

**GEOLOGY**

**Paper—I**

Time Allowed : Three Hours

Maximum Marks : 200

**INSTRUCTIONS**

Candidates should attempt Question Nos. 1 and 5 which are compulsory, and any THREE of the remaining questions, selecting at least ONE question from each Section.

All questions carry equal marks.

Marks allotted to parts of a question are indicated against each.

Answers must be written in ENGLISH only.

Suitable sketches may be drawn, wherever required.

**Important Note**

All parts/sub-parts of a question being attempted are to be answered contiguously on the answer-book. That is, where a question is being attempted, all its constituent parts/sub-parts must be answered before moving on to the next question.

Pages left blank, if any, in the answer-book(s) must be clearly struck out. Answers that follow pages left blank may not be given credit.

**Section—A**

1. Write critical notes, within 150 words each, on the following : 10×4=40
  - (a) Biotic weathering
  - (b) Atmospheric windows

- (c) Intensity and magnitude of seismicity in India 15
- (d) Angular unconformities
2. (a) Describe the methods used for determining the age of the earth. 20
- (b) Describe the causes of earthquakes. 10
- (c) Explain trellis and dendritic types of drainage patterns. 10
3. (a) Give an account of the application of remote sensing in geology. 20
- (b) Describe the data products of Indian remote sensing satellites. 10
- (c) Explain the application of Geographic Information System to geological studies. 10
4. (a) How does the plate tectonics theory support the continental drift theory? 10
- (b) Describe different types of plate margins. 12
- (c) Give an account of the classification of folds. 18

### Section—B

5. Write notes, within 150 words each, on the following : 10×4=40
- (a) Unconfined aquifer
- (b) Alkali-aggregate reaction
- (c) Age of the Deccan Traps
- (d) Kinds of microfossils

6. (a) Briefly discuss the main elements of Siwalik vertebrate fauna and give their stratigraphic distribution. 10
- (b) Discuss the climatic change-record during Pleistocene from Indian geologic formations. 10
- (c) Highlight the salient features of the evolutionary trends in Trilobites. 20
7. Describe the following (in about 150 words each) : 40
- (a) Muth Quartzites
- (b) Lameta Beds
- (c) Bundelkhand Gneissic Complex
- (d) Niniyur Formation
8. (a) Discuss the sliding and groundwater problems in dams. 20
- (b) Give an account of the engineering properties of rocks. 20

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