## Second Semester B.Arch. Degree Examination, June/July 2019
# Materials & Methods in Building Construction – II

Time: 4 hrs.                                                                          Max. Marks:100

**Note:** 1. *Answer FIVE full questions, selecting ONE full question from each module.*
2. *All questions should be answered in Drawing sheet only.*

### Module – 1

1    Draw the roofing construction drawing for a suitable span by using "Queen Post Roof", Mangalore Tiles on the above "Timber Truss". Show the following in 1 : 20 scale.
    (i)    Sectional elevation of roof truss.
    (ii)    Any two details to a scale of 1 : 10.                                **(20 Marks)**

2    Write short notes on:
    a.  Lean-to-roof and its advantages with a neat sketch.                     **(05 Marks)**
    b.  Difference between collered roof and king post roof.                     **(05 Marks)**
    c.  Advantages of timber and steel roof truss.                              **(05 Marks)**
    d.  Methods of fixing G.I and aluminium roofing sheets using neat sketches.  **(05 Marks)**

### Module – 2

3    Write short notes on the following:
    a.  Explain the limitation of reinforced concrete constructions.            **(10 Marks)**
    b.  What are the advantages of reinforced concrete over other methods?      **(10 Marks)**

4    Write short notes on:
    a.  Mention different types of cement and its use in casting shapes.         **(10 Marks)**
    b.  What are the properties of concrete?                                     **(10 Marks)**

### Module – 3

5    Answer the following :
    a.  What are different grades of concrete and their uses?                    **(07 Marks)**
    b.  What are 'Admixtres' and its advantages?                                 **(07 Marks)**
    c.  Explain about Ready-Mix Concrete (RMC).                                  **(06 Marks)**

6    a.  What are 'Form works' and its need in R.C.C works?                      **(10 Marks)**
    b.  Explain in detail about the necessity of curing in concrete.            **(10 Marks)**

### Module – 4

7    a.  What are construction joints?                                          **(05 Marks)**
    b.  Explain the need of expansion joints and where they are required?       **(05 Marks)**
    c.  Explain the construction of 'Grillage foundation' and its advantages.   **(05 Marks)**
    d.  Explain with neat sketches differences between R.C.C column and wall foundations.
                                                                                **(05 Marks)**

8    a.  Design and draw an 'Architectural Single Flight Staircase' – Assume suitable dimensions and floor height to a suitable scale.                                   **(15 Marks)**
    b.  What are the different types of staircase and its advantages?           **(05 Marks)**

## Module – 5

9       Write short notes on: (with suitable sketches)
   a.   Folded plate staircase.                                              (05 Marks)
   b.   Spiral stair case.                                                   (05 Marks)
   c.   Methods and means of construction of brick staircase.                (05 Marks)
   d.   What are 'Composite staircases'?                                     (05 Marks)

10   a.   Draw and show 2 details of 'Steel Stair Case'. Assume appropriate dimensions.

                                                                             (10 Marks)
   b.   How do you use wood and concrete for staircase design and construction?   (10 Marks)

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