

CBCS SCHEME

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15ARC3.2

Third Semester B.Arch. Degree Examination, June/July 2019 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. Assume scale and dimension wherever necessary.*

Module-1

- 1 A hall measuring 9m × 6m having 230 mm thick wall all around, has to be provided with RCC roof, which is divided equally into 3 bays (on 9 m side), suggest and draw
- Key plan with justification of your suggestion
 - Enlarged part plan.
 - Enlarged cross-section of the bay
 - Part Isometric view.
- (20 Marks)

OR

- 2 A room having dimension 5m × 7m having 230mm thick wall all around a cantilever balcony of 1.5 m all along the shorter side, the roof and balcony has to be provided of RCC slab. Draw
- Key plan (03 Marks)
 - Enlarged plan showing reinforcements (06 Marks)
 - Cross section of cantilever slab (06 Marks)
 - Part Isometric view. (05 Marks)

Module-2

- 3 a. Explain with sketches the nature of stress developed in a vault and suggest 3 advantages and disadvantages of vault as roofing system. (05 Marks)
- b. Draw plan, section and suitable details of a RCC barrel vault roofing for a warehouse measuring 15m × 12m.
- Plan with reinforcement
 - Section
 - Details
- (15 Marks)

OR

- 4 a. Explain with neat sketches:
- Form work for column
 - Form work for Beam and roof slab. (10 Marks)
- b. Draw plan and section of a hemispherical masonry dome having diameter 8m (Use stone or concrete block 200 × 200 × 400 as masonry)
- Plan showing block arrangement
 - Section (10 Marks)

Module-3

- 5 a. Explain with neat sketches, the laying process of
- Wooden flooring
 - Marble flooring (10 Marks)
- b. Design a terrazzo flooring for a drawing room measuring 4m × 5m, draw plan and detailed section showing the laying technique. (10 Marks)

OR

- 6 a. Explain in detail the laying technique of paving. Also mention its types and selection criterias. (10 Marks)
- b. Design a soft paving (for garden) and a hard paving (for parking) using bricks or interlocking blocks. (10 Marks)

Module-4

- 7 a. Write brief notes on :
(i) Types of paints
(ii) Constituents of oil paints (10 Marks)
- b. Describe in detail the process of painting on new wooden surface. (10 Marks)

OR

- 8 a. Write brief notes on:
(i) Wax polishing
(ii) Types of varnish (10 Marks)
- b. Describe in detail the method of painting on a metal surface. (10 Marks)

Module-5

- 9 a. Explain in detail and support with neat sketches the method of cement plastering on external wall surfaces. (10 Marks)
- b. Give the detailed account of the tools used for plastering and precautions taken before and during the plastering. (10 Marks)

OR

- 10 A room measuring $4\text{m} \times 6\text{m}$ has to be roofed with Jack Arch roofing system draw,
- a. Key Plan (03 Marks)
- b. Enlarged layered plan (07 Marks)
- c. Section (05 Marks)
- d. View (05 Marks)
