

B.E. / B. Arch. Part.....  
3rd Semester Final Examination, 2011  
Subject: Engineering Geology  
Branch: Civil Engineering

Code No: Geo 301  
Time: 3 hours

Full marks: 70

Use separate answer scripts for each half

**FIRST Half (Answer question 1 and any three form the rest)**

1. Write short notes on *any four* 4x2
  - a) Difference between gabbro and granite
  - b) Difference between sphericity and roundness in clastic sedimentary rocks
  - c) Difference between schist and gneiss
  - d) Discontinuous arm of Bowen's reaction series
  - e) Difference between crystallographic axes and symmetry axes
  
2. What is the basic building block for silicate minerals? With the help of the triangular plot show the chemical composition of minerals crystallizing in ionosilicate silicates. Give an account of the physical properties of the minerals belonging to olivine. 1+5+3
  
3. What is the difference between body angle and interfacial angle in a crystal? Enumerate the different types of symmetry elements. Explain all the possible symmetry elements in crystals. 2+2+5
  
4. What is a sedimentary rock? Give an idea (with sketches) of different despositional sedimentary structures. 2+7
  
5. Describe with neat sketches the different intrusive forms of igneous rocks. Explain eutectic crystallization pattern in binary system. 6+3
  
6. Enumerate the role of temperature in metamorphism. Describe different types of metamorphism based on the metamorphic agents/processes. 7+2

**Second Half (answer all questions)**

1. Plot the following attitudes of inclined planes: 30° towards 40° and 90° towards 90°. 5
2. Define dam. Discuss the necessary geological studies that have to be made before construction of a reservoir. 10
3. What is meant by tunnel? Discuss the reasons for studying the attitude of rock strata for proper designing of tunnel. 10
4. What is earthquake? Discuss earthquake waves. Give an idea of Richter scale of magnitude. 10