

**2006**  
**GEOLOGY**  
**Paper 1**

*Time : 3 Hours ]*

*[ Maximum Marks : 300*

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**INSTRUCTIONS**

*Candidates should attempt **all** the questions in Parts A, B & C. However, they have to choose only **three** questions in Part D. The number of marks carried by each question is indicated at the end of the question.*

*Answers must be written in English. Care should be taken not to exceed, as far as possible, the suggested limit of words.*

*This paper has four parts :*

- |          |           |
|----------|-----------|
| <b>A</b> | 20 marks  |
| <b>B</b> | 100 marks |
| <b>C</b> | 90 marks  |
| <b>D</b> | 90 marks  |

*Marks allotted to each question are indicated in each part.*

**SEAL**

**PART A***4×5=20*

*Answer each question in about 50 words. Each question carries 5 marks.*

1. Write short notes on the following :
  - (a) Geothermal energy
  - (b) Rock deformation
  - (c) Geomorphic processes
  - (d) Fossilisation

**PART B***10×10=100*

*Answer each question in about 100 words. Each question carries 10 marks.*

2. Describe the different volcanic products.
3. Explain the various types of Geosynclines.
4. How are the mid-oceanic ridges formed ?
5. What are the basic concepts in geomorphology ?
6. Describe the drainage systems of India.
7. Discuss the nature and genesis of planar structures.
8. What is the fossil assemblage in rocks of Cambrian age ?
9. Mention the major divisions in the standard stratigraphic scale.
10. What is 'Boundary Problem' in stratigraphy ? Explain with an appropriate example.
11. Explain the major stages in the organic evolution (evolution of life).

(Turn over)

**2006**  
**GEOLOGY**  
**Paper 2**

*Time : 3 Hours ]*

*[ Maximum Marks : 300*

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**INSTRUCTIONS**

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*Answers must be written in English. Care should be taken not to exceed, as far as possible, the suggested limit of words.*

*This paper has four parts :*

- |          |           |
|----------|-----------|
| <b>A</b> | 20 marks  |
| <b>B</b> | 100 marks |
| <b>C</b> | 90 marks  |
| <b>D</b> | 90 marks  |

*Marks allotted to each question are indicated in each part.*



**PART A**

4×5=20

*Answer each question in about 50 words. Each question carries 5 marks.*

1. Write short notes on the following :
  - (a) Twinning in crystals
  - (b) Isomorphism
  - (c) Magma
  - (d) Tenor of ores

**PART B**

10×10=100

*Answer each question in about 100 words. Each question carries 10 marks.*

2. Explain the major differences between crystalline and non-crystalline substances.
3. Draw the stereographic projection of Normal Class of Isometric System. Explain how the symmetry characters have been represented therein.
4. Under what conditions, do minerals when examined under a microscope, show interference colours ?
5. Explain the uses of optical accessories.
6. What are the different types of bonds noticed in minerals ?
7. Name the members of the feldspar group of minerals and give their chemical composition.
8. Mention the major types of magmas and their genesis.
9. Explain the changes that take place in sediments when they undergo lithification and diagenesis.
10. Define ore mineral and gangue, with suitable examples.
11. Which are the exploration techniques used for locating ore deposits ? Explain in brief.

[Turn over

**PART C***6×15=90*

*Answer each question in about 150 words. Each question carries 15 marks.*

12. Classify the crystals based on their symmetry characters.
13. Explain the usefulness of X-Rays in crystallography.
14. Discuss the pyroxene group of minerals.
15. How are the igneous rocks classified ?
16. Discuss the nature and origin of charnockites.
17. How are the aerial photographs useful in geological investigations ?

**PART D**

3×30=90

Answer any **three** of the following questions, each in about 300 words.  
Each question carries 30 marks.

18. Discuss the salient features of the International System of Notation.
19. What is the basis for classification of silicates ? Give suitable examples with neat sketches, for each group of silicates.
20. Elaborate on the stratigraphic, petrogenetic and tectonic significance of Deccan basalts.
21. Describe the gold deposits of India. Make a special reference to occurrences in Karnataka.
22. Emphasise the importance of ground water geology. Add a note on the occurrence of ground water in hard rock terrain.