

3E1453

Roll No. : \_\_\_\_\_

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3E1453

B. Tech. (Sem. III) (Main & Back) Examination, January - 2013  
Civil Engg.  
3CE3 Engineering Geology

Time : 3 Hours]

[Total Marks : 80  
[Min. Passing Marks : 24

Attempt any five questions. Selecting **one** question from each unit.  
All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)

1. \_\_\_\_\_ NIL \_\_\_\_\_

2. \_\_\_\_\_ NIL \_\_\_\_\_

### UNIT - I

- 1 (a) Explain the work of erosion by wind in view of deflation, abrasion and attrition. 8
- (b) Describe various factors affecting weathering, products of weathering and engineering considerations of weathering. 8

OR

- 1 (a) Write short notes of the following :
- (i) Stalactites and stalagmites
  - (ii) River meandering
  - (iii) Drainage patterns
  - (iv) Deltas

2+2+2+2=8



- (b) Describe physical properties of the following minerals.
- (i) Orthoclase feldspar
  - (ii) Hypersthene
  - (iii) Hornblende
  - (iv) Biotite

2+2+2+2=8

## UNIT - II

- 2 (a) Describe tabular classification of igneous rocks in view of importance of feldspar. 8
- (b) Explain various structures of sedimentary rocks with neat diagrams. 8

OR

- 2 (a) Write notes of the following :
- (i) Tabular classification of sedimentary rocks.
  - (ii) Difference between breccia and conglomerate.
  - (iii) Pegmatites.
- 3+3+2=8
- (b) Write explanatory notes of the following :
- (i) Difference between cleavage, schistosity and foliation
  - (ii) Various structures of metamorphic rocks.
- 4+4=8

## UNIT - III

- 3 (a) Describe the classification of folds on the basis of position of the axial plane and plunge of the folds. 8
- (b) Write illustrated notes on :
- (i) Types of unconformities and their engineering considerations.
  - (ii) Geometrical classification of the faults.
  - (iii) Mural and columnar joints.

3+3+2=8

OR



- 3 (a) Describe effects of faulting on outcrops and topography using appropriate diagrams. 10
- (b) Explain seismic refraction method of geophysical investigations. 6

#### UNIT - IV

- 4 (a) Describe various geological considerations adopted for construction of tunnels. 10
- (b) Write short notes on :
- (i) Gravity dams
  - (ii) Dam disaster
  - (iii) Arch Dams
- 2+2+2=6

OR

- 4 (a) Describe geological conditions that influence the stability of road cut. [rtuonline.com](http://rtuonline.com) 6
- (b) Describe the following :
- (i) Rock bolting and grouting
  - (ii) Soil stabilizations
- 5+5=10

#### UNIT - V

- 5 (a) Describe the role of remote sensing in the site selection of engineering projects. 10
- (b) Differentiate between aerial photographs and satellite imageries. 6

OR



5 Write notes of the following :

- (i) Various stages for capturing of photographs.
- (ii) Indian remote sensing satellites.
- (iii) Role of remote sensing in identification water bodies.

5+5+6=16

