

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- IVth SEMESTER-EXAMINATION – MAY/JUNE- 2012****Subject code: 140604****Date: 02/06/2012****Subject Name: Engineering Geology****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) Define geology and Engineering geology. Enlist the various branches of geology and add a note on its importance in Civil Engineering. **07**

(b) What are geological agents? Discuss the weathering pattern of rocks in Civil Engineering. **07**

Q.2 (a) Define mineral. What are the standard methods for identification of minerals? Add a note on Moh's scale of hardness. **07**

(b) What is a crystal? Describe the different parts of a crystal and their relationship. **07**

OR

(b) What is the seismology? Describe with the help of neat diagram the concept of Elastic rebound theory. Add note on types of earthquake waves and tsunami. **07**

Q.3 (a) Describe the tabular classification and important structures of sedimentary rocks. **07**

(b) Write short notes on (i) Sill and Dyke (ii) Marble as building stone (iii) Porphyritic texture of igneous rocks. **07**

OR

Q.3 (a) What is metamorphism? Explain different types of metamorphism with suitable Indian examples. **07**

(b) Write short notes on : (i) Rock cycle (ii) Geological properties of building stones. **07**

Q.4 (a) What are structural discontinuities? How joints are classified? Discuss the impact of joints in Civil Engineering projects and in ground water exploration. **07**

(b) Write short notes on : (i) Dip and Strike (ii) Symmetrical and Asymmetrical folds. **07**

OR

Q.4 (a) Give in brief the classification of faults. **07**

(b) Write short notes on : (i) Sources of Groundwater **07**
(ii) Preventive measures for landslides.

Q.5 (a) What is dam? List the types of dams? Enumerate the geological problems encountered during the construction of Sardar Sarovar Project (Narmada dam) **OR** Bhakra Nagal Project. **07**

(b) Write short notes on: (i) Tunnel through folded and faulted rocks (ii) Porosity and Permeability of rocks. **07**

OR

Q.5 (a) What is meant by remote sensing and geographical positioning system? **04**

(b) Cleavage and Fracture as physical properties of mineral. **04**

(c) River meandering and Sand dunes. **06**
