B. Tech.
(SEM. IV) EXAMINATION, 2006-07
ENGINEERING GEOLOGY

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions.

1. Attempt any four parts of the following : 4x5=20
   a) Give an account of the structure of the earth.
   b) Define mineral. Describe the following physical properties of minerals with example : (i) Fracture (ii) cleavage. (iii) Hardness
   c) What is a building stone? Outline the properties and requirements of building stones.
   d) Describe the properties and requirements of quality road metals.
   e) Give a brief account of the importance of geology in civil engineering. Explain your answer by giving suitable example.
   f) Discuss which features indicate suitability of rocks as engineering materials.

2. Attempt any two parts of the following : 10x2=20
   a) Enumerate the important igneous rocks and give their distinguishing characters.
   b) Explain how are the sedimentary rocks formed? Describe the various structures present in the rocks.
   c) What is metamorphic rock? Discuss the various agents of metamorphism.

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3 Attempt any **four** parts of the following: \(4 \times 5 = 20\)
   a) How are folds classified? Describe different types of folds.
   b) What are joints? Classify and describe various types of joints.
   c) Describe the different types of unconformities and discuss the criteria for their recognition.
   d) Discuss the effect of faulting on various engineering projects.
   e) What are landslides? Describe with neat well labelled sketch different parts of a typical slide.
   f) Write notes on prevention, control and correction of land slides.

4 Attempt any **two** parts of the following: \(2 \times 10 = 20\)
   a) Explain, earthquake magnitude, earthquake intensity, earthquake focus and earthquake teneing.
   b) How are earthquakes classified? Explain their causes.
   c) Describe the geological action of ground water.

5 Attempt any **two** parts of the following: \(2 \times 10 = 20\)
   a) Discuss the influence of structural attitudes of sedimentary rocks on dam stability.
   b) Give an account of the geological investigation of tanner routes.
   c) Describe the electrical resistivity method of site investigation.