USN ☐☐☐☐☐☐☐☐☐☐ **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 truss 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   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)

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)

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