

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BARCH – SEMESTER-I– • EXAMINATION – SUMMER 2015

Subject Code: 1015004

Date: 18-05-2015

Subject Name: Structure - I

Time: 02:30 pm - 04:30 pm

Total Marks: 50

Important Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Draw neat sketches where required.
4. Figures to the right indicate full marks.
5. If more options are attempted, then, highest scoring answers will be considered.

Q.1 Explain in Brief with sketches (any four) the following: (4 marks each) 16

- (1) Importance of Structures in Architecture
- (2) Dead load and Live Load
- (3) Framed Structure Vs a Load Bearing Structure
- (4) Lami's Theorem
- (5) Equilibrium Conditions
- (6) Resultant of two forces.

Q.2. Write a short note on Mechanical Properties. 10

Q.3. Solve (any three) of the following problems: (8 marks each) 24

- (1) Find moment of inertia of hollow triangular section given in Figure 1 along base BC.
- (2) Find moment of inertia of a I-section made up of three rectangles as shown in Figure 2, along the horizontal axis passing through the center of gravity of the I section.
- (3) Find Reactions at support A and B for simply supported beam shown in Figure 3
- (4) Find Reactions at support A and B for simply supported beam shown in Figure 4
- (5) Find center of Gravity of a Channel Section 100mm x 50 mm x 15 mm as shown in Figure 5

