Lukhdhirji Engineering College, Morbi

Department of Mechanical Engineering

Assignment 7- Beam & Columns (CO2 & CO3)

Subject: Fundamental of Machine Design (3141907) **Semester : 4th**

Year : 2022-23

1. Explain the different types of end conditions of column. Write the relations between equivalent length and actual length of a column for various end conditions.
2. Deflection of beams for different loading conditions
3. Compressive stress and Buckling of members
4. Define 'slenderness ratio'. State the assumptions used in Euler's column theory
5. Rankine's Formula, stresses in curved beam
6. Discuss the different types of supports / end conditions related to beams with neat sketches.
7. An I-section 400 mm × 200 mm × 10 mm and 6 m long is used as a strut with both ends fixed. Find Euler's crippling load. Take Young's modulus for the material of the section as 200 kN/mm^2
8. A hollow circular column is having external diameter 85 mm and internal diameter 65 mm. The effective length of column is 3m.Calculate slenderness ratio of column.

Vision:

- To deliver quality engineering education for Mechanical Engineers with Professional competency, Human values and Acceptability in the society.

Mission:

- To nurture engineers with basic and advance mechanical engineering concepts
- To impart Techno-Managerial skill in students to meet global engineering challenges
- To create ethical engineers who can contribute for sustainable development of society