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Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER- III (NEW) EXAMINATION – SUMMER 2015

Subject Code: 2130606			Date:15/06/2015		
Time		me: GEOTECHNICS AND APPLIED GEOLOGY Opm-05.00pm s:	Total Marks: 70		
	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.			
Q.1	(a) (b)	Write note on origin of soil. Add your note with type of soil in Gujarat. Define weathering and erosion of rocks. Describe chemical weathering of rocks.		07 07	
Q.2 (a) (b)		Write short note on (i) Particle size distribution curve (ii) so What is seismic wave? Discuss all the types of seismic wave OR		07 07	
(b	(b)	Write note on ground water investigation methods.			
Q.3	(a)	What is soil consistency? How consistency limit in differ determined?	rent states of soil is	07	
	(b)	A soil sample has a diameter of 38 mm and a height of 76 is 1.15 N. Upon drying its weight reduced to 0.5 N. Specithe wet state what was the degree of saturation and the water sample. Determine the void ratio and the porosity. Also weight and the dry unit weight.	fic gravity is 2.7. In er content of the soil	07	
Q.3	(a)	OR Write short note on (*) Hardness property (*) Luster proper	ty of mineral	04	
Ų.S	(a) (b)	Write short note on (*) Hardness property (*) Luster property of mineral. (ii) What is texture in rock? Write briefly texture of sedimentary rocks. Solve (i) A soil has liquid limit 30% and plastic limit of 25 %. Determine its toughness index if its flow index is 15%. Also find the liquidity index and relative consistency of the soil if it has a natural water content of 25%. (ii) Find out the group index for the soil with % passing 75 micron sieve= 70, liquid limit=50% and plastic limit = 24%.		03 04	
Q.4	(a) (b)	(i) What is pore water in soil? Explain capillary water rise and its importance. (ii) Calculate the maximum capillary rise in a tube of 0.5 mm diameter. Take surface tension=0.076 N/m and unit weight of water 9810 N/m ³ . What is fold? Differentiate anticline - Syncline fold. Define all parts of the fold.		04 03 07	
Q.4	(a)	OR (i) Define permeability and seepage. Explain factors affecting	ng the permeability	04	
٠٠,٠	(a)	(ii) A stratified soil deposit consists of three layers of edifferent composition. The permeability of layers are 2 5 x 10 ⁻⁴ cm/sec. Calculate the average permeability of depovertical directions. (Assume thickness).	equal thickness and x 10 ⁻³ , 1 x 10 ⁻³ ,	03	
	(b)	How fault can be recognized in the field? Write note on faults for the site selection in civil engineering projects.	importance of fold,	07	
Q.5	(a) (b)	Write notes on (i) seepage pressure (ii) Classification of soil Write note on Geological consideration in hard and soft rock tunnels. OR		07 07	
Q.5	(a)	Define sphericity, flatness, elongation and angularity of so importance	il particles and their	07	
	(b)	Discuss application of Remote sensing and GIS technique fo	or civil engineering.	07	