

**3E1453**

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

Total Printed Pages : 4

**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. NIL2. 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 6
- (b) Describe the following :
- (i) Rock bolting and grouting
  - (ii) Soil stablizations
- 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

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