

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

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.
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.

(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

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

