Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CE-605 (GS)

B.E. VI Semester

Examination, May 2018

Grading System (GS)

Structural Design and Drawing-II

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Data missing and found necessary may be suitable assumed.
iv) Use of IS-800 and steel table is permitted.

1. a) Discuss Partial Load Factor. 4
   b) Design a suitable longitudinal fillet weld connection for plates of size 300mm×16mm and 230mm×20mm to transmit a pull equal to maximum strength of plate. 10

2. Describe gross yield strength, rupture strength and block shear strength of tension member and determine tensile strength of plate 530mm×20mm connected with 10 bolts of 24mm in two rows. 14

3. Design an intermediate beam to support a slab of hall measuring 6.50m×27.0m. Assume column spacing 4.50m and live load on slab 5KN/m^2. Apply all checks. 14

4. Design a welded plate girder of span 16.5 m carrying a uniformly distributed load of 20 kN/m excluding self weight along with two point loads of 600 kN placed equidistant on girder. Also determine whether intermediate stiffeners are necessary. rgpvonline.com 14

5. Design a column 7.0m long using ISHB subjected to a working load of 400KN. Both ends of member are hinged. Also design the slab base using concrete M20 on foundation strata having S B C 120 kN/m^2. Also prepare executable drawing. 14

6. a) Explain a block shear failure in plates and angles. 4
   b) Design a single angle strut carrying a service load of 175 kN. Length of member is 3.0m. 10

7. Explain various components of a structural building with neat diagram. rgpvonline.com 14

8. Write short notes on any four: 14
   a) Effective length of column
   b) Compact and semi-compact sections
   c) Slab base and Gusset base
   d) Plastic moment
   e) Shape factor and its significance
   f) Types of transmission line towers

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