

2M4A25239

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Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

**Fourth Semester Integrated M.Sc Geology Degree Examination, April 2025**

**GLO4IB04 – OPTICAL AND DESCRIPTIVE MINERALOGY**

(2022 Admission onwards)

Time: 2 hours

Max. Marks: 60

*(Draw neat sketches, wherever necessary)*

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**PART – A**

Answer *all* questions.

Each question carries **Two** mark.

**Ceiling -20 Marks**

1. Write about nature of light.
2. Distinguish between ordinary light and polarized light.
3. Give the equation for Snell's law and describe the terms in it.
4. How total internal reflection occur?
5. What is 2V angle in biaxial indicatrix?
6. Comment on the uses of corundum mineral.
7. What do you mean by Optic axis?
8. Define the extinction of uniaxial minerals.
9. Explain isotropic and anisotropic minerals.
10. Describe the structure of calcite mineral.
11. Comment on the mode of occurrence of talc.
12. Discuss the physical properties of topaz mineral.

**PART – B**

Answer *all* questions.

Each question carries **Five** marks.

**Ceiling -30 Marks**

13. Write a note on structure, varieties and optical properties of *Quartz* mineral.
14. Explain different mechanism of formation of polarized light.
15. How quartz wedge is used to find out the order of interference colour?
16. Discuss the theoretical details of biaxial Indicatrices with the help of diagrams.
17. Briefly explain the structure, chemistry and properties of different polymorphs of aluminium silicates mineral.
18. Describe different types of extinctions seen in optical microscope.
19. How interference figure is formed in optical microscope? Discuss various types of interference figure formed.

**PART - C**

Answer any *One* question.

Each question carries **Ten** marks.

20. Give an account of the structure, classification, composition and properties of pyroxene minerals.
21. Discuss the structure, physical and optical properties of Mica group of Minerals. Give their chemical composition and mode of occurrence.

**1 x 10 = 10 Marks**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester Integrated M.Sc Geology Degree Examination, April 2025

GLO4A13-NATURAL RESOURCE MANAGEMENT

(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

*(Draw neat sketches, wherever necessary)*

**PART – A**

Answer *all* questions.

Each question carries **Two** mark.

**Ceiling -25 Marks**

1. Define inexhaustible and exhaustible natural resources.
2. What is silvicultural and pastoral utilization
3. What are factors influencing the degradation deterioration of soil.
4. Distinguish lentic and lotic ecosystem
5. What do you mean by EcologicalFootprint?
6. How are V-shaped river beds formed?
7. What is mature river? Give its characteristics.
8. What are shoreline lakes and meteorite lakes?
9. Define Oases.
10. How does the mixing of seawater and freshwater contribute to the productivity of estuaries? Add a note onecotone.
11. Write about Ramsar Convention.
12. What are the main objectives of conducting an EIA?
13. Define the following: (a). Zone of aeration (b). Zone of saturation, and (c). Capillary fringe.
14. What is thorn scrub?
15. What is meant by mangrove forests?

**PART – B**

Answer *all* questions.

Each question carries **Five** marks.

**Ceiling -35 Marks**

16. Identify and explain the major threats to natural resources.
17. Briefly explain the key stages involved in the process of EIA and why are they important in decision-making processes?
18. Give an account on Types of biodiversity.
19. What are the main causes of soil degradation and how do they impact soil health?
20. Describe water cycle with neat diagram.
21. Write about different types of rivers.
22. Briefly explain the types of wetlands and its management strategies.
23. Write an explanatory note on Management of liquid wastes.

**PART - C**

Answer any *two* questions.

Each question carries **Ten** marks.

24. What are the key initiatives at both the national and international levels aimed at natural resource management and conservation?
25. Explain sustainable utilization? Give an account on ecological, economic and socio cultural sustainability.
26. Give a detailed account on Forest types in India.
27. Why are biodiversity hotspots significant? What are the challenges posed by threats to biodiversity and how can they be effectively managed?

**2 x 10 = 20 Marks**

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

**Fourth Semester Integrated M.Sc Geology Degree Examination, April 2024**

**GLO4A14 - INTELLECTUAL PROPERTY RIGHTS**

(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

*(Draw neat sketches, wherever necessary)*

**PART – A**

Answer *all* questions.

Each question carries **Two** mark.

**Ceiling -25 Marks**

1. Define the essentially derived plant varieties?
2. What is divisional application of patent?
3. Write about Paris convention, 1883?
4. What are the patent assignments?
5. Brief the regulations of The Copyright Act, 1957 in India?
6. What are the different kinds of inventions protected by a patent?
7. What are the functions of trademark?
8. Give any one case study related to geographical indications?
9. How long the protection of Industrial designs lasts?
10. What are the inventions relating to microorganisms are patentable in India?
11. What is meant by well-known marks?
12. Write the four statutory categories of inventions which can be granted patents related to microorganisms? How long the grant of patents for microbiological inventions lasts?
13. What are the benefits of GI registration?
14. What are the main requirements for the registration of industrial design?
15. Brief the points to keep in mind during the designing or selection of a trademark?

**PART – B**

Answer *all* questions.

Each question carries **Five** marks.

**Ceiling -35 Marks**

16. Briefly explain the historical development of different acts related to IPR?
17. Enumerate the general procedure for registering a design?
18. Why is patent search done? What are the various on-line databases available that provide access to patent documents while conducting patent search?
19. What is meant by domain name and how it is registered as trademark? Give a short note on Trademark Act, 1999?
20. What are the Benefits of IPR in industrial designs and brief the classification of designs in classes with four examples?
21. Discuss in detail the application procedure of a patent?
22. What do you mean by performer's right? What are the exclusive rights of a performer under the Copyright Act? How is it different from copyright?
23. What are the different types of trademarks?

**PART - C**

Answer any *two* questions.

Each question carries **Ten** marks.

24. Define IPR? Elaborate different categories of IPR with examples?
25. Describe copyright, the rights covered by copyright and the need of copyright protection, and how related rights are different from copyright?
26. Explain geographical indication with examples? Discuss content of application and the procedure for registration of geographical indications?
27. Explain plant variety protection based on Plant breeder's Right? What are the criteria and methods of plant variety protection? How long does different plant varieties patent last?

**2 x 10 = 20 Marks**

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