

<b>CSM – 34/19</b>
<b>Geology</b>
<b>Paper – I</b>

*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 and 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) Enlist the various methods of estimating the age of the earth. Describe the most reliable method and discuss the age of the earth.
  - (b) Enumerate the application of geomorphology in environmental studies. Briefly describe the coastal geomorphology of Indian subcontinent.

- (c) Differentiate different types of aerial photographs. Mention their limitations.
- (d) Describe the various types of foliation. Establish their relationship with major structures.
2. (a) What are the causes and products of volcanic eruption ? Add a note on volcanic belts of India. 20+10 = 30
- (b) Describe the theory of continental drift with suitable evidences. 30
3. (a) Describe the morphological features in relation to the structure and lithology. 15+15 = 30
- (b) Outline the Indian remote sensing satellites. 30
4. (a) Describe the principal types of unconformities and their recognition in the field. 20+10 = 30
- (b) State and explain superposed deformation. 10+20 = 30

## SECTION – B

5. Answer any **three** of the following in about **200** words each : **20×3 = 60**
- (a) Describe the application of microfossils in petroleum exploration.
  - (b) Give an account of various litho-stratigraphic sequences of Odisha.
  - (c) Discuss the hydrologic properties of water bearing formation.
  - (d) Describe the causes and prevention of landslides. Outline the earthquake-resistant structures.
6. (a) Describe the morphology, geological history and evolutionary trends in cephalopoda. **30**
- (b) Write notes on the following : **15+15 = 30**
- (i) Siwalik fauna
  - (ii) Lower gondwana flora and their significance

7. (a) Give an account of distribution and classification of precambrian rocks of Odisha.  $15+15 = 30$
- (b) Outline the economic importance of phanerozoic rocks of India.  $15+15 = 30$
8. (a) Discuss the problems and management of ground water. Add a note on rain water harvesting.  $20+10 = 30$
- (b) (i) Describe the geological investigations for construction of bridges.
- (ii) Explain the geological investigations involved in construction of tunnels.  $15+15 = 30$

