

**FACULTY OF ENGINEERING**  
**B.E. 2/4 (Civil) I Sem. (Suppl.) Examination, June 2012**  
**ENGINEERING GEOLOGY**

Time: 3 Hours]

[Max. Marks: 75

**Note : Answer all questions from Part A. Answer any five questions from Part B.**

**PART - A****(25 Marks)**

1. Match the pairs from the sedimentary structures given in Group A and characteristic features in Group B.

**Group A**

- 1) Stratification
- 2) Lamination
- 3) Graded Bedding
- 4) Cross-Bedding
- 5) Symmetrical ripple marks

**Group B**

- Regular stratification according to grain size from bottom to top
- Fissility
- Layer disposed in approximately parallel bands
- Sharp pointed crests and shallow broad trough
- Subsidiary stratification oblique to major bedding

2. What is pay line ?
3. Write the formulas of Wenner and schlumberge array.
4. Draw the graph Dolerite-Gabbro stress strain.
5. What are dip and strike of rock strata ? How are they expressed and specified ?
6. How the soils formation takes place ?
7. Explain the concept of electrical resistivity method.



8. What are the reasons for tsunamis and land slides ?
9. Write the geology of Nagarjuna sagar dam.
10. What are the uses of Geological maps and aerial photographs ?

PART – B

(50 Marks)

11. a) Write short notes on **any two** of the following :
  - 1) Sand stone
  - 2) Gneiss
  - 3) Marble
- b) Discuss the types and effects of rock weathering.
12. What are folds ? Give their main types and explain how they effect engineering projects.
13. a) What is aquifer ? Write types of aquifer.
- b) An undisturbed rock sample has an oven dry weight of 0.65 kg. After saturation with kerosene its weight is 0.732 kg. It is then imperssed in kerosene and found to displace 0.301 kg. What is the porosity of the sample ?
14. a) Write about aerial photo interpretation.
- b) What are the limitations and applications of Vertical Electrical Sounding (VES) and seismic refraction survey in determining depth to bed rock ?
15. a) Write about concrete aggregate.
- b) Explain the various geological factors to be considered in the selection of a site for a dam.
16. a) What do you understand by tunnel ? Give the geological factors governing the construction of tunnels.
- b) Illustrate the geology of an Indian tunnel that you know.
17. a) Identify the elements at risk, causes, typical effects and mitigation measures of earthquakes.
- b) Explain the engineering geological investigations for tunnels in rock.