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18ARC22

Second Semester B.Arch. Degree Examination, Jan./Feb.2021
Materials & Methods in Building Construction – II

Time: 4 hrs.
Max. Marks: 100

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

Module-1

1   A Verandah 3.0×6.0 M needs to be provided with a Lean-to roof. The same has to be roofed with Mangalore tiles. Draw the following to suitable scale:
   a. Key plan.   (04 Marks)
   b. Enlarged part plan.   (06 Marks)
   c. Sketch any two details.   (06 Marks)
   d. Detailed section.   (04 Marks)

OR

2   a. Draw the sectional elevation of steel tubular truss and explain the various parts.   (10 Marks)
   b. Sketch details of AC sheet fixing detail at Purlin.   (05 Marks)
   c. Sketch typical detail at ridge.   (05 Marks)

Module-2

3   Explain the followings:
   a. Acid resisting cement.   (05 Marks)
   b. White cement.   (05 Marks)
   c. Mixing of concrete.   (05 Marks)
   d. Water cement ratio.   (05 Marks)

OR

4   a. List any five types of major construction works and indicate concrete proportion and minimum size of aggregate required for each.   (12 Marks)
   b. Write a brief note on slum test.   (08 Marks)

Module-3

5   A column 230×230 mm has to be provided with a RCC isolated footing of size 1500×1500 mm. Draw detailed drawing in suitable scale for the following :
   a. Plan with reinforcement detail.   (06 Marks)
   b. Section.   (06 Marks)
   c. Isometric view.   (08 Marks)

OR

6   Write short notes on : (with neat sketches)
   a. Timber Grillage – plan and section.   (10 Marks)
   b. Steel Grillage – Plan and section.   (10 Marks)

Module-4

7 A stairway in Timber is to be provided in a show room to reach a height of about 4.0 m. Assuming suitable design and data, draw to suitable scale:

a. Plan. (04 Marks)
b. Cross section. (04 Marks)
c. Longitudinal section. (04 Marks)
d. Any two enlarged Joinery details. (08 Marks)

OR

8 A metal stringer staircase with open riser is to be designed for a floor height of 3.15 M. Width of stair is 1.0 M. Draw the followings to suitable scale :

a. Plan. (05 Marks)
b. Elevation. (05 Marks)
c. Any 2 details. (10 Marks)

Module-5

9 Explain with neat sketches:

a. Steel spiral staircase – Plan
— Elevation. (10 Marks)
b. Composite staircase using steel and RCC – Plan.
— Elevation. (10 Marks)

OR

10 A steel fire escape stairs in an Apartment block is to be fitted within a size of 4.0 m width and 7.0 m length, outside the building. Assuming the typical floor height to be 3150 mm (or any other suitable dimension). Draw the followings to suitable scale –

a. Plan. (04 Marks)
b. Cross section. (04 Marks)
c. Longitudinal section. (04 Marks)
d. 2 Enlarged details (sketches). (08 Marks)

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