Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BARCH - SEMESTER– III • EXAMINATION – WINTER 2016

Subject Code: 1035003 **Date: 19/11/2016**

Subject Name: Structure-III

Time: 10:30AM – 12:30PM **Total Marks: 50**

Instructions:

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

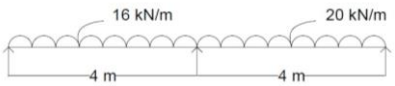
Q.1 **(a)** Differentiate between: **06**

1. Column & Struts.
2. Long column & short column.

(b) Write the expression of "Euler crippling load" for various end condition of a column. **04**

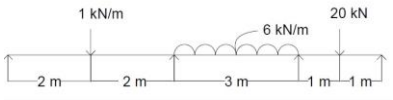
Q.2 **(a)** A fixed beam of 8 m span carries a point load 60 kN, and 12 kN/m udl all over the span. Draw Shear Force Diagram & Bending Moment Diagram of beam. **10**

(b) Solve the continuous beam shown in the figure below. Draw Shear Force Diagram & Bending Moment Diagram of beam. **10**



OR

(b) Solve the continuous beam shown in the figure below. Draw Shear Force Diagram & Bending Moment Diagram of beam. **10**



Q.3 **(a)** Find the radius of gyration for a hollow circular section having an external diameter of 100 mm and internal diameter 80 mm. **10**

(b) A Square column of 450 mm side carries compressive load of 400 kN at eccentricity 125 mm on X-X axis. Find the maximum stress and minimum stress at the base of the column. **10**

OR

(b) Explain the terms: (Any five) **10**

1. Fixed end moment
2. Stiffness
3. Distribution factor
4. Deflection
5. Portal frames
6. Radius of Gyration
7. Minimum eccentricity

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