CBCS SCHEME

Acharya's NRV School of Architecture LIBRARY Bangalore

USN | | | | | | | | | |

18ARC42

Fourth Semester B.Arch. Degree Examination, June/July 2024
Materials & Methods in Building Construction - IV

Time: 4 hrs. Max. Marks: 100

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

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice

Module-1

1 Explain the difference between :
- a. A shear wall and A retaining wall. **(07 Marks)**
- b. A flat plate and A flat slab. **(08 Marks)**
- c. A drop panel and A column capital. **(05 Marks)**

OR

2 Explain the advantages and disadvantages of a Flat slab system over a conventional beam-slab system. **(20 Marks)**

Module-2

3 Answer the following :
- a. What are the advantages and disadvantages of using a Filler slab, compared to a conventional slab? **(10 Marks)**
- b. What are the properties of a materials that can be used as a Filler, in Filler slabs? Explain in detail. **(10 Marks)**

OR

4 Answer the following :
- a. What are the advantages and disadvantages of a Waffle (or Coffered) slab, when compared to a Flat Slab system? **(10 Marks)**
- b. A space 13m×15m has to be covered using a waffle slab. Draw the key plan, section of isometric view (part, from below). Assume that the waffle pods are available in sizes of 1.1m×1.1m only. **(10 Marks)**

Module-3

5 Answer the following :
- a. What are the advantages and disadvantages of using steel framing instead of conventional RCC columns/beams in building construction? **(10 Marks)**
- b. Write short notes on the various ways in which steel is used in building construction. **(10 Marks)**

OR

6 A room, 6m×5.5m, 3.5 m high has to be built using structural steel framing and sheet decking with RCC Roof slab. Assume appropriate sizes and draw the following :
- a. Framing plan, showing the columns, main and secondary beams. **(05 Marks)**
- b. Details of connecting masonry wall to columns ; and detail of connecting a wooden framed door to the column. **(08 Marks)**
- c. Detail of connection between column and foundation ; and beam to secondary beam. Assume welded or bolted connections. **(07 Marks)**

Module-4

7 Draw the plan, elevation and section of a glazed window 1.5 m long by 1.2 m high using 'Z' and 'CHAIR' sections. Draw all relevant details in 1 : 10 scale. **(20 Marks)**

OR

8 Draw the plan, elevation and section of an M.S. Framed, 'BOX' Shutter door, 1.2m×2.1m Shutter is M.S. framed, with block board panel 25 mm thick. Draw all relevant details in 1 : 10 scale. **(20 Marks)**

Module-5

9 Draw the plan, elevation and section of an office partition, 3.0 m×3.0 m; with a sliding door 0.9m×2.1m. At one end. The partition is made of aluminium sections and the panels are a combination of Novopan and Glass. Draw all relevant details to 1 : 10 scale. **(20 Marks)**

OR

10 Draw the plan, elevation and section of an aluminium framed, three track window, 3.0m×1.2m ; with sliding shutters. Draw all relevant details in 1 : 10 scale. **(20 Marks)**

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