* V – 8 5 4 4 *

Printed Pages : 2 **AR – 403**

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

PAPER ID : 8544 Roll No. | | | | | | | | | | |

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 beam and (2) one way and two way slabs. **5**

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**