Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III EXAMINATION – SUMMER 2016

Subject Code:131304 Date:04/06/2016

Subject Name:Basics of Structural Engineering

Time:10:30 AM to 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.**
4. **Draw neat sketch, wherever necessary.**

Q.1	**(a)**	Explain the term 'Curing'. What are the factors affecting for the selection of type of curing?	**07**
	(b)	Explain the term 'Workability'. Write the factors affecting on the workability. Explain any one of the field method to determine workability.	**07**
Q.2	**(a)**	Determine the slope at supports and deflection at the center of simply supported beam subjected to point load 'W' at the center of beam. The beam has a span of L. Use any method.	**07**
	(b)	Explain the following terms. Carry over moment, Distribution factor, Fixed end moment and Porosity of a soil.	**07**
		OR	
	(b)	Determine the slope and deflection at the tip of a cantilever beam of span L, subjected to UDL w kN/m throughout, along with point load W at the tip of beam.	**07**
Q.3	**(a)**	Explain Liquid Limit, Plastic Limit and Shrinkage Limit, with its uses.	**07**
	(b)	Explain the term 'Compaction of Soil'. Write the factors affecting on it.	**07**
		OR	
Q.3	**(a)**	How the soil bearing capacity will be determined? What are the factors affecting on it?	**07**
	(b)	Explain the alkali aggregate reaction. Explain the factors affecting on it.	**07**
Q.4	**(a)**	Explain middle quarter rule for circular section.	**07**
	(b)	Discuss the particle size distribution curve.	**07**
		OR	
Q.4	**(a)**	Determine the expression for the maximum and minimum stresses at the base of an unsymmetrical column which is subjected to eccentric load.	**07**
	(b)	What are the methods of sub-surface investigation? Discuss any one in detail.	**07**
Q.5	**(a)**	Explain the types of admixtures with its uses.	**07**
	(b)	Derive basic slope curvature relation for bending element.	**07**
		OR	
Q.5	**(a)**	Define the creep and shrinkage. Explain the factors affecting on it.	**07**
	(b)	Explain the types of cement with its uses.	**07**

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