

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.E. Sem-IV Examination June- 2010****Subject code: 140604****Subject Name: ENGINEERING GEOLOGY****Date: 22 /06 /2010****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is geology? Explain in brief main and allied branches of geology. **07**  
 (b) Define a mineral. Describe in detail hardness and cleavage as physical properties of minerals. **07**
- Q.2** (a) What is crystal? Explain crystallographic axes and elements of symmetry of a crystal. **07**  
 (b) Define the terms-weathering, erosion and denudation. Briefly describe the mechanical weathering. **07**
- OR**
- (b) What is an earthquake? Describe the types of earthquake waves and concepts of plate tectonics. **07**
- Q.3** (a) How are rocks classified? Write an account of texture of igneous rock. **07**  
 (b) Explain in detail the classification of sedimentary rocks? Describe the sandstone rock. **07**
- OR**
- Q.3** (a) What is metamorphism? Explain different types of metamorphisms with suitable examples. **07**  
 (b) Explain geological properties of building stones and describe granite and basalt as building stones. **07**
- Q.4** (a) Explain terminology of fault and fold with neat sketches. **07**  
 (b) Explain dip and strike, anticline and syncline with neat sketches. **07**
- OR**
- Q.4** (a) Give the classification of faults based on apparent movement. **07**  
 (b) Explain meaning of aquifer, aquifuse, aquiclude and aquitard. Describe the porosity and permeability of rocks. **07**
- Q.5** (a) What is remote sensing? Explain the application of remote sensing in engineering geology. **07**  
 (b) Explain geological problem of dam sites situated on rocks dipping upstream, dipping downstream and folded. **07**
- OR**
- Q.5** (a) Explain rock cycle and civil engineering importance of petrology. **04**  
 (b) What are land slides? How are they caused? **05**  
 (c) Describe color and streak properties of a mineral. **05**

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