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.
- a. Moment resistance frame structure **(10 Marks)**
- b. 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.
- a. Plan with reinforcement detail in slab and two grids X and Y directions. **(06 Marks)**
- b. Enlarged cross sectional **(06 Marks)**
- c. 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 :
- a. Filler slab – construction method **(10 Marks)**
- b. 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.
- a. Roof plan showing waffle units and its sizes **(06 Marks)**
- b. Cross section of room with floor height show N **(06 Marks)**
- c. 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.
- a. Junction in between column and beam **(07 Marks)**
- b. Junction n between base plate and column showing necessary detail **(07 Marks)**
- c. 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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