

2009

GEOLOGY - II (Optional)

100092

Standard : Degree

Total Marks : 200

Nature : Conventional

Duration : 3 Hours

Note :

- (i) Answers must be written in English.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** selecting one question from **each section**.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) 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.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Candidate 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.
- (vii) For each slab of 10 and 15 marks, the examinee is expected to write answers in 125 and 200 words respectively.

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

- (a) Metamorphic grades and zones. 10
- (b) Petroliferous basins of India. 10
- (c) Stratigraphic controls of ore localisations. 10
- (d) Role of geologist in disaster management. 10
- (e) Origin of sediments. 10

SECTION-A

2. Answer the following sub-questions :

- (a) Describe the important crystal systems. 15
- (b) Describe the petrological microscope and its accessories. 10
- (c) Illustrate the crystallisation process of binary mag-ma for immiscible liquids. 15

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3. Answer the following sub-questions :

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|--|----|
| (a) Describe physical properties, chemical composition and occurrences of felspar group of minerals. | 15 |
| (b) Elucidate the important optical properties of common minerals of Igneous rocks. | 10 |
| (c) Give the tabular classification of Igneous rocks. | 15 |

SECTION-B

4. Answer the following sub-questions :

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|--|----|
| (a) Describe the formation of mineral deposits from magmatic processes. | 15 |
| (b) Describe the important economic mineral deposits from Maharashtra state. | 15 |
| (c) Giving the properties, describe the Atomic mineral deposits of India. | 10 |

5. Answer the following sub-questions :

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|--|----|
| (a) Describe the formation of hydrothermal mineral deposits. | 15 |
| (b) Elucidate the salient features of National Mineral Policy. | 15 |
| (c) Give the classification of coal. Add a note on its origin. | 10 |

SECTION-C

6. Answer the following sub-questions :

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| (a) Describe the various geophysical methods of prospecting. | 15 |
| (b) Describe the different methods of borehole logging. | 10 |
| (c) Illustrate the important open cast mining methods. | 15 |

7. Answer the following sub-questions :

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|---|----|
| (a) Describe the various geological methods of prospecting. | 15 |
| (b) Describe the various drilling methods. | 10 |
| (c) Write an account of ocean bottom mining methods. | 15 |

SECTION-D

8. Answer the following sub-questions :
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|---|----|
| (a) Explain the Geochemical cycle. | 15 |
| (b) Illustrate the problems of pollution and hazardous waste. | 10 |
| (c) Describe the various causative factors and mitigation measures of landslides. | 15 |
9. Answer the following sub-questions :
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|--|----|
| (a) Giving suitable examples, explain the Ionic substitution in Minerals. Add a note on atomic structure of element. | 15 |
| (b) Describe the effect of man's activities on Air. | 10 |
| (c) Describe the various causative factors and mitigation measures for floods. | 15 |

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