Printed Pages : 2

AR803

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 181803

Roll No.

B. Arch.

(SEM. VIII) THEORY EXAMINATION, 2014-15

ARCHITECTURAL STRUCTURES - VIII

Time : **3** Hours] [Total Marks : **50**

Note : (1) Attempt any **five** questions.
(2) All questions carry **equal** marks.
(3) IS code is allowed.
(4) Assume any missing data.

1 (a) Define all design parameters in rivetting with diagrams.
(b) Discuss advantages/disadvantages in revetting vs welding.

2 (a) Define the assumptions made in rivetting.
(b) Define and draw various types of welding and welding design parameter.

3 Design a splice for tension member section plates 160 × 10 mm and 250 × 14 mm. The member is subjected to a pull of P = 200 kN, f_y = 250 N/mm^2. Use 4 mm packing.

4 (a) Draw various built up section of compression members, using angles, plates and channels sections.

(b) Define the following in rivetting :

(i) Gauge
(ii) Pitch
(iii) Gross diameter
(iv) Chain rivetting
(v) Zig-Zag rivetting.

5 What is Grillage Foundation and where it is used ? Draw plan and elevation and draw B.M. diagram it is base.

6 Calculate the value of least radius of gyration for a compound column ISHB 250 @ 547 N/m with one cover plate 300 mm × 20 mm on each flange.
For ISHB 250
$I_{xx} = 7983.9 \times 10^4$ mm^4, A = 18971.0 mm^2
$I_{yy} = 2011.7 \times 10^4$ mm^4

7 A sample of soil weighing 30.6 kg had a V = 0.0190 m^3 when dried in oven, it is reduced to 26.9 kg. Sp. gravity = 2.7. Calculate :

(i) Bulk density
(ii) Dry. density void ratio
(iii) Porosity
(iv) Moisture content
(v) Degree of saturation.