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Fifth Semester B.Arch. Degree Examination, July/August 2022
Materials and Methods in Building Construction – V

Time: 4 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 An 'L' angle truss roof system is required for a building of size 12m × 20m. Draw the following construction details for suitable scale:
- Key plan. (05 Marks)
 - Sectional elevation of 'L' angle truss. (10 Marks)
 - Any 2 detail. (05 Marks)

OR

- 2
- Define truss. List the various types of steel trusses with sketches. (10 Marks)
 - List the various types of roofing materials that can be used for roof trusses. (10 Marks)

Module-2

- 3 A pre engineered building is required for an industrial building of 15m × 30m and has a clear height of 6m. Provide the following details:
- Roof plan – 1:100 (08 Marks)
 - Section showing portal frame – 1:100 (08 Marks)
 - Any 2 details – 1:10 (04 Marks)

OR

- 4 Write short notes with explanatory sketches for:
- Edge and valley beams and stiffening beams and archribs in waulted roof. (10 Marks)
 - Shell roofs. (10 Marks)

Module-3

- 5 Write short notes on:
- Hyperbolic parabola
 - Hyperboloid
 - Conoids
 - Folded plates. (20 Marks)

OR

- 6 Provide the construction details for an RCC folded plate roof for a building of size 25 × 30 × 6m height.
- Roof plan – 1:100 (08 Marks)
 - Section – 1:100 (08 Marks)
 - Gutter detail – 1:10 (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-4

7 Explain with neat sketches:

- a. Tensile structures (10 Marks)
- b. Pneumatic structures. (10 Marks)

OR

8 An exhibition space of 10m × 20m needs a space frame structure to be designed. Provide the following drawings.

- a. Roof plan – 1:100 (08 Marks)
- b. Section – 1:50 (08 Marks)
- c. Any 2 details – 1:5 (04 Marks)

Module-5

9 a. How waterproofing is done in following cases:

- i) Toilets ii) Basement. (10 Marks)
- b. Explain various construction chemicals used in buildings. (10 Marks)

OR

10 Write short notes on:

- a. Sealants
- b. Plaster of paris
- c. Gypsum
- d. Adhesive
- e. Fibre reinforced plastic. (20 Marks)

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