

3E1453

Roll No. : _____

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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



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(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

[Contd...]



- 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. 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



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- 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

7/2/2013

