

# CBCS SCHEME

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## Third Semester B.E. Degree Examination, Dec.2023/Jan.2024 Building Materials and Construction

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the various natural agents responsible for deterioration of stones and different treatment methods adapted to preserve the stone work. (10 Marks)
- b. State the qualities of a good timber. (04 Marks)
- c. Explain the working of Pug mill with the help of a neat sketch. (06 Marks)

OR

- 2 a. State the characteristics of good clay bricks. (06 Marks)
- b. What is bulking of sand? How does it affect concrete mix? (04 Marks)
- c. Explain the following tests conducted on coarse aggregates.  
(i) Aggregate impact value test  
(ii) Specific gravity test. (10 Marks)

### Module-2

- 3 a. Sketch the elevation and plan of (1, 3, 5 and 2, 4, 6 courses) of one brick thick English bond in brick masonry. (06 Marks)
- b. Explain cramped joint and plugged joints used in stone masonry with the help of neat sketches. (06 Marks)
- c. Explain the construction of strap footing with the help of a neat sketch. Also mention the situation where it is used. (08 Marks)

OR

- 4 a. List the different types of partition walls and also explain Brick nogging partition wall with the help of a neat sketch. (10 Marks)
- b. State the functions of foundations. (06 Marks)
- c. List any four situations in which the pile foundation is preferred. (04 Marks)

### Module-3

- 5 a. Draw a neat sketch of segmental arch and label the components. (04 Marks)
- b. Draw a neat sketch of king post truss and label the components. (08 Marks)
- c. Define the following elements of pitched roof :  
i) Purlin    ii) Pitch    iii) Truss    iv) Common rafter. (08 Marks)

OR

- 6 a. Explain the procedure of laying vacuum dewatered flooring. (04 Marks)
- b. Draw a neat sketch of steel roof truss and label the components. (06 Marks)
- c. What is a lintel? Explain the following types of lintels with the help of neat sketches:  
i) R.C.C lintel with chajja projection  
ii) Steel lintel. (10 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 a. With the help of a neat sketch, explain the salient features of framed and paneled door (double shutter). (08 Marks)
- b. Plan a dog legged stair for a building in which the vertical distance between the floors is 3.5 mts. The stair hall measures 3m × 5m. (08 Marks)
- c. Explain French window with the help of a neat sketch. (04 Marks)

**OR**

- 8 a. What is scaffolding? Explain the component parts of scaffolding. (08 Marks)
- b. State the three thumb rules followed to decide the dimensions of a step and common size of steps adapted for residential buildings. (04 Marks)
- c. With the help of a neat sketch, explain collapsible steel door. (08 Marks)

**Module-5**

- 9 a. Explain the procedure of painting new wooden and steel surfaces. (10 Marks)
- b. What is pointing? Sketch and explain the following types of pointings:
- (i) Flush pointing
  - (ii) Struck pointing
  - (iii) V-pointing
  - (iv) Weathered pointing. (10 Marks)

**OR**

- 10 a. What are the requirements of an ideal material for damp proofing? (06 Marks)
- b. With the help of a neat sketch, explain the procedure of applying cement plaster in 2 coats. (06 Marks)
- c. Explain the different defects that may occur in a painting work. (08 Marks)

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