

Total No. of Questions—12] [Total No. of Printed Pages—4+1 Design

Seat No.	
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[4162]-104

**S.E. (Civil Engg.) (First Semester) EXAMINATION, 2012**

**ENGINEERING GEOLOGY**

**(2008 PATTERN)**

**Time : Three Hours**

**Maximum Marks : 100**

**N.B. :—** (i) Attempt Q. Nos. 1 or 2, Q. Nos. 3 or 4, Q. Nos. 5 or 6 from Section I and Q. Nos. 7 or 8, Q. Nos. 9 or 10, Q. Nos. 11 or 12 from Section II.

(ii) Answers to the two sections should be written in separate answer-books.

(iii) Figures to the right indicate full marks.

(iv) Assume suitable data, if necessary.

(v) Neat diagrams must be drawn wherever necessary.

**SECTION I**

1. (a) Enumerate the different branches of geology and how these helps an engineer to solve the problems in the field. [6]
- (b) How are conglomerates and sandstones formed ? Explain the processes of transportation, rounding and reduction in the grain size. [10]

P.T.O.

*Or*

2. (a) How igneous rocks are classified on the basis of variation of textures ? Explain with suitable examples and diagrams. [10]
- (b) What are the common metamorphic structures and textures ? Explain with suitable examples. [6]
3. (a) Explain the regional cycle of river erosion with the help of neat diagrams. [8]
- (b) Define Historical Geology. Write about the commercial importance of Gondwana and Vindhyan rocks. [8]

*Or*

4. (a) What are the different physiographic divisions of India ? Explain various rock types and structural features occurring in the state of Maharashtra. [10]
- (b) What is rejuvenation of a river ? Give any *two* landforms resulted by this process. [6]
5. (a) Which structural feature is resulted due to time gap in the deposition ? Give a detailed account of it with neat diagrams. [8]
- (b) Explain various parts and types of folds with neat sketches. [10]

*Or*

6. (a) Write an essay on mechanism of faults. Add a note on various types of faults with suitable examples. [10]
- (b) Explain the following terms :
- (i) Inliers and Outliers. [5]
- (ii) Dip and Strike. [3]

## SECTION II

7. With the help of Fig. No. 1 (attached), answer the following questions :
- (a) Describe the geography of the area represented by the map. [4]
  - (b) How many series of beds are occurring in the area represented by the map ? State order of superposition of these series. [6]
  - (c) Mention DOWN THROW SIDE and AMOUNT OF DOWN THROW w.r.t. the Fault plane. [6]

*Or*

8. (a) Describe the importance of ANGLE HOLES in the Preliminary Geological Exploration with suitable examples. [6]
- (b) What is the engineering significance of inspection of returning drill water during drilling ? [6]
- (c) Write a note on 'Geographical Information System' (GIS). [4]
9. (a) What is Landslide ? What are the causes of landslide ? Describe preventive measures against landslide. [12]
- (b) Write a note on cone of depression and circle of influence. [4]

*Or*

10. (a) Describe any *two* geological conditions leading to the Artesian conditions. Draw neat sketches. [8]
- (b) What are the requirements of Good Building Stone ? [8]

11. (a) Describe the feasibility of dam construction in the tectonically disturbed area. What treatment will you suggest to avoid further consequences ? [8]
- (b) What problems may have to be faced while excavating tunnel through folded strata ? [6]
- (c) Write a note on Unlined Tunnel. [4]

*Or*

12. (a) Describe feasibility of tunneling through compact basalt and amygdaloidal basalt. [6]
- (b) Describe geological conditions unsuitable for the reservoir site. [6]
- (c) Write a note on the dam located on folded geological structure. [6]

