

C.S.E. GEOLOGY (MAIN) - 2004
PAPER - I

Time Allowed: Three Hours

Maximum Marks: 300

Candidates should attempt Questions I and 5 which are compulsory and any three of the remaining questions selecting at least one question from each Section.

SECTION A

- I. Write in about 200 words on any three of the following: 20 x 3 = 60
 - (a) 'Orogeny' and 'Epeirogeny.'
 - (b) Two major landforms.
 - (c) Indian Remote Sensing Satellites.
 - (d) Stress-strain relationship in elastic materials.
2. Discuss in detail the concept of 'Plate Tectonics'. Is it synonymous with 'Continental Drift'? 60
3. Write about the following: 30 x 2 = 60
 - (a) The basic concepts of Geomorphology.
 - (b) Applications of Remote Sensing in Geology.
4. Discuss the classification and mechanics of folds. Make neat sketches to illustrate your answer. 50+ 10=60

SECTION B

5. Answer any three of the following, each in about 200 words: 20 x 3 = 60
 - (a) Preservation of fossils.
 - (b) Lithostratigraphic classification of Sedimentary rocks.
 - (c) Tectonic framework of India.
 - (d) Rocks as construction material.
6. Discuss the evolutionary trends in Hominidae. 60
7. Discuss the following: 30 x 2 = 60
 - (a) Economic importance of Phanerozoic rocks of India.
 - (b) Paleogeography of the Indian Subcontinent.
8. Write about the following: 30 x 2 = 60
 - (a) Management of groundwater.
 - (b) Geological investigations of a Dam site.

PAPER – II

Time Allowed: Three Hours

Maximum Marks: 300

Candidates should attempt Questions 1 and 5 which are compulsory and any three of the remaining questions selecting at least one question from each Section.

SECTION A

1. In about 200 words, explain any three of the following:
 - (a) Symmetry of Isometric System with forms and examples. 20
 - (b) Zoning in plagioclase feldspar and its genesis. 20
 - (c) Phase rule and metamorphism. 20
 - (d) Diagenesis as a sedimentary process. 20
2. Give the salient features of structural classification of silicates. Describe any one mineral group belonging to the Nesosilicate class, giving the chemical composition, physical properties and occurrence. 60
3. Write explanatory notes on the following:

- (a) Ultramafic rocks in Ophiolite sequence, their petrography and petrogenesis. 30
- (b) Facies of contact metamorphism and their characteristics. 30
- 4. Define sedimentary facies. Describe continental glacial and glacio-fluvial facies giving their salient characteristics with an Indian example. 60

SECTION B

- 5. In about 200 words each, write notes on any three of the following :
 - (a) Paragenesis and Zoning in ore deposits. 20
 - (b) Classification of resources and reserves of ore. 20
 - (c) Composition of meteorites, their classification and significance in geological studies. 20
 - (d) Environmental impact of opencast mining. 20
- 6. Write notes on the following in brief:
 - (a) Lindgren's classification of Hydrothermal deposits and their salient characteristics. 30
 - (b) Lower Gondwana coalfields of India; their geological setting and coal resources. 30
- 7. Discuss the methods of geophysical prospecting defining their principle and parameters. Describe anyone method and its applications. - 60
- 8. Write notes on the following, in brief:
 - (a) Definition of trace elements. Goldschmidt's rules for the distribution of trace elements and later modifications of these rules. 30
 - (b) Landslides as natural hazards, their causes, impacts and measures of their mitigation. 30