

GEOLOGY

(Paper I)

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. Write critical notes on the following in about 150 words each:

12×5=60

 - (a) Modified seismic zonation map of India
 - (b) Davis cycle of erosion
 - (c) Major tectonic landforms of the world
 - (d) Aerial photograph versus topographic map
 - (e) Effect of time on rock deformation
2. Describe the following in about 250 words each:

20×3=60

 - (a) Circum-Pacific belt
 - (b) Characteristics of Tsunami waves
 - (c) Spreading ocean ridges
3. Discuss the following in about 250 words each:

20×3=60

 - (a) Geomorphic features along east coast of India
 - (b) Components of the electromagnetic spectrum
 - (c) Lunar remote sensing using Chandrayaan-1
4. Write notes on the following in about 250 words each:

20×3=60

 - (a) Orientation of stress ellipsoid and the types of faults
 - (b) Classification of folds based on dip isogon
 - (c) Intragranular movements in plastic deformation of rocks

SECTION 'B'

5. Write critical notes, in about 150 words each, on the following:

12×5=60

 - (a) Distribution of trilobites in different geological periods
 - (b) Diamondiferous strata of India

- (c) Volcanism in India
- (d) Quality classification of irrigation water
- (e) Criteria for selecting suitable building stone

6. Explain the following in about 250 words each:

20×3=60

- (a) Uses of fossils
- (b) Classification of foraminifera based on structure and composition of the shell
- (c) Life in pre-Cambrian time

7. Answer the following in about 250 words each:

20×3=60

- (a) Give an account of the relationship between different kinds of stratigraphic units.
- (b) What are the economic deposits associated with the Tertiary rocks of India? List them and briefly describe each of them.
- (c) Enumerate the petrological characteristics of the Deccan Traps.

8. Answer the following in about 250 words each:

20×3=60

- (a) How are aquifers classified? Briefly describe each type.
- (b) Explain the influence of folding in the foundation rocks of a dam site and in tunnels.
- (c) What are the preventive measures adopted for landslides? Explain them briefly.