Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III EXAMINATION – WINTER 2015

Subject Code:131304 **Date:29/12/2015**

Subject Name: Basics of Structural Engineering

Time: 2:30pm to 5:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1		Analyze the beam shown in figure 1 by moment distribution method. Also draw shear force and bending moment diagram.	**14**
Q.2	**(a)**	Explain the middle third rule for the rectangular section.	**07**
	(b)	Determine the deflection at the tip or free end of cantilever beam with UDL throughout using moment area method	**07**
		OR	
	(b)	Determine the deflection at the mid span of simply supported beam with UDL throughout using moment area method.	**07**
Q.3	**(a)**	Elaborate on soundness test on cement.	**07**
	(b)	Explain slump test of concrete.	**07**
		OR	
Q.3	**(a)**	Elaborate on compressive strength test on cement.	**07**
	(b)	Explain alkali aggregate reaction on concrete.	**07**
Q.4	**(a)**	Explain the one of the test to measure the shear strength of soil.	**07**
	(b)	Explain the permeability of soil. Write the test procedure to find the soil permeability.	**07**
		OR	
Q.4	**(a)**	Explain on shear failure of soil.	**07**
	(b)	Write in short about geosyenthesis and its application.	**07**
Q.5	**(a)**	Explain on methods on curing of concrete.	**07**
	(b)	Explain one of the consolidation test of soil.	**07**
		OR	
Q.5	**(a)**	Explain the sieve analysis test for aggregates.	**07**
	(b)	Explain one of test on soil bearing capacity of soil.	**07**

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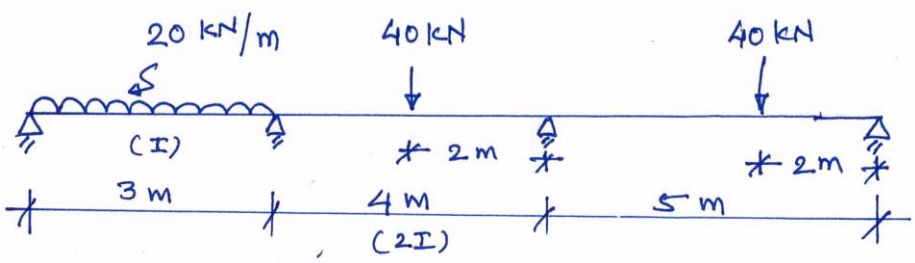

Figure 1 (Q. 1)