Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (OLD) EXAMINATION – WINTER 2018

Subject Code:131304 **Date:10/12/2018**

Subject Name:Basics Of Structural Engineering

Time:10:30 AM TO 01:00 PM **Total Marks: 70**

Instructions:

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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)**	Determine the slope and deflection at the mid span of simply supported beam subjected to point load ’20 kN’ at the centre of beam. The beam has a span of 4.5 m. Use any method.	**07**
	(b)	Determine the slope at supports and deflection at the tip of cantilever beam of span 3 m, subjected to UDL 10 kN/m throughout, using double integration method.	**07**
Q.2	**(a)**	Explain the factors affecting for the selection of type of curing. Explain any one curing method.	**07**
	(b)	Explain middle third rule for rectangular section.	**07**
		OR	
	(b)	Explain the alkali aggregate reaction. Explain the factors affecting on it.	**07**
Q.3	**(a)**	What is workability of concrete? Explain Compacting Factor Test.	**07**
	(b)	Determine the expression for the maximum and minimum stresses at the base of an unsymmetrical column which is subjected to eccentric load.	**07**
		OR	
Q.3	**(a)**	Explain the term “Soundness of cement”. How this property has to be determined?	**07**
	(b)	Elaborate the types of admixtures with its uses.	**07**
Q.4	**(a)**	Elaborate the term ‘Compaction of Soil’. Write the factors affecting on it.	**07**
	(b)	Establish basic slope curvature relation for bending element.	**07**
		OR	
Q.4	**(a)**	What are the methods of sub-surface investigation? Discuss any one in detail.	**07**
	(b)	Elaborate the term Fineness Modulus. State its importance also.	**07**
Q.5	**(a)**	Explain the consistency limits.	**07**
	(b)	Explain the shear failure of soil.	**07**
		OR	
Q.5	**(a)**	How the shear parameters ‘c’ and ‘ø’ are to be determined? Explain any one method.	**07**
	(b)	Explain the permeability of concrete.	**07**

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