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

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 A Queen post roof truss is required for a 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.
- Partial Elevation to scale 1 : 25. (10 Marks)
  - Joints at Ridge and bearing 1 : 10. (10 Marks)

OR

- 2 A steel roof truss with M.S. Angles is proposed for a building of span 7.5 m, with aluminium roofing. Provide the following details:
- Partial elevation of truss to scale 1 : 25. (10 Marks)
  - Details at Ridge and bearing to scale 1 : 2. (10 Marks)

### Module-2

- Enumerate any five types of cements with their properties and uses. (10 Marks)
- What are the methods of proportioning concrete mixes? (10 Marks)

OR

- Explain any five types of quality tests of concrete. (10 Marks)
- What are various types of joints in concrete? Enumerate with sketches. (10 Marks)

### Module-3

- In what type of situations would you use combined footings? (10 Marks)
- Enumerate any two types of concrete combined footings with reinforcement details. (10 Marks)

OR

- 6 Explain any five types of chemical admixtures used in concrete. (20 Marks)

### Module-4

- 7 A straight flight wooden staircase is planned for a height of 2.4 m and 750 mm width. Provide the following with construction details and notes:
- Plan and section to scale 1 : 10. (20 Marks)

OR

- 8 A folded plate RCC staircase is required for a height of 3.0 m and 900 mm width:
- Design and draw plan and section to scale 1 : 10. (10 Marks)
  - Any relevant detail to scale 1 : 5. (10 Marks)

Module-5

- 9 Design and draw the following for a spiral staircase to reach a height of 2.1 m and radius of 700 mm:
- Plan and elevation to scale 1 : 10. (14 Marks)
  - Fixing detail of step to port to scale 1 : 2. (06 Marks)

OR

- 10 Design and draw with neat sketches and provide notes for the following:
- Concrete and wood.
  - Steel and glass.
  - Steel and timber.
  - Brick and stone. (20 Marks)

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