Printed Pages: 3 **AR-803**

(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 181803	**Roll No.**

B. Arch.

Theory Examination (Semester-VIII) 2015-16

ARCHITECTURAL STRUCTURES-VIII

Time : 3 Hours ***Max. Marks : 100***

Note : IS456 2000 Allowed

IS800 2007 Allowed

Section-A

Q1. Attempt all part of the following.

Define following. **(2×10=20)**

(a) Optimum moisture content & dry density.

(b) Active & Passive earth pressure.

(c) Internal Angle of friction & cohesive force.

(d) Riveted & welded connection for steel structures.

(e) Ties and Rafters.

(f) Tension members in steel structures.

(g) Grillage foundation.

(h) Water table.

(i) Purlins and strut

(j) Raft foundation and pile foundation

Section-B

Q2. Attempt any five part of the following. (5×10=50)

(a) Explain the method for design of axially loaded columns in steel structure.

(b) Raft foundation and the conditions where this type of the foundation is provided. $\phi=0$, $c=10$ kN/m^2, Unit weight of soil = 20 kN/m^3, N_c = 5.7, N_q=1, N_γ =03.

(c) Design a welded connection for plates 200 mm wide and 10 mm thick.

(d) Explain the functioning of Friction piles and end bearing pile foundation.

(e) Importance of Angle of repose for cohesive and non cohesive soil.

(f) Advantage of welded connections over riveted connections.

(g) Calculate the earth pressure for retaining wall having retaining surface plain at 7.5m below the ground level with internal angle of friction (ϕ)=30° & Bulk density of soil =20.0 kN/m^3.

Section-C

Attempt any two part of the following. (2×15=30)

Q3. Design a isolated footing for RCC column size 400×400 mm carrying axial load of 1000 kN and safe bearing capacity 200 kN/m^2. Use M20 & Fe 415 steel.

Q4. Design a plate girder effective span 10.0m carrying a uniformally distributed load of 40 kN/m.

Q5. Design a axially loaded steel column carrying a load of 1200 kN length 3.5m both end of the column are fixed.