

CBCS SCHEME



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15ARC22

Second Semester B.Arch. Degree Examination, Aug./Sept.2020 Materials and Methods in Building Construction – II

Time: 4 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 A hall measuring 10m × 15m is required to be roofed with Mangalore tiles on Queen post truss. The trusses are spaced at 3.0m centre to centre and supported on 2 brick thick walls on either side. Draw detailed drawings for the following with suitable scale:
- Key plan showing hall size and position of truss and purlins. (06 Marks)
 - Elevation of the truss (10 Marks)
 - Any one detail (Enlarged). (04 Marks)

OR

- 2 Explain with neat sketches:
- King post truss (10 Marks)
 - Steel roof truss (07 Marks)
 - Collared roof. (03 Marks)

Module-2

- 3 a. Describe in detail the reinforcement steel and its architectural (Building Elements) uses. (10 Marks)
b. What are the tests for cement and their importance? (10 Marks)

OR

- 4 Write short notes on:
- Admixtures (06 Marks)
 - Ready-mixed concrete (06 Marks)
 - Types of cements and their uses. (08 Marks)

Module-3

- 5 Two columns of 300mm × 300mm have to be provided with combined footing of size 4500 × 1600 × 750mm and columns are spaced at 3000mm centre to centre. Assume necessary bar diameters and spacing, draw the following details with the suitable scale.
- Plans showing reinforcement details (TOP and Bottom) (10 Marks)
 - Sectional elevation showing reinforcement details. (10 Marks)

OR

- 6 Write short notes on:
- Isolated footing (06 Marks)
 - Sampling and testing of concrete (07 Marks)
 - Construction and Expansion joints. (07 Marks)

Module-4

- 7 A doglegged stairway in R.C.C. folded plate from ground floor to first floor. The width of the flight is 1.0m and floor to floor height is 3.0m. Draw following details to the suitable scale:
- Plan (08 Marks)
 - Sectional Elevation (08 Marks)
 - Any one Enlarged detail. (04 Marks)

OR

- 8 Explain with neat sketches:
- Masonry stair case (06 Marks)
 - Timber stair case (06 Marks)
 - Components and anthropometry of stair. (08 Marks)

Module-5

- 9 Draw the following details of a composite staircase using Brick/stone, the width of the flight is 1.0m and floor height is 3.0m. Draw the following with suitable scale:
- Plan (06 Marks)
 - Sectional Elevation (10 Marks)
 - Any one Enlarged detail. (04 Marks)

OR

- 10 Explain with neat sketches:
- Steel stringer staircase (06 Marks)
 - Composite stair using steel and timber (07 Marks)
 - Composite stair using steel and glass. (07 Marks)
