

# CBCS SCHEME

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15ARC5.2

## Fifth Semester B.Arch. Degree Examination, June/July 2018 Materials and Methods in Building Construction – V

Time: 4 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing one full question from each module.  
2. Assume suitable data/scale where not provided.  
3. Provide neat sketches and notes where required.*

### Module-1

- 1 a. What is Truss? Sketch Pratt, Howe, Fink and Fan trusses. (05 Marks)  
b. Draw the elevation of an angular truss for a span of 16.0m with A.C. sheet roofing showing relevant connection details to a scale of 1:50. (15 Marks)

OR

- 2 a. Explain with sketches parallel chord trusses. (05 Marks)  
b. Draw the elevation of a tubular truss for a span of 14.5 m with G.I. sheet roofing showing relevant connection details to a scale of 1:50. (15 Marks)

### Module-2

- 3 a. What is a Pre-engineered Building? (02 Marks)  
b. Draw to scale of 1:50, section of PEB of span 17.50 m, showing roofing and siding with M.S. sheets. (12 Marks)  
c. Show details at Ridge and Girt to scale of 1 : 10. (06 Marks)

OR

- 4 Write short notes enumerating the principle and sketch any one construction detail on:  
a. Pneumatic structures (07 Marks)  
b. Shell structures (06 Marks)  
c. Geodesic Domes. (07 Marks)

### Module-3

- 5 a. A folded plate roof is required for an industrial building of size 15.0m × 45.0 m with provision for sky-light. Draw roof plan to scale of 1:100 and section to scale of 1:50 showing reinforcement details. (12 Marks)  
b. Draw detail at gutter and diaphragm to scale of 1:10. (08 Marks)

OR

- 6 a. An RCC dome is proposed for a convention hall of size 17.5 m diameter. Draw roof plan to scale of 1 : 100 and section to scale of 1 : 50. Showing reinforcement details. (12 Marks)  
b. Draw details at gutter and skylight to scale of 1 : 10. (08 Marks)

### Module-4

- 7 a. Draw plan of space frame of size 16.0 m × 32.0 m to scale of 1 : 100 and section to scale of 1 : 50. (12 Marks)  
b. Enumerate any two types of connectors used in space frames. (08 Marks)

**OR**

- 8** For a tensile structure of size 18.0 m × 22.0 m × 8.0 m, draw the following :
- a. Roof plan to scale 1 : 100, section to scale 1 : 50. (12 Marks)
  - b. Sketch neatly any one fixing details. (04 Marks)
  - c. What are the materials used for roof covering of tensile structure? Enumerate their properties. (04 Marks)

**Module-5**

- 9**
- a. What are thermoplastics? Enumerate their properties. Explain any four types of thermoplastics. (12 Marks)
  - b. Explain any four types of construction chemicals, enumerating their properties. (08 Marks)

**OR**

- 10**
- a. What are solvent? Explain its functions and applications in building industry. (08 Marks)
  - b. Enumerate any four methods of water proofing terraces. (12 Marks)

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