

2011
GEOLOGY (Optional) (Paper – II)

501033

Standard : Degree

Total Marks : 200

Nature : Conventional (Essay) type

Duration : Three Hours

N.B. : 1) *Answers must be written in English.*2) *Question No. 1 is compulsory. Of the remaining questions, attempt any Four selecting one question from each section.*3) *Figures to the RIGHT indicate marks of the respective question.*4) *Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.*5) *Credit will be given for orderly, concise and effective writing.*6) *Candidates should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.*

Marks

1. Answer **any four** of the following :

- | | |
|---|----|
| (a) Clastic and non-clastic sedimentary rocks | 10 |
| (b) Petroleum traps and it's types. | 10 |
| (c) Structural controls of ore localization. | 10 |
| (d) Importance of geology in sustainable development. | 10 |
| (e) Agents and kinds of metamorphism. | 10 |

SECTION – A

2. Answer the following sub-questions :

- | | |
|---|----|
| (a) Describe the systems of crystallographic notations. | 15 |
| (b) Elucidate the important optical properties of common minerals of metamorphic rocks. | 10 |
| (c) Describe the various intrusive and extrusive forms of Igneous rocks. | 15 |

3. Answer the following sub-questions :

- | | |
|--|----|
| (a) Describe the various physical properties of a mineral. | 15 |
| (b) Describe optical properties of pyroxene group of mineral. | 10 |
| (c) Describe the different types of textures of Igneous rocks. Add a note on its significance. | 15 |

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SECTION – B

4. Answer the following sub-questions :

- (a) Describe the formation of mineral deposits by mechanical concentration process. 15
- (b) Illustrate the concept of strategic, critical and essential minerals giving suitable examples. 15
- (c) Describe the coal deposits of India in brief. Add a note on coal in Maharashtra. 10

5. Answer the following sub-questions :

- (a) Describe the process of oxidation and supergene enrichment for formation of mineral deposits. 15
- (b) Write an account of important metallic ore minerals of Maharashtra. 15
- (c) Describe the different varieties of coal and banded constituents of coal. 10

SECTION – C

6. Answer the following sub-questions :

- (a) Describe the Geochemical and Geobotanical methods of prospecting. 15
- (b) What do you mean by sampling ? Illustrate the various types of sampling. 10
- (c) Describe the caving methods for underground mining. 15

7. Answer the following sub-questions :

- (a) Write an account of different electrical methods of prospecting. 15
- (b) Describe in brief different types of drilling methods. 10
- (c) Describe the room and pillaring method of underground mining of coal. 15

SECTION – D

8. Answer the following sub-questions :

- (a) Describe the geochemical classification and distribution of elements. 15
- (b) Explain the concept of ecosystem. Add a note on ecologic pyramids. 10
- (c) Write an account of various Natural Hazards. 15

9. Answer the following sub-questions :

- (a) Illustrate the periodic table of elements. 15
- (b) Describe the impact of human activities on water resources. 10
- (c) Describe the different alternative sources of energy. Add a note on conservation of energy. 15