

B.E. / B.Tech. Civil Engineering (Model Curriculum) Semester-IV  
**PCCCE401 / PCC-CE401 - Building Construction and Material**

P. Pages : 2

Time : Three Hours



**GUG/S/25/13715**

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Assume suitable data wherever necessary.
  4. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) What are the various methods of improving bearing capacity of soil. 8
- b) Explain various types of shallow foundation with the help of neat sketches. 8

**OR**

2. a) Design a isolated stepped footing for a brick pillar  $30\text{cm} \times 30\text{cm}$ , carrying a superimposed load of 250 kN at its top. The height of the column above ground level is 3.5 m. The brick masonry weight  $19.5\text{kN/m}^2$ . While the lime concrete to be used in the base weights  $21\text{kN/m}^3$  the soil has angle of repose of  $30^\circ$  unit weight of  $17\text{kN/m}^3$  and safe bearing capacity of  $160\text{kN/m}^2$ . The foundation concrete has modulus of rupture  $150\text{kN/m}^2$ . 10
- b) Differentiate between load bearing structure and frame structure. 6
3. a) Enlist the various test to be carried out on bricks. Explain the procedure to find out compressive strength of brick. 8
- b) What are the essential feature of English Bond? Draw a elevation and plan showing alternate courses of one brick thick wall in English bond. 8

**OR**

4. a) Describe following terms used in brickwork with suitable sketches: 8
- 1) King Closer
  - 2) Bevelled Bat
  - 3) Bull nose Brick
  - 4) Queen Closer
- b) What are the advantages and disadvantages of precast construction? 8
5. a) Enlist the various Rubble and Ashler stone masonry. Describe type of Rubble Masonry. 8
- b) Write short notes on Lintels & Arch. 8

**OR**

6. a) What are the different type of floor finishes. Explain each in brief. 8
- b) What are the different types of flooring materials? Explain any one. 8
7. a) Describe in brief various types of roof covering used for pitched roofs. 8
- b) What are the types of thermal insulation materials available in market? Explain in brief. 8

**OR**

8. a) A stair hall of public building which measure 5 m × 4.5 m the vertical distance between the floor is 3.9 m design suitable stair for the building and draw a sketch. 10
- b) What are the different types of doors. Explain any one. 6
9. a) What are causes and effects of dampness. 8
- b) Write short notes on pointing defects in plastering work. 8

**OR**

10. a) What are the types of wall paints write down stepwise procedure of colour washing. 8
- b) What do you understand by scaffolding? Explain double scaffolding. 8

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