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18ARC22

Second Semester B.Arch. Degree Examination, July/August 2021 Materials and Methods in Building Construction - II

Time: 4 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 Explain with neat sketches :
 - a. Lean to roof. (04 Marks)
 - b. Collared roof. (08 Marks)
 - c. Queen past roof. (08 Marks)

- 2 A hall measuring 8m × 4m has to be provided with steel russ roof , draw to suitable scale
 - a. Key Plan. (05 Marks)
 - b. Any three details of the roofing system. (15 Marks)

- 3 Write short notes on :
 - a. Types of concrete. (05 Marks)
 - b. Ingredients of Concrete (R.C.C). (05 Marks)
 - c. Properties of R.C.C. (05 Marks)
 - d. Role of Admixture. (05 Marks)

- 4
 - a. What is R.C.C? Explain role of reinforcement in R.C.C. Discuss its grades and properties. (15 Marks)
 - b. Explain briefly what is Cement and its types. (05 Marks)

- 5
 - a. Show with neat sketches Formwork for Beam and Roof. (10 Marks)
 - b. Write short notes on :
 - i) Compacting (10 Marks)
 - ii) Testing of R.C.C. (10 Marks)

- 6 A column of size 300 × 300mm has to be provided with an R.C.C isolated footing 1200 × 1200mm. Assume necessary diameter and spacing. Draw in suitable scale :
 - a. Plan. (06 Marks)
 - b. Section. (06 Marks)
 - c. Isometric View. (08 Marks)

- 7 Draw a timber staircase in suitable scale and mark all its components :
 - a. Plan. (05 Marks)
 - b. Sectional Elevation. (05 Marks)
 - c. Two details. (10 Marks)

- 8 Explain with neat sketches and short notes :
 - a. Folded Plate Staircase. (07 Marks)
 - b. Stringer beam in R.C.C Staircase. (07 Marks)
 - c. Precast Staircase. (06 Marks)

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.

- 9 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)
- 10 Design a composite staircase with Brick / Stone / Wood / Bamboo / Steel / Glass etc from your memory for your own residence. Draw typical details :
- a. Plan. (05 Marks)
 - b. Sectional Elevation. (05 Marks)
 - c. Two details. (10 Marks)
