

Faculty of Engineering & Technology
Fourth Semester B.E. (Civil Engineering) (C.B.S.)

Examination

BUILDING CONSTRUCTION AND MATERIALS

Paper-I

[Time—Three Hours]

[Maximum Marks—80]

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
 - (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.
 - (5) Solve all questions.
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1. (a) Enumerate the various types of shallow foundations for buildings. Discuss briefly where each type is suitable. 7
 - (b) Describe with sketches the method of setting out foundation trenches. 7
- OR**
2. (a) Design the foundation for brick pillar 400mm × 400mm to carry axial load of 80kN. Safe bearing capacity of soil is 60 kN/m². The angle of repose is 25° and the weight of the soil is 16 kN/m³. Draw a neat dimensioned sketch. 8

- (b) Discuss the causes of failure of foundation. How one can prevent such failures ? 6
3. (a) What are the requirements of good bricks (As per IS Specification) ? 6
- (b) What is a cavity wall ? Discuss its construction with its merits and demerits. 7

OR

4. (a) Explain tests conducted on bricks. 6
- (b) What do you mean by reinforced brick masonry ? State where this type of masonry is provided. 7
5. (a) What are the harmful effects of dampness in a building ? 6
- (b) Explain, with sketches, various types of joints used in stone masonry. 7

OR

6. (a) What is the function of lintels and arches ? Discuss the commonly used types of lintels and arches. 6
- (b) Enumerate the points to be observed during stone masonry work. 7
7. (a) Draw a queen post truss and mention span. Give different names of members and dimensions. 7
- (b) Explain with the help of sketches, the IPS flooring. 6

OR

8. (a) What are the various types of roof covering materials commonly used for pitched roof ? Explain briefly. 7
- (b) Explain in brief the factors that affect the selection of floors finish. 6

9. (a) Classify, with the help of sketches, various types of windows based on their method of operation. 7
- (b) Discuss the various considerations that are to be made while planning of staircase. Illustrate the different types of staircase generally used. 7

OR

10. (a) Explain with sketches, the following types of doors :
- (i) Collapsible door
 - (ii) Revolving door
 - (iii) Sliding door. 6
- (b) Plan a staircase for the residential building in which vertical distance between each floor is 3.6 meter. The size of stair hall is limited to 4.7m × 2.2 meter. Draw dimensioned plan of staircase. 8
11. (a) Distinguish between plastering and pointing. What are the different types of pointing. 7
- (b) What is scaffolding ? Explain Brick-Layer's scaffolding with neat sketch. 6

OR

12. (a) What are the good requirements of paints ? 7
- (b) Explain in detail, the stages of underpinning. 6