

Time Allowed : Three hours

Maximum Marks : 300

The figures in the margin indicate full marks for the questions

Candidates should answer Question Nos. **1** and **5** which are compulsory and *any three* of the remaining questions, selecting at least **one** from each Section

SECTION—A

1. Write on any *three* of the following in about 200 words each : 20×3=60
 - (a) Interior of the earth
 - (b) Age determination of rocks by radioactive methods
 - (c) Role of structure and lithology on landform evolution
 - (d) Geometric classification of fold

2. (a) Write briefly on island arc, trenches and mid-oceanic ridges.
(b) Discuss isostasy and its role in the evolution of earth crust. 30+30=60

3. Write about the following : 30×2=60
 - (a) Scope of geomorphology in environmental studies
 - (b) Indian remote sensing satellites and their orbital and resolution properties

4. (a) Discuss the stress-strain relationships of elastic, plastic as viscous materials.
(b) Write briefly on behaviour of minerals during deformation. 30+30=60

SECTION—B

5. Write on any *three* of the following in about 200 words each : 20×3=60
- (a) Mode of preservation of fossils
 - (b) Cretaceous-Tertiary boundary problem in India
 - (c) Geological investigations for dams
 - (d) Application of microfossils
6. Discuss the evolutionary trend of Equidae. Use neat sketches wherever necessary. 60
7. Discuss the following : 30×2=60
- (a) Tectonic framework of India
 - (b) Inter-relationships of lithostratigraphic and chronostratigraphic units
8. Write about the following : 30×2=60
- (a) Landslides, their causes and prevention
 - (b) Exploration of groundwater

GEOLOGY

20

PAPER—II

Time Allowed : Three hours

Maximum Marks : 300

The figures in the margin indicate full marks for the questions

Candidates should answer Question Nos. **1** and **5** which are compulsory and *any three* of the remaining, selecting at least **one** from each Section

SECTION—A

1. Write on any *three* of the following in about 200 words each : 20×3=60
 - (a) Crystal symmetry of all the classes of isometric system
 - (b) Fractional crystallization of magma
 - (c) Regional metamorphism of argillaceous rocks
 - (d) Diagenesis and lithification of clastic rocks

2. (a) Write in detail on the working principle of petrological microscope with suitable diagram.
- (b) What is paleochroism? Explain how it occur. Name any four paleochroic minerals. 30+30=60

3. Write explanatory notes on the following : 30+30=60
 - (a) Deccan volcanic province
 - (b) Migmatiation

4. Discuss the primary sedimentary structures with neat sketches. Write on the genesis and significance of these structures. 30+30=60

SECTION—B

5. Write notes on any *three* of the following in about 200 words each : $20 \times 3 = 60$
- (a) Metallogenic epochs and provinces
 - (b) Application of trace elements in igneous rock studies
 - (c) Methods of geophysical prospecting
 - (d) Cosmic abundance of elements
6. Discuss the uranium deposits of India in terms of their geological and geographical distributions, genesis and economic importance. 60
7. Answer/Write notes on the following : $30 \times 2 = 60$
- (a) Problems associated with flood. Do you think that flood can be suitably controlled by embankments? Explain.
 - (b) Environmental impacts due to urbanisation
8. Answer/Write notes on the following : $30 \times 2 = 60$
- (a) National mineral policy
 - (b) Classify the meteorites on the basis of their composition. What is the importance of meteorite study?
