

Ex/SC/GEOL/PG/CORE/TH/13/2023

M. Sc. APPLIED GEOLOGY EXAMINATION, 2023

(2nd Year, 2nd Semester)

STRATIGRAPHY

(PRECAMBRIAN & PHANEROZOIC)

PAPER – CORE/TH/13

Time : Two hours

Full Marks : 40

(Use a separate Answer script for each Group.)

Group – A (20 Marks)

(Precambrian Stratigraphy)

1. Answer *any two* questions : 8
- a) What is a crustal province? Write the different components of the Archean crustal province. Why are komatiites dominantly restricted to the precambrian? 2+3+3

Or

- b) Discuss briefly the East African Orogeny. What is the significance of the Grenvillian orogeny with special reference to India? 5+3
2. Write short notes on (*any three*) : 3×4=12
- a) Giant dyke swarms
- b) Ophiolite
- c) Archean tectonics
- d) Archean greenstone belt
- e) Proterozoic rifts

[Turn over

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Group – B (20 Marks)
(Precambrian Stratigraphy)

1. Write short notes on : (*any three*) 3×3
 - a) Palaeozoic marine transgression in Peninsular India.
 - b) Evidences of non-marine deposits in India during the Jurassic-Cretaceous transition.
 - c) Western coast line of Indian craton that remained stable in its initial phase formed during Bathonian age.
 - d) Tectonic control over Cambrian-Silurian sequence building-up in Kashmir.
2. Give the tectonic classification of the magmatic rocks emplaced during the Phanerozoic Eon in the Indian subcontinent and discuss the significance of magmatism in the perspective of migration of India from Southern hemisphere. 5

OR

Establish the evidences for continent-continent collision recorded in the facies associations of Mesozoic rocks in Extra-Peninsular region. 5

3. Answer *any six* : 1×6
 - i) Name the marine interactions found in Gondwana sequence.

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- ii) What is the type section of Triassic in Extra-Peninsular India?
- iii) What marks the boundary between Megalodon and Kioto Limestone? Name the oldest Palaeozoic orogeny.
- iv) Why is the Siwalik System considered as molasse?
- v) Which part of the Siwalik Group might have formed in a relatively humid climate?
- vi) What are the major tectonic units of the Himalayan belt?
- vii) Name the unit from Gondwana that contains primary carbonate and also name its probable equivalent from the western part of Indian craton.
- viii) Mention two important characteristics of Triassic period.