Geology
Paper-I

Time Allowed: Three Hours
Maximum Marks: 300

Note: 1. The figures in the margin indicate full marks for the questions.

2. Candidate should answer questions No. 1 and 5 which are compulsory and any three of the remaining questions, selecting at least one from each section.

SECTION – A

1. Write short notes on any three of the following in about 200 words each:
   \[20 \times 3 = 60\]
   (a) Plate Tectonic theory and its significance.
   (b) Evidences of seismology and its applications.
   (c) Internal Structure of the Earth.
   (d) Concept of Geosynclines.

2. (a) Factors controlling weathering and types of weathering.
   \[30\]
   (b) Geological significance of drainage patterns.
   \[30\]

3. (a) What is Darcy’s law? Describe its validity with verification.
   \[30\]
   (b) Write about the classification folds.
   \[30\]

4. Describe in brief any three of the following:
   \[20 \times 3 = 60\]
   (a) Electromagnetic spectrum.
   (b) Resolution types in Remote Sensing.
   (c) Orbital parameters of Cartosat-1.
   (d) Elements of satellite image interpretation.
SECTION – B

5. Write short notes on any three of the following in about 200 words each:  
   \[20 \times 3 = 60\]
   (a) Morphology and evolutionary trends of brachiopods.
   (b) Discuss the palaeobotanical basis of the classification of Gondwana rocks.
   (c) Give an account of stratigraphy of Manipur.
   (d) Saline water intrusion.

6. (a) Describe the lithostratigraphic units and their use in stratigraphy.  
   \[30\]
   (b) Write about the K/T Boundary and its significance in stratigraphy.  
   \[30\]

7. Write in brief about the following:  
   \[30 \times 2 = 60\]
   (a) Earthquake zones of India.
   (b) Importance of foraminifera studies in Petroleum exploration.

8. Write in brief about the following:  
   \[30 \times 2 = 60\]
   (a) Importance of rain water harvesting techniques.
   (b) Stratigraphic succession of Cuddapah Basin.