Printed pages: 02 **Sub Code: RAR603**

Paper Id: 181290 **Roll No:** | | | | | | | | | | |

BARCH

(SEM VI) THEORY EXAMINATION 2018-19

ARCHITECTURAL STRUCTURES VI

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

Notes:

- *Attempt all Sections.*
- *Required IS Code data is already given.*
- *Assume any missing data suitably.*

SECTION – A

Q1) Answer the following term in brief: **(10X1=10)**

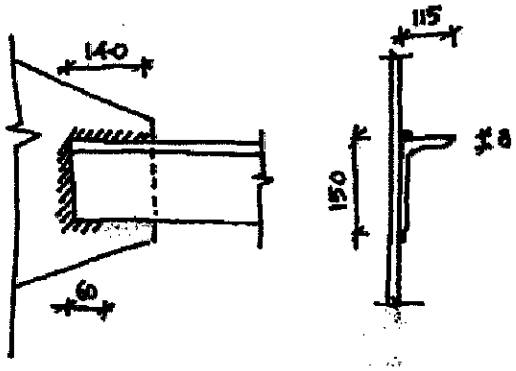
a) Define minimum eccentricity for design of RCC column.
b) What is effective height of column if (i) both end fixed (ii) both are hinged. ?
c) What are the different types of foundation?
d) Explain pile foundation.
e) What are the different types of retaining wall?
f) Draw reinforcement in a cantilever retaining wall.
g) Define strength of riveted joint.
h) Define design strength of welded joints.
i) Define slenderness ratio.
j) Enumerate various components of plate girder in steel structures.

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SECTION – B

Q2) Attempt any **five** questions: **(5x5=25)**

a) Explain different assumptions for analysis and design of RCC column.
b) Write different steps for the design of short RCC column under pure axial load.
c) Explain different types of foundation and detailing of its reinforcement.
d) Explain classification of piles and their applications.
e) Explain different safety checks used in design of cantilever retaining wall.
f) Explain different types of riveted connections with diagram.
g) Explain grillage foundation and its components and uses in building industry.
h) Calculate the tensile strength of an angle seetion lSA 150X115X8 mm of fe410 grade of steel connected with the gnsset plate as shown in figure



SECTION – C

Q3) Attempt any **two** questions. **(2X7.5=15)**

a) Design a short column square in section, to carry an axial load of 2000 KN using Fe 415 grade steel and M20 mix.

b) Calculate the design compressive load for a column ISHB 350 @ 710.2N/m, 3.5 m high. The column is restrained in direction and position at both the ends. Use steel of grade Fe 410. The ISHB 350, Area=93.21 cm^2, r_z = 14.93 cm, r_y = 5.43cm thickness of flange 11.6mm, thickness of web=8.3mm

d/r	fcd(MPa)
30	216
40	206
50	194
60	181

c) Explain various types of roof trusses and nomenclature of its members.

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