

GEOLOGY

(Paper II)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

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 any one 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