Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

P.D.D.C. Sem- I Examination January 2010

Subject code: X10602 **Subject Name: Engineering Geology**

Date: 05 / 01 / 2010 **Time: 11.00 – 1.30 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)**	Describe the hardness and streak properties of minerals with suitable illustrations.	**07**
	(b)	What is weathering of rocks? Describe the physical weathering of rocks.	**07**
Q.2	**(a)**	Discuss various geological criteria to be considered in selection of a dam site.	**07**
	(b)	Describe important structures observed in sedimentary rocks.	**07**
		OR	
	(b)	What are igneous rocks? How are they formed?	**07**
Q.3		Write notes on the following topics:	
	(a)	Dip and strike of a bed	**05**
	(b)	Parts of a typical fold	**05**
	(c)	Normal faults	**04**
		OR	
Q.3		Write notes on the following topics:	
	(a)	Engineering consideration of jointing in rocks	**05**
	(b)	Factors of metamorphism	**05**
	(c)	River erosion through hydraulic action	**04**
Q.4	**(a)**	Discuss the suitability of a tunnel alignment in folded sequence of rocks.	**07**
	(b)	How land slides can be prevented?	**07**
		OR	
Q.4	**(a)**	Discuss the implication of faults on various civil engineering structures.	**07**
	(b)	Narrate the role of water in hill slope failures.	**07**
Q.5	**(a)**	Elaborate the usefulness of geological maps and sections.	**07**
	(b)	Discuss critically the statement, "Storage capacity of a reservoir depends on the porosity of rocks and the nature and inter-connections of pores."	**07**
		OR	
Q.5	**(a)**	Write brief notes on the following topics:	
		i. Applications of remote sensing techniques in civil engineering practices	**04**
		ii. Soft ground tunnelling	**03**
	(b)	What is geophysical investigation? Describe the electrical resistivity method for sub-surface geological investigation.	**07**

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