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S.No. 3658

P 22 AGCC 1 A

(For candidates admitted from 2022–2023 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2022.

Applied Geology – Core Choice Course

STRATIGRAPHY

Time : Three hours

Maximum : 75 marks

PART A — (20 marks)

Answer ALL questions.

I. Choose the correct answer out of the given options.

(5 × 1 = 5)

1. Impact of vegetation was absent during Achaean Eon. This statement is against

- (a) Law of original horizontality
- (b) Walther's Law
- (c) The law of Uniformitarianism
- (d) The law of superposition

2. Index fossils are important for

- (a) Chronostratigraphy
- (b) Magnetostratigraphy
- (c) Lithostratigraphy
- (d) Biostratigraphy

3. Continental early Triassic deposits of India is devoid of

- (a) Coal
- (b) Red beds
- (c) Sandstones
- (d) Dykes and sills

4. Which of the following successions is NOT arranged according to stratigraphic order?

- (a) Subathu–chinji–Muree–Dhok Pathan
- (b) Tatchir–Barakar–Motur–Bijori
- (c) Kopili–Barail–Bhuban–Bokabil
- (d) Gulcheru–Vempalli–PuliVendla–Tadipatri

5. K-T boundary is related to

- (a) Formation of Main Frontal Thrust
- (b) Extinction of dinosaurs
- (c) Evolution of terrestrial vertebrate fossils
- (d) None of the above

II. Fill in the blanks : (5 × 1 = 5)

6. The unconformities are _____
7. In chronostratigraphy, the time encompassed by a biozone is termed as a _____
8. Kaimur Group is part of the _____ Supergroup and overlain by _____ Group and underlain _____ by Group.
9. Siwalik Group of rocks were deposited in a _____ basin.
10. The Permo-Triassic boundary is associated with the largest _____ known in Earth history.

III. Answer ALL questions. (5 × 2 = 10)

11. What is stratotypes? In which classification is it mandatory?
12. What are biozones? How many biozones are there?
13. Short notes on Bhandar group.
14. Write any two plant fossils found in lower gondwana successions.
15. What is the lower boundary for Quaternary period? Why has it been changed?

PART B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

16. (a) What is unconformity? How many types of unconformities are there?

Or

- (b) List the main time units and their equivalent time-rock units.

17. (a) What is key bed? Why is it important for stratigraphic correlation? Illustrate your answer with a sketch.

Or

- (b) What is Abundance biozone? Explain why abundance biozone that may be used for biostratigraphic correlation do not provide reliable means of time stratigraphic correlation.

18. (a) Elucidate the stratigraphic succession of the Cuddapah Supergroup with brief lithologic description.

Or

- (b) List the stratigraphic sequence of the Delhi Supergroup (in Group and Formation level) of northeastern Rajasthan with brief lithologic description.

19. (a) Elucidate the Triassic stratigraphic succession of Spiti with brief lithologic description.

Or

- (b) How many subgroups and formations are there under the Siwalik Group? Elucidate the Siwalik Group with brief lithologic description. Where is the type locality of the Siwalik Group?
20. (a) What is the boundary problem in between Tertiary and Quaternary sediments in the Indian Subcontinent?

Or

- (b) Why is the Cretaceous-Tertiary boundary significant? Why was it problematic to demarcate the K-T boundary line in the Indian subcontinent?

PART C — ($3 \times 10 = 30$)

Answer any THREE from the following.

21. Explain about the laws of stratigraphy.
22. What are the lithostratigraphic units and biostratigraphic units? Discuss each unit in brief.
23. Write down the Cambrian stratigraphy of salt range.

24. What are Deccan Traps? Discuss the stratigraphy of the Deccan Traps.
25. Write about the palaeoclimate that prevailed during the deposition of Permian and Triassic sediments in the Gondwana basins of peninsular India.
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