

**CSM – 34/17**

**Geology**

**Paper – I**

*Time : 3 hours*

*Full Marks : 300*

*The figures in the right-hand margin indicate marks.*

*Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory any **three** of the remaining questions selecting at least **one** from each Section.*

**SECTION – A**

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1. Answer any **three** of the following in about **200** words each : 20×3 = 60
  - (a) What are the causes and effects of Earthquakes ? Add a note on seismicity of India.
  - (b) Define Weathering and Mass Wasting. Explain geomorphic cycles and their interpretation.
  - (c) What are Orbiting Satellites and Sensor systems ? Add a note on Indian Remote Sensing Satellites.

(d) Explain stress and strain ellipsoid and stress-strain relationships of elastic, plastic and viscous materials.

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2. (a) Give an account on the origin and interior of the earth.  $15+15 = 30$

(b) What are Island Arcs and Mid-Oceanic ridges? Explain continental drift and sea floor spreading.  $15+15 = 30$

3. (a) What are the applications of geomorphology in mineral prospecting? Outline the geomorphology of the Indian subcontinent.

$15+15 = 30$

(b) What are the applications of Remote Sensing in Geology? Add a note on the Geographic Information System and its applications.

$15+15 = 30$

4. (a) Give an account on the classification of faults. Add a note on the mechanics of faults.

$20+10 = 30$

(b) What is Petrofabrics? Describe the primary sedimentary structures and their applications.

$10+20 = 30$

## SECTION – B

5. Answer any **three** of the following in about **200** words each :  $20 \times 3 = 60$

(a) What are Mega fossils and Micro fossils ?

Outline the modes of preservation of fossils.

(b) Describe the principles of Stratigraphic Correlation. Give the Standard Stratigraphic Time Scale.

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(c) What is Hydrologic Cycle ? Give an account on the classification of Aquifers.

(d) Describe the Engineering properties of rocks. What are building stones and road materials ?

6. (a) Describe the morphology, geological history and evolutionary trends in Brachiopoda. 30

(b) Write notes on the following :  $15 + 15 = 30$

(i) Gondwana flora and its importance

(ii) Evolutionary trends in Hominidae

7. (a) Write notes on the following : 15+15 = 30

(i) Triassic rocks of spiti

(ii) Geology of Odisha

(b) Write notes on the following : 15+15 = 30

(i) Cretaceous-Tertiary boundary problem

(ii) Physiographic and Tectonic divisions of  
India

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8. (a) Give an account on the exploration and  
quality of ground water. Add a note on the  
Ground water provinces of India.

20+10 = 30

(b) Explain the geological investigations  
involved in the construction of dams. Add a  
note on the causes and prevention of  
Landslides.

20+10 = 30

