



Printed Pages : 2

AR – 403

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

PAPER ID : 8544

Roll No.

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B. ARCH.

(SEM. IV) EXAMINATION, 2006-07

ARCHITECTURAL STRUCTURES - IV

Time : 3 Hours]

[Total Marks : 50

- Note :*
- (1) *Use of IS : 456 & IS : 1905 allowed.*
 - (2) *All questions carry **equal** marks.*
 - (3) *Attempt **all** questions.*
 - (4) *Assume missing data.*

- 1** Attempt any **four** parts : **10**
- (1) Nominal mix and design mix
 - (2) Concept of reinforcement bars
 - (3) Dead load and live load
 - (4) M20 and Fe 415
 - (5) Shear stirrups
 - (6) Properties of concrete.

- 2** (a) Write concept of working stress method. **5**

OR

- (a) What is balanced steel for M20 and Fe415 in working stress method and explain under and over reinforced section beam.
- (b) Differentiate (i) singly and doubly reinforced **5** beam and (2) one way and two way slabs.

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[Contd...

- 3 Design one way slab for 10 m × 3 m slab for steel only. Take imposed load 1.5 kN/sqm. Use M20 and Fe 415. Take support width as 300 mm masonry walls. 10

OR

- 3 Derive all single reinforced constants for M 20 and Fe 415 10
- 4 Design a beam of limited Section (300 mm × 650 mm effective), for 120 kN-M moment, show cross section. Use M 20 and Fe 415. Also explain concept of effective width for a T beam. 10

OR

- 4 Design a simple supported slab 3 m × 5 m internal size of a residential room supported on 250 mm thick walls. Corners are not designed for end torsion. Take live load 2.5 kN/sqm. Use M 20 and Fe 415. 10
- 5 Write type of brick wall and its footing and give correlation of brick compressive strength and mortar ratio. 10

OR

- 5 Write design steps for brick column footing and design a footing for a brick column subjected to 20T load. Write your assumptions taken. 10