

GUJARAT TECHNOLOGICAL UNIVERSITY
P.D.D.C. Sem- I Regular / Remedial Examination January 2011

Subject code: X 10602

Subject Name: Engineering Geology

Date: 06 / 01 /2011

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) Explain outcrop, strike and dip, types of dip of rock bed and angular unconformity with neat diagrams. **07**
- (b) Explain difficulties arising and precautions to be taken, if fault is present at dam construction site. **07**
- Q.2** (a) List the physical properties of mineral for megascopic study. And explain hardness & form properties with suitable illustrations. **07**
- (b) How are igneous rocks formed? Classify them based on depth of origin and silica percentage. Describe properties of granite as building stone. **07**
- OR**
- (b) Describe zones of groundwater, porosity and permeability. Explain how porosity and permeability affect the specific yield of a rock body? **07**
- Q.3** (a) Define weathering and erosion. Explain physical weathering of rocks. **07**
- (b) Explain origin of sedimentary rocks and classify them. Describe properties of sandstone and limestone as building stone. **07**
- OR**
- Q.3** (a) What are the effects of metamorphism on pre-existing rocks? Explain with suitable examples. **07**
- (b) Narrate engineering consideration of glacial deposits. **04**
- (c) River meandering. **03**
- Q.4** (a) Explain, with the help of neat figures, types of faults based on relative movement of two blocks and discuss effects of faulting on rocks. **07**
- (b) Explain internal structure of the earth with neat diagram. **07**
- OR**
- Q.4** (a) State the various methods of geophysical exploration. Describe seismic method of geophysical exploration. **07**
- (b) Explain techniques for landslide prevention. **07**
- Q.5** (a) Explain parts of fold with neat figure and classify them on basis of position of the axial plane. **10**
- (b) Explain factors of metamorphism. **04**
- OR**
- Q.5** (a) Discuss the merit and demerit: when tunnel is passing thorough metamorphic rocks. **07**
- (b) Explain, how geological maps and sections are useful in civil engineering? **07**
