

Roll No.

24383

**B. Tech. (Civil) 6th Semester
Examination – May, 2015**

ENGINEERING GEOLOGY

Paper : CE-312-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : (i) Question No. 1 is *compulsory*. Attempt *one* question from each section.

(ii) All questions carry equal marks.

(iii) Assume missing data, if any, suitably.

1. Explain the following :

10 × 2 = 20

- (a) Artesian wells and springs
- (b) Erosion of the surface of the earth
- (c) Rock forming minerals
- (d) Magma and its constituents
- (e) Retaining walls

- (f) Mohr's scale of hardness
- (g) Importance of soil profile
- (h) Petrology and structural geology
- (i) Cone of depression
- (j) Influence of geological conditions on the location of bridges

SECTION – A

- 2. (a) Describe importance of engineering geology in the planning and execution of civil engineering projects. 10
- (b) Briefly describe with the help of a neat sketch internal structure of earth. 10
- 3. (a) Explain the geological work of ice and water. Explain in detail. 10
- (b) Explain the external and internal geological forces causing changes of the surface of the earth. 10

SECTION – B

- 4. (a) Define mineral and rocks. Explain the physical properties of important minerals. 10
- (b) What are the objectives and principles of stratigraphy ? Explain stratigraphical time scale with its sub division. 10

5. (a) Describe in detail the different types of folds and faults in detail. 10
- (b) Describe the following terms in brief : 10
- (i) Bedding plane and outcrops
- (ii) Dip and strike

SECTION – C

6. (a) What do you mean by geological investigations ? Explain the remote sensing techniques for geological and hydrological survey and investigation. 10
- (b) Define hydrology. Describe the different techniques of artificial ground water recharge. 10
7. (a) What is aquifer ? Describe in detail different types of aquifers. 10
- (b) Describe the following : 10
- (i) Difference between perched water table and ground water table .
- (ii) Geological maps and interpretation of data.

SECTION – D

8. (a) Describe the suitability and stability of foundation sites and abutments. 10

- (b) Briefly explain the essential qualities for location of dams to ensure stability. Also describe the geological conditions and their influence on the selection and location of dams. 10
9. (a) Write down the internal and external causes of landslides. State the measures to control slides. 10
- (b) Write a short note on "Geology and environment of earth". 10
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