

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BArch- SEMESTER– 5 EXAMINATION – SUMMER 2016

Subject Code: 1055004

Date: 11/05/2016

Subject Name: Structure – V

Time: 02:30PM - 04:30PM

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 IS 800 (2007) & Steel Table is Permitted.

- Q.1** (a) Draw Stress – Strain curve for mild steel and explain the important points. **05**
(b) Explain briefly type of connections used in steel design. **05**
(c) State the advantages of high strength friction grip bolt. **05**
- Q.2** (a) Advantages and disadvantages of bolt connections. **05**
(b) Explain the different types of weld connection of two gusset plate. **07**
- OR**
- (b) Explain the types of roof truss with figure. **07**
- Q.3** Two plates of 8 mm thickness are connected by a single lap joint with 20 mm diameter bolts at 60 mm pitch. Calculate the efficiency of the joint. Take f_u of plate as 400 MPa and assume 4.6 grade bolts. **10**
- OR**
- Q.3** A member ISA 100 x 100 x 6 mm placed back to back on either side 12 mm thick gusset plate. The member carries an ultimate tensile load of 200 kN. Determine number of 20 mm diameter 4.6 ordinary bolts. $F_u = 410$ MPa. **10**
- Q.4** (a) Write the specification of ISMB300 having height 3.5 m, hinged at both ends. $F_y = 250$ MPa. **06**
(b) Select suitable angle section to carry a factored load of 250 kN. Assuming a single row of M20 bolts and $F_y = 250$ N/mm². **07**
- OR**
- (b) Select suitable angle section to carry a factored load of 300 kN. Assuming a single row of M20 bolts and $F_y = 250$ N/mm². **07**
