MRV School of Architecture LIBRARY Bangalore

CBCS SCHEME

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

18ARC22

Second Semester B.Arch. Degree Examination, Dec.2024/Jan.2025
Materials and Methods in Building Construction – II

Time: 4 hrs. Max. Marks: 100

Note: 1. *Answer any FIVE full questions, choosing ONE full question from each module.*
2. *Provide neat sketches and construction notes where necessary.*

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 A Queen post truss is required for span of 12.0 m, using roof covering of tiles. Enumerate the following with appropriate cross sectional sizes of all members, type of joints used and construction notes.

a. Partial Elevation to scale 1:25 **(10 Marks)**

b. Joints at Ridge and bearing 1:10 **(10 Marks)**

OR

2 A steel truss with M.S. Angles is proposed for a building of span 7.5 m, with aluminium roofing. Provide the following details:

a. Sectional elevation of truss to scale 1:25 **(10 Marks)**

b. Details at Ridge and bearing to scale 1:2 **(10 Marks)**

Module-2

3 a. What are the methods of proportioning concrete mixes? **(15 Marks)**

b. Enumerate any five properties of reinforced steel. **(05 Marks)**

OR

4 a. List any five types of major construction works and indicate concrete proportion and maximum size of aggregate required for each **(10 Marks)**

b. Write a brief note on slump test. **(10 Marks)**

Module-3

5 a. What are various types of construction joints in concrete? Enumerate with sketches. **(10 Marks)**

b. Describe in detail the ingredients of Reinforced cement concrete. **(10 Marks)**

OR

6 a. In what type of situations would you use combined footings? **(08 Marks)**

b. Explain in short, any five types of chemical admixtures used in concrete. **(12 Marks)**

Module-4

7 A straight flight wooden staircase is planned for a height of 2.4 m and 800 mm width. Provide the following with construction details and notes:

a. Plan in 1:10 scale **(10 Marks)**

b. Section 1:10 scale **(10 Marks)**

OR

8 A folded plate RCC staircase is required for a height of 3.0 m and 900 mm width. Draw :

a. Design and draw plan and section to scale 1:10 **(16 Marks)**

b. Any one detail to scale 1:5 **(04 Marks)**

Module-5

9 Design and draw with neat sketches, any two composite stair-case out of the materials mentioned below. Provide notes.

(i) Concrete and wood

(ii) Steel and glass

(iii) Steel and timber

(iv) Brick and stone **(20 Marks)**

OR

10 Design a Spiral steel staircase for a residence having 900mm width. Assume floor to floor height 3150mm.

a. Plan. **(05 Marks)**

b. Longitudinal Section. **(05 Marks)**

c. 2 enlarged details. **(10 Marks)**

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