Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER IV EXAMINATION – SUMMER 2015

Subject Code: 140604 **Date: 05/06/2015**

Subject Name: Engineering Geology

Time: 10.30am-01.00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Draw neat sketch and quote suitable examples**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Write objectives of engineering geology. Explain the application of engineering geology in the field of civil engineering.	**07**
	(b)	Define earthquake. Describe P-waves, S-waves and Intensity of an earthquake.	**07**
Q.2	**(a)**	Write short notes on: (i) Frost action and thermal action - weathering on rock (ii) Oxidation and reduction type of weathering on rock	**07**
	(b)	Enlist geological natural agencies and geological work. Describe erosion work of river water with the features developed in rock mass.	**07**
		OR	
	(b)	Explain transportation work of wind. Add your note with engineering problem of desert advancement and remedial measures to control it.	**07**
Q.3	**(a)**	Write Short notes On: (i) Colour and luster property of mineral (ii) Mechanical structure in sedimentary rocks	**07**
	(b)	Define lava and magma. Describe the way of formation of igneous rocks. Write subgroups of igneous rocks based on its occurrence.	**07**
		OR	
Q.3	**(a)**	Write short notes on: (i) Hardness property and Moh's scale of hardness (ii) Metamorphic changes in rocks	**07**
	(b)	Explain elastic rebound theory of an earthquake. Add your note with various plate boundaries and their characteristics.	**07**
Q.4	**(a)**	Explain water bearing qualities of rock formation. Add note on confined and unconfined aquifers of rocks. Quote suitable rock examples.	**07**
	(b)	Explain fold and its causative factors. Write engineering importance of fold.	**07**
		OR	
Q.4	**(a)**	Differentiate normal and reverse fault. Write engineering importance of fault.	**07**
	(b)	Define mass movement. Write note on internal causative factors of mass movement and remedial measures to control it.	**07**
Q.5	**(a)**	What is Remote sensing and GIS techniques? Explain significance of remote sensing in geology and watershed projects.	**07**
	(b)	Describe geological investigation required for the site selection of the tunnel alignment. How water level in region influences the alignments of the tunnel?	**07**
		OR	
Q.5	**(a)**	Discuss suitability of geological conditions for dam construction. Write note on various forces act on dams influenced by geological factors.	**07**
	(b)	Define geological maps and topographical maps. Which are the components seen in geological maps? Write its engineering importance.	**07**

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