

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BA – SEMESTER – 1 - EXAMINATION – SUMMER 2018

Subject Code: 1025004

Date:18-May-2018

Subject Name: Structure – II

Total Marks:50

Time: 10:30 AM TO 012:30 PM

Instructions:

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

Q.1 (a) Define the following terms: (Any Seven) [7]

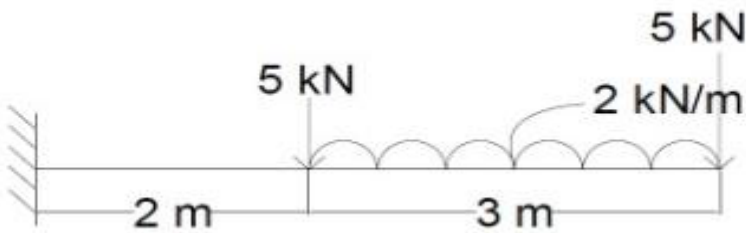
- 1. Stress
- 2. Strain
- 3. Modulus of Elasticity.
- 4. Elasticity
- 5. Principle of superposition
- 6. Shear Stress
- 7. Bending Moment
- 8. Shear Force
- 9. Hook’s law

(b) Explain trusses and their classification with sketch. [8]

Q.2 (a) Describe the following Terms (any Two – With the help of sketches) [5]

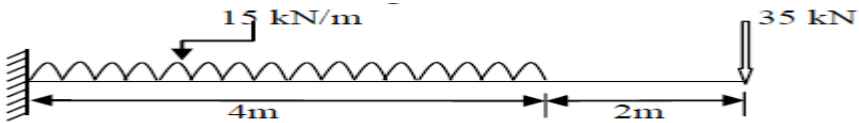
- I. Enlist the Basic Assumptions for Analyses of Truss
- II. Enlist of the various Types of Truss as per Stability [with the help of the equation]
- III. Enlist the Types of the END Support [with the help of Sketches]

(b) Draw the Shear force and Bending moment diagram for a Cantilever Beam shown in figure. [10]

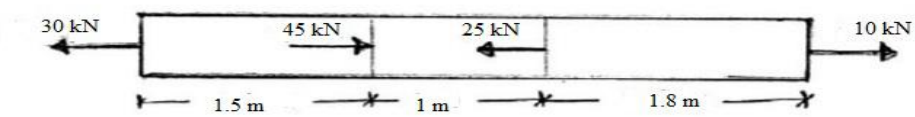


OR

Q.2 A 6 m span cantilever beam is shown in figure. Draw shear force and bending moment diagrams. [10]



Q.3 (a) A brass rod having 2 cm diameter is subjected to axial forces as shown in figure. Find the total elongation of the rod. Take $E = 2 \times 10^5 \text{ N/mm}^2$. [10]



(b) Define the following terms. [5]
1. Redundant truss
2. Deficient truss

OR

Q.3 (A) Draw the stress v/s strain curve of mild steel and Concrete also Explain all points. [10]

(b) Differentiate between truss and frame. [5]

Q.4 Describe the following body part as an example for type beam, support or load [5]

- 1. Wrist is _____ type of beam.
- 2. Area of chest to stomach is _____ type of beam.
- 3. Elbow is _____ type of support.
- 4. Flooring is example of _____ load.
- 5. Standing pole is example of _____ load.

OR

Q.4 Explain the equilibrium condition of a beam and the types of beam. [5]