

# CBCS Scheme

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15ARC5.2

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

## **Materials and Methods in Building Construction – V**

Time: 4 hrs.

Max. Marks: 100

**Note: Answer 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 :
- a. Sectional elevation of L-Angle Truss – 1:50 (10 Marks)
  - b. Gutter Detail – 1:5 (05 Marks)
  - c. Ridge Cap Detail – 1:5 (05 Marks)

**OR**

- 2 Provide the following construction details for a North light Truss system with lattice Girder for a building of size 16m×24m
- a. Roof plan - 1:100 (08 Marks)
  - b. Sectional view showing North light Truss -1:50 (08 Marks)
  - c. Gutter Detail at valley – 1:10 (04 Marks)

### Module-2

- 3 A Hall of size 12m×24m needs to be designed using a multi Bay Barrel vault system. Provide the following construction details :
- a. Roof plan – 1: 100 (08 Marks)
  - b. Section of vault Roof – 1:50 (08 Marks)
  - c. Detail of Gutter at Edge Beam – 1:10 (04 Marks)

**OR**

- 4 A pre – Engineered Building is required for an Industrial Building of 15m×30m and has a clear height of 6m. Provide the following details :
- a. Roof plan – 1: 100 (08 Marks)
  - b. Section Showing Portal Frame – 1:100 (08 Marks)
  - c. Detail showing fixing of Roofing – 1:10 (04 Marks)

### Module-3

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



OR

- 6 Write short notes with explanatory sketches and details of construction for :
- a. Geodesic Domes (10 Marks)
  - b. Hyperbolic paraboloid shell Roofs (10 Marks)

**Module-4**

- 7 An exhibition Installation of 20m×20m needs a space frame structure to be designed. Provide the following drawings :
- a. Roof plan – 1:100 (08 Marks)
  - b. Partial section (showing connectors) – 1:50 (08 Marks)
  - c. Connector Detail – 1:5 (04 Marks)

OR

- 8 a. What are the different types of Tensile Roofs? Explain the construction details with sketches. (10 Marks)
- b. Explain pneumatic structure and its principles with the help of sketches. (10 Marks)

**Module-5**

- 9 Explain the water proofing details with the help of explanatory sketches :
- a. Water proofing for Toilets (Sunken slab). (10 Marks)
  - b. Water proofing for French Drain system. (10 Marks)

OR

- 10 a. What are sealants? Explain its functions and applications in Building industry. (10 Marks)
- b. Write a brief note on plastics. Explain the types, its properties and uses in the Building Industry. (10 Marks)

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