

S.No. : 440

AR 403

No. of Printed Pages : 03

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

**PAPER ID : 00119**

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## B. Arch. Examination 2021-22

(Even Semester)

### ARCHITECTURAL STRUCTURES - IV

*Time : Three Hours]*

*[Maximum Marks : 50*

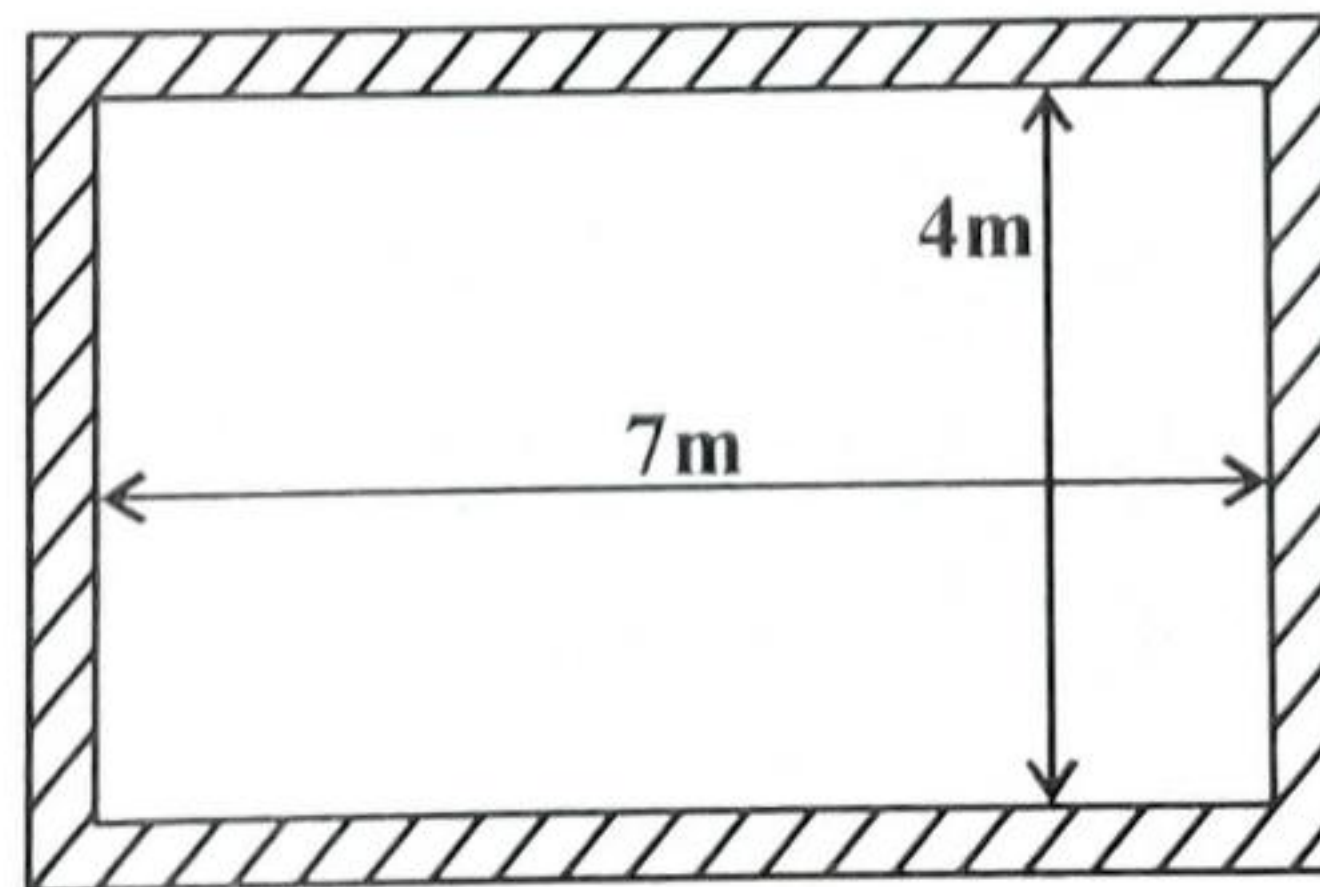
- Note :-**
- (i) Marks are indicated against each question or part thereof.
  - (ii) Question No. 1 is compulsory. Attempt any three out of remaining four.
  - (iii) Use of IS 456 : 2000 is allowed.

1. Write short notes on any four of the following : 8
- (a) Design mix and nominal mix
  - (b) Effect of sea water on concrete
  - (c) Durability of concrete structures
  - (d) One way slab

*[ P. T. O.*



- (c) Working stress method
- (f) Isolated footing
2. (a) Find moment of resistance of given section for M 20 and Fe 415 for beam of cross section 200 mm width and effective depth 300 mm take cover as 50 mm. It is reinforced with 4 bars of 20 mm. 9
- (b) Define balanced section and calculate its steel required for M 20 and Fe 415 for single reinforced beam : 5
3. (a) 8

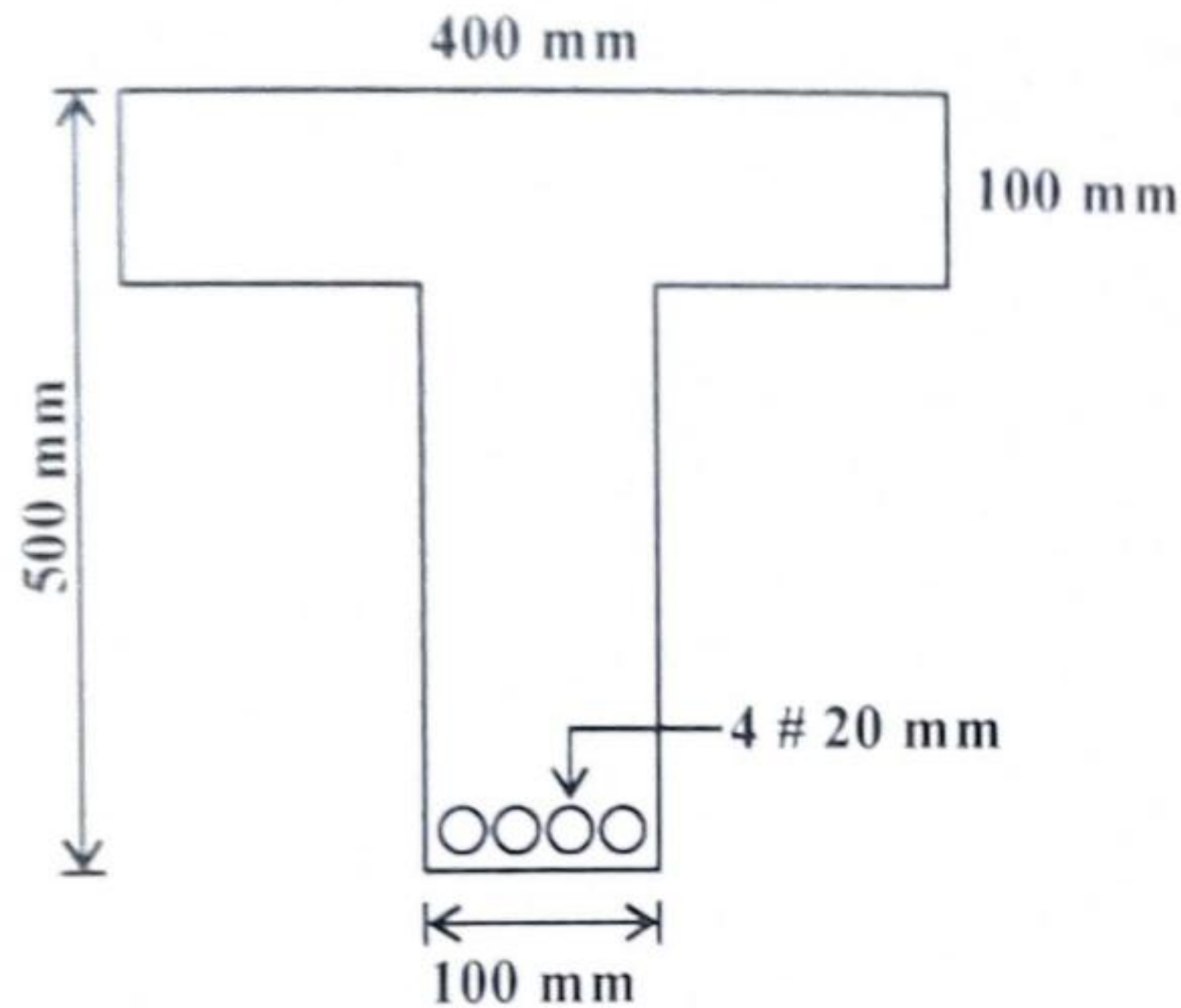


7 m  $\times$  4 m RCC slab is resting on 9" brick wall use M 20 and Fe 415. Design and detail RCC slab.

- (b) Differentiate between balanced section, over reinforced section, under reinforced section. 6



4. (a) How will you find moment of resistance of flanged beam : 7



Take nominal cover as 20 mm, M 20 and Fe 415.

- (b) Draw reinforcement diagram of one way slab. 7
5. (a) Design foundation of a brick wall 350 mm thick which is transmitting a load of 90 kN per metre length. The net bearing capacity of the soil is 100 kN/m<sup>2</sup>. 9
- (b) Draw the cross section of the wall foundation designed above. 5

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