

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Architecture – SEMESTER - II • EXAMINATION –SUMMER 2016

Subject Code: 3326205**Date: 10/06/ 2016****Subject Name: Structure-I****Time: 10:30 AM TO 12:30 PM****Total Marks: 50****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1 (a)** Explain the following terms: (Any Seven) **07**
1. Dead Load
 2. Hydrostatic Force
 3. Newton's first law of Motion
 4. Newton's first law of Gravitation
 5. Resultant Force
 6. Live load
 7. Earthquake load
 8. Prismatic Bar
 9. Composite Bar
- Q.2 (a)** Define Building and Difference between load bearing Structures and framed Structures. **05**
- (b)** Define Force and their Characteristics of the force. **03**
- OR
- (b)** Enlist types of force system (Any six) **03**
- Q.3 (a)** State parallelogram law of forces, Find Resultant of two forces F and F/2 acting on the body with an angle between them 135° by law parallelogram Method. **05**
- (b)** A circular rod of diameter 20 mm and 500 mm long is subjected to tensile force 50 KN. The modulus of elasticity for steel may be taken as 200×10^3 N/mm². Find Stress, Strain and elongation of the bar due to applied load. **05**
- Q.4 (a)** Find the Magnitude and Direction of resultant of the force system shown in Fig 1 (By Resolution Method) **05**
- (b)** Determine the support reactions of the beam shown in Fig 2 **05**
- (c)** Draw shear Force and Bending Moment Diagram for a beam shown in Fig 3. **05**
- Q.5 (a)** Define Beam and Types of beams, Types of Supports and Types of loading. **05**
- (b)** Define Truss and Types of trusses as per stability. **05**
- OR
- (c)** Draw shear Force and Bending Moment Diagram for a beam shown in Fig 4. **05**

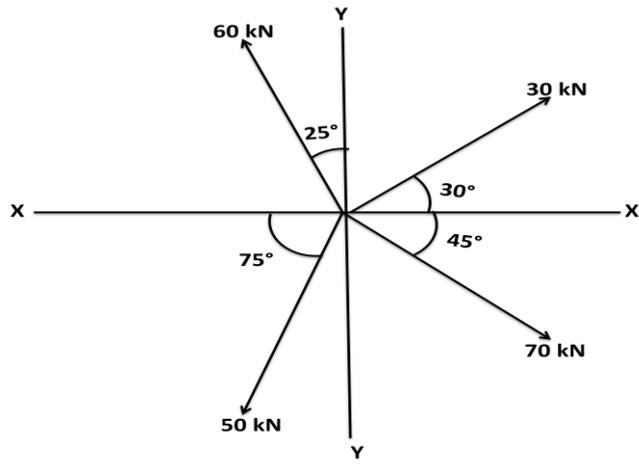


Fig-1

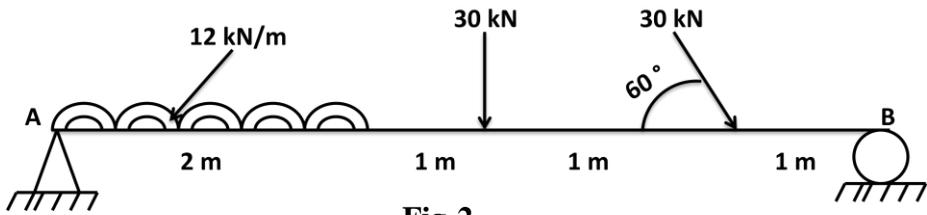


Fig-2

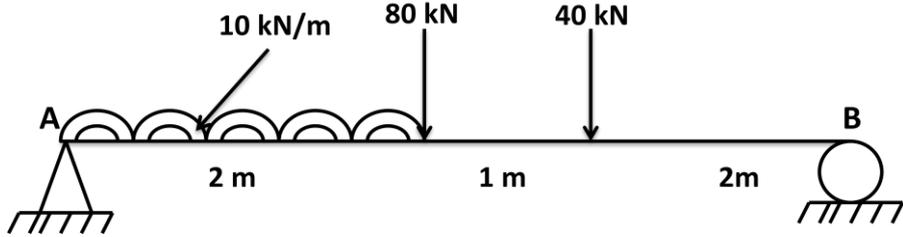


Fig-3

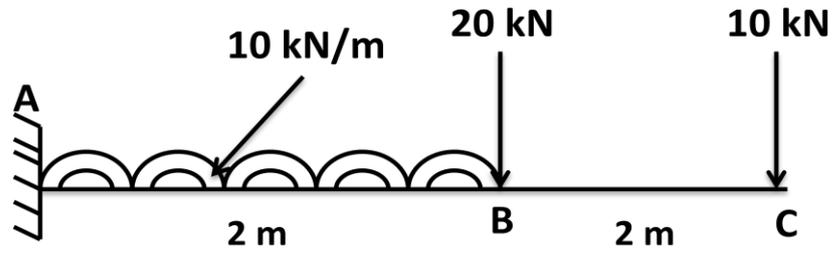


Fig-4

Best of Luck
