

CBCS SCHEME

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15ARC3.2

Third Semester B.Arch. Degree Examination, Dec.2018/Jan.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. Use only drawing sheets supplied for answering all questions.**

Module-1

- 1 a. Differentiate between the pattern of "Cranking" for R.C.C two way and R.C.C one way slabs. Sketch to explain use need and pattern for cranking when any one of these slabs is to be treated as a "CONTINUOUS SLAB". (08 Marks)
- b. Draw the plan and sections showing all reinforcements for a R.C.C two WAY SLAB with a thickness of 150mm across a room of 10m × 6m. Use 1 : 50 scale. (12 Marks)

OR

- 2 a. Sketch and explain using plan and section, the reinforcement pattern when a room 7m × 7m is to have a "GABLE" sloping roof. Introduce a gutter at one of the end support beams of the sloping roof. The projection of the gutter shall be 45 cms. (10 Marks)
- b. Describe with sketches, the reinforcement pattern of a CONTINUOUS SLAB. Describe also what is "COUNTER WEIGHT". With neat sketches, the position for a wall 250cm × 23cm × 300cm. When only one R.C.C column of 30 cm dia is provided on the periphery of a round slab of 400cm dia. (10 Marks)

Module-2

- 3 Sketch the plan elevation and section to 1 : 50 scale showing reinforcement for an R.C.C dome that is hemispherical and of 9m dia. A ring beam of 23cm × 23cm serves to continue the roof further as a conical roof to achieve an overall diameter of 15m. The slope of the conical position is 45°. (20 Marks)

OR

- 4 a. Sketch the Grain Vault and the Gothic Vault suggest where you would like to introduce tie beams to ensure its stability. (08 Marks)
- b. Sketch to suggest the formwork to execute a segmental Vault for a rural house 3 m × 3m. Precast slabs of 1m × 1m may also be used. (12 Marks)

Module-3

- 5 Mention any three different materials used as a floor finish for a garage. Describe the different aspects to be considered while choosing the appropriate material. The floor is to continue as a ramp from inside to outside. (20 Marks)

OR

- 6 a. Explain the advantages and disadvantages of using spacers for granite flooring. What are the different materials you would suggest? (06 Marks)
- b. List the advantages/disadvantages of composite tile paver blocks. Design an interlocking paving tile with terracotta finish, for a garden lawn. Use a variation of "fish scale" pattern. Show how the tile may be used for a stage of 10m diameter floor, level with the lawn. (14 Marks)

Module-4

- 7 a. List the advantages of cement based paints. How after is water needed in the execution of the painting process? (10 Marks)
- b. Explain the constituents of oil based paints. List some of the special finishes that are possible using oil based points. (10 Marks)

OR

- 8 Explain the types of defects that appear on varnished and melamine finished wooden surfaces. How can they be avoided? Else explain the method of applying. (20 Marks)

Module-5

- 9 Explain the recommended conditions for use of the following finishes.
i) lime ii) cement iii) plaster of paris iv) red oxide. List the precautions to be taken while executing the above finishes. (20 Marks)

OR

- 10 Stone pieces are to be used as exterior cladding on a water cascading wall surface. Identify the possible maintenance problems and suggest precautionary measures. Also suggest the various finishes that the stone wall can take on if the opposite surface is part of an interior space. (20 Marks)
