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## Second Semester B. Arch Degree Examination, June/July 2015

### Materials and Methods in Building Construction - II

Time: 4 hrs.

Max. Marks:100

- Note:** 1. Attempt 5 Full questions, Choosing ONE from each module.  
2. Use only Drawing sheets supplied for answering.  
3. Assume suitable data if necessary.

#### MODULE I

- 1 A verandah 2.8 m wide and about 5 long is to be provided with Lean to wooden roof finished with clay tiles laid over it. Draw to suitable scales.
- a) Key plan. (03 Marks)  
b) Enlarged part plan. (04 Marks)  
c) Section. (05 Marks)  
d) Any two details. (08 Marks)
- 2 Explain with neat sketches.
- a) King post truss (04 Marks)  
b) Queen post truss. (04 Marks)  
c) Collared roof. (04 Marks)  
d) Coupled closed roof. (04 Marks)  
e) Scissored roof. (04 Marks)

#### MODULE II

- 3 a. What are the ingredients of concrete? Kept in mind while ensuring quality? (12 Marks)  
b. What are the Tests for cement and their significance? (08 Marks)
- 4 Write short notes on:
- a) Water cement ratio. (04 Marks)  
b) Cover for reinforcements. (04 Marks)  
c) Types of cements and their uses. (04 Marks)  
d) Admixtures. (04 Marks)  
e) RMC. (04 Marks)

#### MODULE III

- 5 A column 200 × 200 has to be provided with an RCC footing 1500 × 1500 and 1350 deep. Assuming necessary diameters and spacing, Draw suitable scales –
- a) Plan. (06 Marks)  
b) Section. (06 Marks)  
c) Isometric view. (08 Marks)
- 6 Explain with neat sketches.
- a) Combined Footing. (04 Marks)  
b) Strip Footing. (04 Marks)  
c) Raft Footing. (04 Marks)  
d) Grillage foundation. (04 Marks)  
e) Construction and Expansion joints. (04 Marks)

**MODULE IV**

- 7** A stairway in Timber is to be provided in a show room to reach a height of about 400. Assuming suitable design and data draw to suitable scales.
- a) Plan. (04 Marks)
  - b) Cross section. (04 Marks)
  - c) Longitudinal section. (04 Marks)
  - d) Two enlarged details. (08 Marks)
- 8** Explain with neat sketches.
- a) Types of stairs. (05 Marks)
  - b) RCC waist slab step – stairs. (05 Marks)
  - c) Folded type stairs in RCC. (05 Marks)
  - d) Pre cast RCC stairs. (05 Marks)

**MODULE V**

- 9** A steel fire escape stairs in an apartment block in to fitted within a size of 4m width and 7m length, outside the building. Assuming the typical floor height to be 3150 (or any other suitable dimension) draw to suitable scales.
- a) Plan. (04 Marks)
  - b) Cross Section. (04 Marks)
  - c) Longitudinal Section. (04 Marks)
  - d) 2 enlarged details sketches. (08 Marks)
- 10** Explain with neat sketches
- a) Steel and wood composite stain. (06 Marks)
  - b) Composite stair using steel and RCC. (07 Marks)
  - c) Spiral stairs. (07 Marks)

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