

# CBCS SCHEME

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15ARC32

## Third Semester B.Arch. Degree Examination, Dec.2019/Jan.2020 Materials and Methods in Building Construction – III

Time: 4 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. All questions to be answered only on drawing sheets.*

### Module-1

- 1 a. Differentiate with sketches one way and two way slab. (05 Marks)  
b. Draw a plan, elevation and section, details of a roof slab for a room  $3 \times 6.0$  m supported on 230 mm thick walls. The thickness of a slab is 150 mm, plan, section (1:25) and details in (1:5) scale. (15 Marks)

OR

- 2 Draw a plan, sections (1:25) of a slapping roof slab for a room  $3.0 \times 6.0$  m consider the slab is resting on a frame structure with a beam all around measuring  $230 \times 450$  mm the roof has an overhang of 60 cm and thickness of the slab 150 mm details in (1:5) scale. (20 Marks)

### Module-2

- 3 a. Draw a section scale (1:25) and a detail (1:5) with reinforcement detail for the RCC segment dome having a diameter of 8m and height of dome is 2m. Assume the thickness of slab. (12 Marks)  
b. Explain the methods of construction of form work for a dome in detail. (08 Marks)

OR

- 4 a. Discuss the advantages and disadvantages of vaults and site where they are used. (06 Marks)  
b. Draw a plan, section (1:25) of a brick barrel vault roof for a room of size  $4\text{m} \times 12\text{m}$ . Sketch the detail of the form work. (14 Marks)

### Module-3

- 5 a. List out any 6 materials used for the flooring and factors affecting the choice of the flooring materials. (08 Marks)  
b. Design Wooden flooring for a living room measuring  $3.6\text{m} \times 3.3\text{m}$ . Draw plan (1:25) and detailed section showing the laying technique (scale 1:5). (12 Marks)

OR

- 6 Design and draw a plan of paving patterns for porch measuring  $3.0 \times 4.0\text{m}$  using following materials and sketch the laying detail.  
(i) Stone  
(ii) Concrete tile  
(iii) Interlocking block  
(iv) Clay tile (20 Marks)

### Module-4

- 7 a. What are the characteristics of a good paint? (08 Marks)  
b. Describe the process of painting a new wood work and metal surfaces. (12 Marks)

OR

- 8 a. Write the properties of distemper. (08 Marks)  
b. Describe the process of painting on plastered surface, new wood and metal surfaces. (12 Marks)

**Module-5**

- 9 Explain the process of plastering with details of materials used for an internal wall in:  
a. Cement plaster (10 Marks)  
b. Lime plaster (05 Marks)  
c. Plaster of Paris (05 Marks)

OR

- 10 a. What are the advantages and disadvantages of the alternative roofing system? (04 Marks)  
b. Draw the detail of the following with neat labeling (1:5) scale:  
(i) Jack arch roof for space measuring 3.0m × 4.0m.  
(ii) Madras terrace roof for a room measuring 4.0m × 5.0m. (16 Marks)

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