

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. Answer any three of the following each within 200 words:
 - (a) Why are modern island arcs restricted to specific parts of the globe? How would you identify island arc products in ancient rocks records? 20
 - (b) Which earth processes control the drainage geomorphology? 20
 - (c) Explain the basic principles of Global Positioning System. 20
 - (d) Explain the mechanism of rock failure leading to faulting. 20
2. It is said: While new ocean floor is born, old ocean floor dies. Explain. 60
3. Describe: 30×2=60
 - (a) Development of coastal landforms.
 - (b) Remote sensing techniques for identification of rock types.
4. Write brief notes on: 15×4=60
 - (a) Reversal of dips
 - (b) Nappe
 - (c) Inlier and Outlier
 - (d) Paraconformity

SECTION 'B'

5. Answer any three of the following, each within 200 words: 20×3=60
 - (a) Differentiate between body fossil and trace fossil.
 - (b) Fossil fauna and flora can indicate paleoclimate. Justify in the Indian context.
 - (c) Where do the names 'Umaria' and 'Umia' arise in the context of Indian stratigraphy?
 - (d) Describe the role played by the hydrogeological studies in the welfare of human civilization
6. Write brief notes on: 15×4=60
 - (a) Benthic Foraminifera

- (b) Brachial skeleton of fossil brachiopods
- (c) Exoskeleton of trilobites
- (d) Neanderthal man

7. Answer the following:

15×4=60

- (a) On which age level (in million years) is the Precambrian-Cambrian boundary placed? What are Cambrian fauna? Are they found in the Indian subcontinent and if so, where?
- (b) Enumerate characteristic features of Jurassic ammonoids of Kutch basin.
- (c) Trace the evolutionary history of Eastern Ghats Mobile Belt.
- (d) What was the paleogeographic disposition of continents during the Permo-Carboniferous era?

8. Comment on:

30×2=60

- (a) Problem of salt-water intrusion in coastal areas and remedial measures.
- (b) Geological considerations in dam construction