

## B.Tech 3rd Semester Exam., 2015

## ENGINEERING GEOLOGY

Time : 3 hours

Full Marks : 70

## Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question No. 1 is compulsory.

1. Choose the correct option (any seven) :  $2 \times 7 = 14$ 

- (a) The ozone layer is located in
  - (i) the troposphere
  - (ii) the stratosphere
  - (iii) the ionosphere
  - (iv) the exosphere
- (b) The base level of river erosion means
  - (i) the lowest level of a river valley in a given region
  - (ii) the lowest level upto which a stream can theoretically cut down its channel
  - (iii) the capacity of a river to erode its base
  - (iv) None of the above

- (c) Tectonic valleys are
  - (i) caused by river erosion
  - (ii) glacial deposition
  - (iii) subsidence of a central block along parallel faults or due to synclinal folding
  - (iv) None of the above
- (d) An interfacial angle is
  - (i) an external angle between a given face and the extension of the adjoining face
  - (ii) an internal angle between two adjoining faces
  - (iii) an angle between any twin faces on the same side of a crystal
  - (iv) None of the above
- (e) Plutonic rocks are always formed from the cooling of
  - (i) the lava under water
  - (ii) magma just below the surface of the earth
  - (iii) lava over the surface of the earth
  - (iv) magma at great depths below the surface of the earth

(f) Stress minerals are characterised with

- (i) flaky, platy and elongated shapes
- (ii) angular, regular and polyhedral outlines
- (iii) perfectly rounded and granular minerals

(iv) None of the above

(g) The capacity of a stone to withstand scratching or indenting action is defined as its

- (i) strength
- (ii) durability
- (iii) hardness

(iv) None of the above

(h) S-wave do not pass through

- (i) sedimentary rocks
- (ii) ore bodies
- (iii) liquids

(iv) solidified igneous masses

(i) Transported soils are those

- (i) which are brought from another place by man after digging and transporting them by artificial methods
- (ii) which are covered by vegetable and other materials brought by river during floods
- (iii) which are themselves brought by wind, water and ice from far-off places and are deposited at a place of accumulation

(iv) None of the above

(j) Richter scale measures

- (i) radio activity
- (ii) temperature
- (iii) pressure

(iv) intensity of earthquake

2. What are the factors affecting weathering of rocks? Discuss. Explain the term 'aeolian deposits'.

14

3. What do you understand by the terms 'folds and folding'? Explain. Sketch and define 'isoclinal fold'.

14

4. Define crystal, crystal symmetry, crystal form and crystallographic system.

14

5. What are the factors that contribute to the texture of sedimentary rocks? Explain briefly. 14
6. Sketch and describe the following briefly :  
5+5+4=14
- (a) Vertical faults
  - (b) Shear joints
  - (c) Dip
7. What are the hardware components of GIS? Distinguish between spatial and non-spatial data. 14
8. What are the causes of reservoir associated earthquakes? Describe. 14
9. Write notes on the following :  $3\frac{1}{2} \times 4 = 14$
- (a) Basalts
  - (b) Limestones
  - (c) Quartzites
  - (d) Storage capacity of reservoirs

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