

# CBCS SCHEME

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15ARC32

## Third Semester B.Arch. Degree Examination, Aug./Sept.2020 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. Assume suitable data/scale if required.  
3. Draw neat sketches whenever necessary.*

### Module-1

- 1 a. Design a RCC slab for a Room measuring  $3.6\text{m} \times 8\text{m}$  with the slab projection of  $0.6\text{m}$  on all four sides. The thickness of the slab is  $100\text{mm}$ . Draw following details.
- (i) Plan with the reinforcement details of slab (1:25 scale) (06 Marks)
  - (ii) Section with reinforcement detail of slab (1:25 scale) (04 Marks)
  - (iii) Detail (1:05 scale) (04 Marks)
- b. Write short notes on :
- (i) One way continuous slab
  - (ii) Cantilever slab
  - (iii) RCC slope roof. (06 Marks)

### OR

- 2 a. Design a RCC slop roof for a room measuring  $3.6\text{m} \times 7\text{m}$  with slab projection of  $0.6\text{m}$  on all sides. The thickness of the slab is  $125\text{mm}$ . Draw the following details:
- (i) Plan with reinforcement details of slab (1:25 scale)
  - (ii) Section with reinforcement details of slab (1:25 scale)
  - (iii) Details (1:05 scale) (14 Marks)
- b. Write short notes on :
- (i) Grades of concrete
  - (ii) Steel reinforcement
  - (iii) Two way slab. (06 Marks)

### Module-2

- 3 a. Design a RCC semicircular vault for a hall measuring  $5\text{m} \times 10\text{m}$  and the thickness of the slab is  $100\text{mm}$ . Draw the following details :
- (i) Plan with reinforcement details of RCC vault (1:25 scale)
  - (ii) Section with reinforcement details of RCC vault roof (1:25 scale)
  - (iii) Any two details (15 Marks)
- b. Write short notes on Domes. (05 Marks)

### OR

- 4 a. Design hemispherical dome having a diameter of  $6\text{m}$ . Draw following details
- (i) Plan showing reinforcement details of dome (1:25 scale)
  - (ii) Section showing reinforcement details of dome (1:25 scale)
  - (iii) Any two details (15 Marks)
- b. Write short notes on RCC vaults. (05 Marks)

**Module-3**

5 Write short notes on :

- a. Cobber stone paver
- b. Ceramic tiles
- c. Brick pavers
- d. Wooden flooring
- e. Terrazzo floorings.

(20 Marks)

OR

- 6 a. Design a concrete interlocking pavers pattern for a pathway of 3m (width) × 18m (length) provide curb stone on either side of the layer length. Draw following details:  
(i) Plan (1:25 scale) (ii) Section (1:25 scale) (iii) Details of edge condition (12 Marks)
- b. Explain in detail the different natural stones used for the flooring. (08 Marks)

**Module-4**

- 7 a. What are the ingredients of varnish? Describe briefly each of them. (10 Marks)
- b. What are the causes of a failure of a paint job? What are the usual defects which are found in the painting works? (10 Marks)

OR

8 Write short notes on :

- a. French polish
- b. Emulsion paint
- c. Distemper
- d. Melamine polish
- e. Enamel paint

(20 Marks)

**Module-5**

- 9 a. Describe the process of external plastering work, using cement mortar. (10 Marks)
- b. Explain the process of toilet cladding work. (10 Marks)

OR

- 10 a. Describe the various defects in plastering work. (10 Marks)
- b. Explain with the help of neat sketches jack arch roof construction. (10 Marks)

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