

1M10A25600

(Pages : 2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

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

GLO10IB22–ADVANCED PALAEOONTOLOGY

(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

(Draw neat sketches, wherever necessary)

PART – A

Answer any ten questions.

Each question carries Two mark.

1. What is adaptation in paleontology?
2. Differentiate mega fossil and micro fossil?
3. Why is the development of endothermy important for mammals?
4. What type of trace fossil can reveal information about an animal's diet?
5. What are the two main parts of protoplasm in foraminifera?
6. What is the significance of Intertropican flora?
7. What caused the mass extinction at the end of the Cretaceous period?
8. What type of microfossils are commonly used for interpreting past marine environment?
9. Why are trace fossils important for understanding ancient ecosystems?
10. What are the uses and significance of diatoms?
11. How to separate micro reproductive unit from Rock association.
12. List out the uses of Foraminifera.

10 x 2 = 20 Marks

PART – B

Answer any *five* questions.
Each question carries Eight marks.

13. How does functional morphology help understand adaptations in extinct species? Provide examples from dinosaurs and marine reptiles.
14. What key morphological characteristics should be described when documenting a specimen?
15. Explain the morphology of dinoflagellate?
16. How to separate pollen and spores from sediments using Schultz's solution and hydrofluoric acid?
17. Compare the Biological, Morphological, Phylogenetic, and Ecological Species Concepts, discussing their benefits and drawbacks in classifying species.
18. How do foraminiferal isotopic studies help in understanding paleoecology?
19. Explain the Gondwana flora of India, its key features, important plants, and its significance.

5x8=40 Marks

PART - C

Answer any *two* questions.
Each question carries Ten marks.

20. Explain the origin of vertebrates and how early chordates contributed to the development of vertebrates.
21. Compare and contrast Lamarck's and Darwin's theories of evolution, focusing on their implications for human evolution.
22. Briefly explain the morphology and life cycle of spores and pollen.
23. Discuss the morphology and geological distribution of Ostracods.

2 x 10 = 20 Marks

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

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

GLO10IB23–GEOCHEMISTRY AND ISOTOPE GEOLOGY

(2020 Admission onwards)

Time: 2 ½ hours

Max. Marks: 80

(Draw neat sketches, wherever necessary)

PART – A

Answer any *ten* questions.

Each question carries Two mark.

1. Differentiate amor objects and Apollo objects?
2. What is Clausius- Clapeyron equation?
3. Write the types of international standards used to measure C, N and S isotopes?
4. What is Stellarnucleosynthesis?
5. What are the advantages of $^{40}\text{Ar}/^{39}\text{Ar}$ method?
6. Brief the decay equation and half life of radioactive nuclides?
7. What is concordia method?
8. Define metastability?
9. How CHUR value used in Sm-Nd dating?
10. Write the process of isotopic fractionation and how it is used in paleoclimate studies?
11. what is dissociation content?
12. What is stable isotope geothermometry?

PART – B

Answer any *five* questions.

Each question carries Eight marks.

13. Explain the role of kinetics in geochemical reactions?
14. What is the fission track dating method, and how it is used to determine the age of rocks?
15. Briefly explain about different weathering reactions?
16. Explain the types of radioactive decay mechanisms?
17. Write a short note on Hertzsprung -Russel diagram with neat sketch?
18. Briefly explain the C cycle in biological processes?
19. What are meteorites and add a note on its classification based on composition?

5 x 8 = 40 Marks

PART - C

Answer any *two* questions.

Each question carries Ten marks.

20. Briefly explain the origin of the earth and solar system in different aspects?
21. Discuss Rb-Sr isochron plot and how it is used to determine the magma source?
22. Explain the phase coexistence and distribution of chemical species on thermodynamic aspects and its applications in geology and geochemistry?
23. What are cosmogenic isotopes, and how are they utilized in dating geological materials?

2 x 10 = 20 Marks

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Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

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

GLO10IE04(E04a)– GEOTECHNICAL ENGINEERING

(2020 Admission onwards)

Time: 2 hours

Max. Marks: 60

(Draw neat sketches, wherever necessary)

PART – A

Answer any Nine questions.

Each question carries Two marks.

1. What is disturbed and undisturbed samples?
2. How effective pressure differ from total pressure?
3. Write about net ultimate bearing capacity of soil.
4. Discuss textural classification of soil.
5. What is degree of saturation?
6. Comment on uniformly graded soil showing its graph.
7. What is maximum dry density of a soil?
8. How rotary core sampler works?
9. Give some factors that affects the bearing capacity of soil.
10. Write about labelling of samples.
11. How permeability affect the soil strength?

9 x 2 = 18 Marks

PART – B

**Answer any four questions.
Each question carries Eight marks.**

12. Discuss the non-intrusive methods for site investigation.
13. Describe how standard penetration test is done.
14. What is pressure meter test? How this test is done in the field?
15. Explain Spontaneous- potential logging and resistivity logging methods.
16. Describe the different Atterberg limits and how they are found out.
17. Write about different types of foundations used to construct building structures.

4 x8= 32 Marks

PART - C

**Answer any one question.
Each question carries Ten marks.**

18. Discuss in detail about the retaining structures used to construct in different scenario.
19. Describe the concept and all aspects of Slope Stability Analysis in geotechnical field.

1 x 10 = 10 Marks
