(f) Differentiate between the following:

(i) Normal and Reverse fault
(ii) Dip slip & Strike slip fault
(iii) Dis-conformity & Non conformity

3. Attempt any two parts of the following: (10x2=20)

(a) What are landslides? Discuss briefly their types, causes and preventive measures.

(b) Explain in detail, various properties that need thorough investigation for selection of stones for use in building construction. Give examples.

(c) Write short notes on the following:

(i) Aquifer and Aquicluide; (ii) Aquifuge and Aquitard
(iii) Spring and Artesian wells; (iv) Infiltration galleries.

4. Attempt any two parts of the following: (10x2=20)

(a) What are tunnels? Explain with neat sketches the tunnels located in:

(i) Anticline and Syncline
(ii) Foot wall and Hanging wall
(iii) Fissured and Fractured zone.

(b) What is dam? What are the uses of dams? Discuss the various aspects of geological investigation to be undertaken to select a site for dams.

(c) Discuss in detail:

(i) Problem of tunnelling through stratified formations
(ii) Silting of Reservoir.

5. Attempt any two parts of the following: (10x2=20)

(a) Write an essay on Indian rock systems and their characteristics.

(b) Name the various geophysical explorations. Describe the seismic refraction method for determination of depth of the bed rock. Explain its importance in civil engineering.

(c) Describe the various sources of ground water. Write the factors controlling the movement of ground water. Discuss ground water hazards in engineering projects.

B.Tech. (Main & COP)
Fourth Semester Theory Examination 2016-17
Engineering Geology

Time: 3 Hours **Total Marks: 100**

Note Attempt all questions. Draw diagrams if required.

1. Attempt any four parts of the following: (5x4=20)

(a) Discuss Bowen's reaction series. What is its significance in the process of crystallization of Magma?

(b) Describe the physical properties of the following minerals and their industrial uses:

(i) Hematite (ii) Galena
(iii) Talc (iv) Graphite.

(c) Give a critical account of classification of Igneous rocks. Which is the most suitable classification for a field engineer and why?

(d) What is metamorphic rock? Discuss the various agents of metamorphism.

(e) Explain the difference between giving examples:

(i) Cleavage & Fracture; (ii) Colour & Luster
(iii) Hardness & Tenacity; (iv) Density & Specific gravity

(f) Describe with neat sketches the primary structures of sedimentary rocks.

2. Attempt any four parts of the following: (5x4=20)

(a) Define a fold. How folds are classified? Explain with the help of neat sketches, important types of folds.

(b) How will you differentiate between faults and joints? Describe the characteristics of different types of joints with neat sketches.

(c) Give an account of Richter magnitude and Mercalli intensity scale of Earthquake. How will you compare between them?

(d) Discuss the following terms:

(i) Focus (ii) Epicenter (iii) Tsunamis (iv) Anti-centre.

(e) What is an earthquake? Discuss in brief their causes. What precautions are to be taken for the construction works in seismic areas?