Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**PDDC - SEMESTER – I • EXAMINATION – WINTER 2012**

**Subject code: X 10602** **Date: 21/01/2013**

**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.**

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|---|---|---|---|
| **Q.1** | **(a)** | What are primary and secondary structures of rocks? Explain in the same context origin of bedding. | **07** |
| | **(b)** | Explain origin of igneous rocks? Classify them based on silica percentage and depth of origin. | **07** |
| **Q.2** | **(a)** | Discuss various geological criteria to be considered in selection of a dam site. | **07** |
| | **(b)** | List the agents of weathering and explain mechanical weathering of rocks in detail. | **07** |
| | | **OR** | |
| | **(b)** | Explain with examples what are aquifer, porosity, permeability and specific yield? | **07** |
| **Q.3** | **(a)** | How are sedimentary rocks formed? Explain with examples what are clastic and non-clastic rocks? | **07** |
| | **(b)** | Explain different parts of fault and discuss effects of faulting on rocks. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | What are the agents of metamorphism? Explain effects of metamorphism on pre-existing rocks? | **07** |
| | **(b)** | Engineering consideration of jointing in rocks. | **07** |
| **Q.4** | **(a)** | Explain parts of fold with neat figure and classify them on the basis of position of the axial plane. | **07** |
| | **(b)** | Explain internal structure of the earth with neat diagram. | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | State the various methods of geophysical exploration. Describe electrical resistivity method of geophysical exploration. | **07** |
| | **(b)** | What are different preventive measures for landslide? | **07** |
| **Q.5** | **(a)** | Discuss the merit and demerit: when tunnel is passing thorough inclined sedimentary rocks. | **07** |
| | **(b)** | Discuss the merit and demerit; when dam is proposed on sedimentary rocks. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | Describe applications of remote sensing techniques in civil engineering Practices. | **07** |
| | **(b)** | Elaborate the usefulness of geological maps and sections in civil engineering. | **07** |

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