

**CL301 - Engineering Geology**

P. Pages : 1

Time : Three Hours



**GUG/W/16/3673**

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
  2. Assume suitable data wherever necessary.
  3. Illustrate your answers wherever necessary with the help of neat sketches.

1. What is Earthquake ? Describe various causes of an earthquake. Add a note on seismic zones of India. **16**  
**OR**
2. a) Describe internal structure of the earth with a neat sketch. **6**  
b) What is a mineral ? Describe various physical properties of mineral. **10**
3. What is fold ? Describe different types of fold with neat sketches and add a note on its importance in civil engineering projects. **16**  
**OR**
4. a) A Limestone formation is found to be dipping in a hill side at 1:2 along N 15°E. Find the amount of its apparent dip along N30°W. Give procedure. State strike scale 1 unit = 1 cm. **8**  
b) A shale bed is dipping at 45°West in a slope of 15° in same direction with its outcrop 200m wide. Find the true and vertical thickness of shale bed. Write procedure. Scale 1cm = 40m. **8**
5. What is Rock cycle ? Discuss the formation of Igneous rocks and add a note on tabular classification of igneous rocks. **16**  
**OR**
6. What are metamorphic rocks ? Describe the various agents of metamorphism and various types of metamorphism. **16**
7. Describe various engineering properties of rocks which make them as good building stones for civil engineering constructions. **16**  
**OR**
8. Discuss different geological conditions which influence the durability and stability of a dam sites. **16**
9. Describe hydrological cycle with different components. Add a note on various zones of ground water. **16**  
**OR**
10. Differentiate between the following. **16**
  - a) Aquifer and Aquiclude.
  - b) Unconfined and confined Aquifer.
  - c) Artesian well and flowing well.
  - d) Contact spring and fault spring.

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