Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE Arch. – SEMESTER – III • EXAMINATION – WINTER 2013

Subject Code: 1035003 Date: 05-12-2013

Subject Name: Structure-III

Time: 10:30 am - 12:30 pm Total Marks: 50

Instructions:

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

Q.1	**(a)**	Define Axial load and Eccentric load	**06**
	(b)	A square column of 400 mm side carries a compressive Load of 400 kN at an eccentricity of 100mm on x-x axis. Find maximum stress and minimum stress at the base of the column.	**10**
Q.2	**(a)**	Define Strain energy and Resilience	**06**
	(b)	A steel bar 100 cm long and rectangular in section 40mm x 80mm is subjected to an axial load of 1 kN. Find the maximum stress if (a)The load is applied gradually. (b)The load is applied suddenly. (c)The load is applied after falling through a height of 8 cm. What are the strain energies in each of the above cases? Take E=200 GPa	**10**
		OR	
	(b)	A Hollow Circular section is having internal diameter 60mm and 10mm thickness. Calculate radius of gyration	**10**
Q.3	**(a)**	Advantages and disadvantages of indeterminate Structures	**06**
	(b)	A fixed beam of 6 m span carries U.D.L of 80 kN/m over its entire span. Draw S.F and B.M diagrams for the beam. Also find point of Contraflexure.	**12**
		OR	
Q.3	**(b)**	A two span continuous beam ABC is simply supported at A, B and C such that AB= 4m and BC = 6m. The span AB carries a central point load of 140 kN and span BC carries an u.d.l. of 30 kN/m. Draw S.F and B.M diagrams for the beam	**12**

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