PAPER ID-310013

Subject Code: NAR503

Roll No: | | | | | | | | | | | | | |

B ARCH
(SEM V) THEORY EXAMINATION 2020-21
ARCHITECTURAL STRUCTURE V

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

Note: Attempt all Sections. Assume any missing data suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 5 = 10

a.	What is the L/D Ratio in Case of One Way Slab?
b.	Define Yield Stress
c.	What do you mean Footings?
d.	Define the Effective span of beams.
e.	Write a short note on Building Codes.

SECTION B

2. Attempt any *three* of the following: 5 x 3 = 15

a.	Differentiate Between Limit state and working state method.
b.	Write any five Advantages of Pre Stressed Beams
c.	Design a Slab of Size 2.1mX4.6m for a Living Room the floor finishing Load is 3.5 Kn/m. Use M 20 and Fe415 Steel.
d.	Design a Two Way Slab of Clear Span 6m X 8m using Limit State Method.
e.	With Diagram explain the Stress Strain Characteristics of Steel and Concrete

SECTION C

3. Attempt any *one* part of the following: 5 x 1 = 5

(a)	Differentiate between Singly Reinforced beams and Doubly Reinforced Beams
(b)	Write a Short note on Elements of Pre Stressed Concrete.

4. Attempt any *one* part of the following: 5 x 1 = 5

(a)	What do you mean by Lateral Ties? Describe the use OF Lateral ties in R.C.C Columns.
(b)	Design a Circular Column to carry an Axial load of 1000 Kn use M15 Mix and Fe 415 Steel.

5. Attempt any *one* part of the following: 5 x 1 = 5

(a)	What do you mean by Factored loads? Also Discuss the Partial Factors of Safety.
(b)	A T beam floor consists of 150mm thick Rc Slab monolithic with 300 mm wide beams. The beams are spaced at 3.5 m centre to centre and effective span is 6 m. if the Superimposed load of slab is 5kn/m^2. Design the Intermediate T beam use M20 mix and Fe 415 Steel

6. Attempt any *one* part of the following: 5 x 1 = 5

(a)	Design a one Way slab of Clear Span of 4.0 m. Simply Supported on Brick Wall of 220 mm thick and subjected to live load of 4 kn/m^2 and Surface Finish of 1kn/m^2. Assume M15 Mix and Fe 415 Steel.
(b)	Write a Short Note on Characteristics Load and Characteristics Strength of Limit State Method.

7. Attempt any *one* part of the following: 5 x 1 = 5

(a)	Design a Rcc Slab for a Room 5 m X 3.2 m. The Slab is to be cast over the beam with all sides Simply Supported. It has to add the Characteristic load of 10 kn/m^2 Use M 25 Concrete and Fe 415 Steel.
(b)	Discuss the Design of R.C.C Column for Pure axial Loads and Draw Various Types of Column Reinforcement