

CBCS Scheme

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15ARC3.2

Third Semester B.Arch. Degree Examination, Dec.2017/Jan.2018

Materials and Methods in Building Construction – III

Time: 4 hrs.

Max. Marks: 100

- Note: 1. Answer FIVE full questions, choosing one full question from each module.
2. Use only drawing sheets.

Module-1

- 1 a. Differentiate with sketches one way and two way RCC slab. (05 Marks)
b. Draw the plan, section and details of a roof slab with a clear span of 3m×8m, supported on 230mm thick walls. The thickness of the slab is 150mm. Draw the plan and section in (1:25 scale), details in (1:5 scale) (15 Marks)

OR

- 2 Draw the plan, sections (scale 1:25) of a sloping roof slab for a room measuring 5m×6m. Consider the slab to be resting on a frame structure with a beam all around measuring 230×450mm the roof has an overhang of 60cm and thickness of the slab is 150 mm. Details to be drawn in (scale 1:5). (20 Marks)

Module-2

- 3 a. Explain with sketches the nature of stress in a spherical dome. (05 Marks)
b. Draw a section (scale 1:25) with reinforcement details for an RCC spherical dome having a diameter of 12m and height of 4m. Thickness of the dome is 100mm. Draw the details of reinforcement (scale 1:5). (15 Marks)

OR

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

Module-3

- 5 a. What are the functional requirements for internal flooring? (06 Marks)
b. Design wooden flooring for a living room measuring 3.6m×3.3m. Draw plan (scale 1:25) and detailed section showing the laying technique (scale 1:5). (14 Marks)

OR

- 6 a. Explain in detail the laying technique for any two types of flooring for indoor areas. State the advantages and disadvantages of each. (10 Marks)
b. Sketch the laying details for a paving using interlocking block, brick. (10 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. What is distemper? Explain the process of distempering a newly plastered surface. (10 Marks)
b. What are the advantages of application of varnishes? Explain the method of application of French polish. (10 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. Describe the process of wet cladding in stone. List out the advantages and disadvantages of wet cladding method. (10 Marks)
b. Briefly describe the construction of Jack arch flooring. Draw a Jack arch roof for a space measuring 3.6×4.2m. Draw the detail in (scale 1:5) with neat labeling. (10 Marks)
