash*  
*26/3/22*  
*Anhan*  
*26.3.22*  
*Banur Pranjay*  
*22/03/22*  
*Kaushik*  
*26.3.22*

DISTRIBUTION OF MARKS FOR EXAMINATIONS AND FORMAT OF QUESTION PAPERS

**Distribution of Marks for Mid Semester Evaluation:**

**Table No. 15:** Distribution of marks of Theory Examinations of Mid Semester

Topic	Code	Full Marks	Pass Marks	Time	Group-A (Very short answer type Compulsory Questions) No. of Questions x Marks = F.M.	Group-B (Descriptive Questions) No. of Questions x Marks = F.M.	Total No. of Questions to Set	
							Group A	Group B
Mid Sem*	T30*	30 (20 +5 +5)	17	1 Hr	5 x1 =5	3 (out of 5) x5 =15	05	5

\*There shall be 20 marks theory examination for mid sem, 05 marks for attendance/ regular interactions & 05 marks for seminar/ assignment/ term paper given by faculty concerned in classrooms.

**Distribution of Marks for End Semester Theory Examinations:**

**Table No. 16:** Marks distribution of Theory Examinations of End Semester

Topic	Code	Full Marks	Pass Marks	Time	Group-A <sup>#</sup> (Very short answer type Compulsory Questions) No. of Questions x Marks = F.M.	Group-B (Descriptive Questions) No. of Questions x Marks = F.M.	Total No. of Questions to Set	
							Group A <sup>#</sup>	Group B
End Sem	T50	50	--	3 Hrs	2 x5 =10	2 (out of 3) x20 =40	2	3
	T70	70	28	3 Hrs	Q.No.1 (5x1) + 1x5 =10	4 (out of 6) x15 =60	2	6

# Question No.1 in Group-A carries very short answer type questions of 1 Mark

**Note :** There may be subdivisions in each question asked in Theory Examinations.

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Session 2022 Onwards

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FORMAT OF QUESTION PAPER FOR MID SEM EXAMINATION

20 MARKS



**Ranchi University, Ranchi**

Mid Sem No. \_\_\_\_\_

Exam Year \_\_\_\_\_

Subject/ Code \_\_\_\_\_

F.M. =20

Time=1Hr.

**General Instructions:**

lekU; funsZ" k %

- i. **Group A** carries very short answer type compulsory questions.  
([kaM \*A\* esa vR;ar y?kq mÜkj; vfuok;Z iz"u gSaA)
- ii. **Answer 3 out of 5** subjective/ descriptive questions given in **Group B**.  
([kaM \*B\* ds ik;p esa ls fdUgha rhu fo'k;fu'B@ o.kZukRed iz"uksa ds mÜkj nsaA)
- iii. Answer in your own words as far as practicable.  
(;Fkklahko vius "kCnksa essa mÜkj nsaA)
- iv. Answer all sub parts of a question at one place.  
(,d iz"u ds lHkh Hkkxksa ds mÜkj ,d lkFk fy[ksaA)
- v. Numbers in right indicate full marks of the question.  
(iw.kkZad nk;ha vksj fy[ks x;s gSaA)

**Group A**

1. ....
2. ....
3. ....
4. ....
5. ....

[5x1=5]

**Group B**

6. ....
7. ....
8. ....
9. ....
10. ....

[5]  
[5]  
[5]  
[5]  
[5]

**Note:** There may be subdivisions in each question asked in Theory Examination.

Session 2022 Onwards

*Ladly Raw*  
*26/3/2022*

*Amal*  
*26/3/22*

*Rudra*  
*26/3/22*  
*Anil Kumar*  
*26/3/22*

*Shweta Neg*  
*26/03/22*

*Abhinav*  
*26/3/22*

*Sumit Gujjar*  
*26/3/22*

FORMAT OF QUESTION PAPER FOR END SEM EXAMINATION

70 MARKS



**Ranchi University, Ranchi**

End Sem No.

Exam Year

**Subject/ Code**

**F.M. =70**

**P.M.=28**

**Time=3Hrs.**

**General Instructions:**

- i. **Group A** carries very short answer type **compulsory** questions.
- ii. **Answer 4 out of 6** subjective/ descriptive questions given in **Group B**.  
([kaM \*B\* ds N% esa ls fdUgha pkj fo'k;fu'B@ o.kZukRed iz"uksa ds mÜkj nsaA)
- iii. Answer in your own words as far as practicable.  
(;FkklaHko vius "kCnksa essa mÜkj nsaA)
- iv. Answer all sub parts of a question at one place.  
(,d iz"u ds IHkh Hkkxksa ds mÜkj ,d lkFk fy[ksaA)
- v. Numbers in right indicate full marks of the question.  
(iw.kkZad nk;ha vksj fy[ks x;s gSaA)

**Group A**

1. [5x1=5]
  - i. ....
  - ii. ....
  - iii. ....
  - iv. ....
  - v. ....
2. .... [5]

**Group B**

3. .... [15]
4. .... [15]
5. .... [15]
6. .... [15]
7. .... [15]
8. .... [15]

**Note:** There may be subdivisions in each question asked in Theory Examination.

Session 2022 Onwards

*Leahy Deme*  
*26/3/22*

*Prakash*  
*26/3/22*

*Rajni*  
*26/3/22*  
*Anil Kumar*  
*26/3/22*

*Shubh Neg*  
*26/03/22*

*Abh*  
*Sharan Singh*  
*26.3.22*

*Samuel Gungam Singh*  
*26/3/22*