

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

# 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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