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Name:

Reg. No:

**NINTH SEMESTER M.Sc. INTEGRATED GEOLOGY DEGREE EXAMINATION,
NOVEMBER 2025**

(CBCSS)

(Regular/Supplementary/Improvement)

CC20GLO9IE02 - QUATERNARY GEOLOGY AND PALEOCLIMATE

(Geology)

(2020 Admission onwards)

Time : Three Hours

Maximum : 80 Marks

Credit : 3

(Draw neat sketches, wherever necessary)

PART – A

Answer any **ten** question. Each question carries 2 marks.

1. What is the Quaternary Period?
2. Why are speleothems important Quaternary archives?
3. What is the role of international stratigraphic commissions in Quaternary studies?
4. What is magnetostratigraphy based on?
5. Name two types of luminescence dating techniques.
6. What is a palynozone?
7. What is a Bt horizon in soil profiles?
8. What is the Acheulian industry?
9. Define paleoclimatology.
10. Give one example of a natural archive used in paleoclimate studies.
11. Write a short note on the role of methane (CH₄) in global warming.
12. What is meant by climate refugees?

(10 × 2 = 20 Marks)

PART – B

Answer any **five** question. Each question carries 8 marks.

13. Discuss the evidence from marine isotope stages (MIS) for Quaternary climate variability.
14. Explain the principle of luminescence dating and the concept of “zeroing.”
15. Write a note on Quaternary coastal deposits and sea-level changes in India.
16. Explain the significance of tephra layers as event markers.
17. Briefly describe the regional Chalcolithic cultures of India.

18. Write a short note on the use of lake and ocean sediments in paleoclimate studies.
19. Explain how climate change affects food security and water resources?

(5 × 8 = 40 Marks)

PART – C

Answer any *two* question. Each question carries 10 marks.

20. Explain the principles of oxygen isotope stratigraphy and its importance in reconstructing Quaternary climate change.
21. Discuss the problems of contamination, reservoir effects, and calibration in radiocarbon dating, and their implications for age.
22. Compare and contrast aeolian, fluvial, and glacial records as archives of Quaternary climate change.
23. Briefly describe anthropogenic activity and its effect on global climate.

(2 × 10 = 20 Marks)
