

# CBCS SCHEME



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18ARC42

## Fourth Semester B.Arch. Degree Examination, July/August 2022 Materials and Methods in Building Construction – IV

Time: 4 hrs.

Max. Marks: 100

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

### Module-1

- 1 Explain the principles and concept for the following with neat sketches.
- Moment resistance frame structure (10 Marks)
  - Flat slab system. (10 Marks)

OR

- 2 Draft flat slab roof with drop panel and column capital with RCC column of size 450mm × 450mm. At 5000mm centre to centre. Show reinforcement detail. Assume necessary detail and draw to suitable scale.
- Plan with reinforcement detail in slab and two grids X and Y directions. (06 Marks)
  - Enlarged cross sectional (06 Marks)
  - Enlarged section of flat slab with drop panel and column capital with reinforcement detail scale 1 : 10. (08 Marks)

### Module-2

- 3 Explain the concept with the help of neat sketches for the following :
- Filler slab – construction method (10 Marks)
  - Waffle slab – construction method. (10 Marks)

OR

- 4 An exhibition room required to cast waffle slab supported on RCC column for a room of size 4000 × 8000mm clear and 3600mm in height to bottom of ribs. Draw the following with necessary details to suitable scale.
- Roof plan showing waffle units and its sizes (06 Marks)
  - Cross section of room with floor height show N (06 Marks)
  - Enlarged section of waffle slab system showing reinforcement detail. (08 Marks)

### Module-3

- 5 Explain steel as a building material with the help of neat sketches and briefly describe where steel used as an architectural building material. (20 Marks)

OR

- 6 Sketch the joinery details using iSMB and iSMC sections by mentioning the sizes.
- Junction in between column and beam (07 Marks)
  - Junction n between base plate and column showing necessary detail (07 Marks)
  - Junction between beam and purling. (06 Marks)

### Module-4

- 7 a. Draw plan, elevation and section of steel Glaied window for an opening of size 1350mm × 1200mm. Use suitable steel sections to scale 1 : 10. (12 Marks)
- b. Draw any two joinery detail to scale 1 : 2. (08 Marks)

OR

- 8 Explain with neat sketches, where are they used :
- a. Rolling shutter (07 Marks)
  - b. Collapsible gate (07 Marks)
  - c. Steel garage doors. (06 Marks)

Module-5

- 9 Explain aluminum as a building material with the help of neat sketched and briefly describe the importance of aluminum in building construction and its properties. (20 Marks)

OR

- 10 a. Draw plan, elevation, section to 1 : 10 scale of aluminum sliding window for an opening of size 1200 × 1350mm. (10 Marks)
- b. Draw any two joinery detail to 1 : 2 scale. (10 Marks)

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