CBCS SCHEME

USN | | | | | | | | | | |

15ARC42

Fourth Semester B.Arch. Degree Examination, Aug./Sept.2020
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 with neat sketches:
- a. The concept of flat slab and where are they used. **(04 Marks)**
- b. Differentiate between flat slab and conventional slab system. **(08 Marks)**
- c. The general design principles followed in the design of moment framed structure. **(08 Marks)**

OR

2 Draft the flat slab roof with drop panel and column capital with RCC columns of size 600 × 600 at 6.00 mts c/c. Assume necessary detail. Draw to suitable.
- a. Plan with reinforcement showing. **(06 Marks)**
- b. Cross section **(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 a. Explain the concept of filler slab with relevant sketches with respect to any material. **(10 Marks)**

b. Explain the concept of waffle slab and sketch the method of construction used to construct waffle slab. **(10 Marks)**

OR

4 A seminar hall required to cast a filler slab supported with beams and columns for a room of size 4.00 × 8.00 × 3.60 mtr with earthen pots as a filler material.
- a. Top roof plan. Scale = 1:25 **(08 Marks)**
- b. Cross section showing filler material Scale = 1:25 **(06 Marks)**
- c. View showing top roof showing filler and reinforcement. To suitable scale. **(06 Marks)**

Module-3

5 Explain the principles and method of construction of typical steel columns and beams with appropriate detail sketch. **(20 Marks)**

OR

6 Show the joinery detail to a scale of 1:2. Using ISMB and ISMC with standard sections.
- a. Junction in between column and beam. **(07 Marks)**
- b. Junction in between base plate and column showing necessary detail. **(07 Marks)**
- c. Junction between beam and purlin. **(06 Marks)**

Module-4

7 a. Draw plan, elevation and section of steel window of size 1200 × 1350. Assume standard sections. Scale = 1:10. **(12 Marks)**

b. Draw any two joinery detail. Scale = 1:2 **(08 Marks)**

OR

8 a. Draw plan, elevation of rolling shutter for a car showroom with MS perforated shutter of opening size 3600 × 3300 mm. Draw to suitable scale. **(10 Marks)**

b. Show the detail at corner junction, how the channel is fixed to wall. Scale = 1:5. **(05 Marks)**

c. Show the rolling shutter barrel enlarged detail. How it is fixed to wall? **(05 Marks)**

Module-5

9 a. Draw plan, elevation and section of an aluminium sliding window with mosquito mesh showing three track system, for an openings of 1200 × 1100 mm. Scale = 1:20 **(12 Marks)**

b. Draw any two joinery detail. Scale = 1:2 **(08 Marks)**

OR

10 a. Explain the properties and uses of aluminium as a building material. **(10 Marks)**

b. Sketch the various types of aluminium doors and windows used in construction industry. **(10 Marks)**

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