

2012

GEOLOGY (Optional)

100276

भूशास्त्र (वैकल्पिक)

Time : 3 hours

Maximum Marks : 200

Note :

- (i) Answer 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) Figure to the **RIGHT** indicates 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) 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 they will be penalised.

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

4x10=40

- (a) Discuss the criteria necessary for selection of suitable site for water reservoir.
- (b) Differentiate between volcanic dyke and hypabyssal dyke.
- (c) Give broad outline of methods employed in the exploration of economic minerals.
- (d) What solution would you suggest to mitigate the land slide so common along Kokan railway track.
- (e) Enlist the common ore minerals of copper with their chemical composition and distinguishing properties.

SECTION - A

2. Answer the following sub questions :

- (a) Discuss the distribution and genesis of different soil types of Maharashtra. 20
- (b) With the help of geomorphological features explain how major rivers of Maharashtra have undergone rejuvenation. Give suitable examples. 20

3. Answer the following sub questions :

- (a) Explain the significance of mid-oceanic ridges. 20
- (b) "GIS application is an important tool in groundwater prospecting". Discuss. 20

P.T.O.

SECTION - B

4. Answer the following sub questions :
- (a) Discuss the criteria that make a mineral to be classed as precious and semi-precious stone. 20
- (b) "Variation in textural characteristics of igneous rocks is the reflection of their cooling history". Discuss. 20
5. Answer the following sub questions :
- (a) Describe the diagnostic optical properties that help in identification of the following minerals : 20
- (i) Microcline (ii) Plagioclase (iii) Hypersthene
(iv) Calcite (v) Biotite
- (b) Write brief account of Deccan Traps with respect to geological and petrographical features. 20

SECTION - C

6. Answer the following sub questions :
- (a) Describe the quaternary formations of Maharashtra. 15
- (b) Explain Index fossils by giving suitable examples from Geological time scale. 15
- (c) Comment on National Mineral Policy. 10
7. Answer the following sub questions :
- (a) Give the stratigraphy of Maharashtra other than Deccan trap formation. 15
- (b) Describe in brief important fauna and flora of Gondwana Era. 15
- (c) Throw light upon the petroleum deposits of Maharashtra. 10

SECTION - D

8. Answer the following sub questions :
- (a) Define watershed. Citing one case history, describe the concept of watershed management and its benefits. 20
- (b) What adverse effects have taken place due to excessive sand mining and stone quarrying in Maharashtra State ? Discuss. 20
9. Answer the following sub questions :
- (a) Discuss the role of Environmental Geology in changing the scenario such as Droughts and Desertification. 20
- (b) Write an account of Aquifer systems in Deccan basaltic terrain of Maharashtra State. 20