

60

GEOLOGY

PAPER—I

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

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GEOLOGY

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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?
