

SEMESTER V
MAJOR COURSE – MJ 9
STRATIGRAPHY

Full Marks: 75	Time: 3 Hours
SET – III	Theory Paper

Instructions:

- Group A is compulsory.
- Question No. 1 contains five objective/MCQ questions of 1 mark each.
- Question No. 2 and Question No. 3 are single questions of 5 marks each.
- In Group B, answer any **four** questions out of six. Each question carries 15 marks.
- All questions are based on the prescribed syllabus of Major Course MJ 9 – Stratigraphy.

GROUP – A

Q.1. Choose the correct answer. (5 × 1 = 5)

1. Chemostratigraphy correlates strata using variations in:

A) Chemical composition and geochemical signatures B) Fossil shape only C) Grain size only D) Bedding thickness only

2. Chronostratigraphy classifies rock bodies primarily according to:

A) Geological age/time B) Mineral hardness C) Colour D) Grain roundness

3. The Permian–Triassic boundary is important because it is associated with:

A) A major mass extinction B) Formation of granite only C) Beginning of weathering D) Origin of continents

4. The Siwalik Group is mainly of:

A) Cenozoic age B) Archean age C) Cambrian age D) Jurassic age

5. Rajmahal volcanic rocks are principally associated with:

A) Basaltic volcanism B) Granitic plutonism C) Limestone deposition D) Glacial till

Q.2. (5 Marks) What is magnetostratigraphy? Explain its principle and applications in stratigraphic correlation.

Q.3. (5 Marks) Describe the important stratigraphic boundaries in India with reference to the Precambrian–Cambrian, Permian–Triassic and Cretaceous–Tertiary boundaries.

GROUP – B

Answer any four questions. (4 × 15 = 60)

Q.4. (15 Marks) Explain the scope and objectives of stratigraphy. Discuss lithostratigraphy, biostratigraphy, chronostratigraphy and the role of geological time in stratigraphic correlation.

Q.5. (15 Marks) Discuss seismic, chemical and magnetic methods of stratigraphic analysis. Explain how these methods help in establishing precise stratigraphic sequences.

Q.6. (15 Marks) Describe the physiographic and tectonic framework of India and discuss the Indian Shield. Explain Walther's Law and the concept of paleogeographic reconstruction.

Q.7. (15 Marks) Give a detailed account of the Precambrian stratigraphy of India, including Singhbhum, Dharwar, Vindhyan and Cuddapah successions.

Q.8. (15 Marks) Discuss the Gondwana basins and their structure, stratigraphy and hydrocarbon/coal potential. Add notes on Mesozoic successions of Spiti, Kutch and Cauvery basin.

Q.9. (15 Marks) Describe the volcanic provinces of India with special reference to the Deccan and Rajmahal provinces. Discuss the major stratigraphic boundaries and their geological significance.