



**NTK/KW/15/7355**

**Faculty of Engineering & Technology**

**Fourth Semester B.E. (Civil Engg.) (C.B.S.)**

**Examination**

**BUILDING CONSTRUCTION AND MATERIALS**

**Time : Three Hours]**

**[Maximum Marks : 80**

1. (a) Define Shallow foundation. Describe any four types of shallow foundations with their suitability criteria. 8

(b) What precautions are to be taken during the construction of foundation on BC soil? 6

OR

2. (a) Design a strip footing for a brick wall 30 cm thick and 3.5 m high above ground level. The wall carries a superimposed load of 120 kN per meter run. The soil unit weight is 17 kN/m<sup>3</sup>. Angle of Repose is 30° and safe bearing capacity is 160 kN/m<sup>2</sup>. The footing is of lime concrete base having unit weight 20 kN/m<sup>3</sup> and modulus of rupture 160 kN/m<sup>2</sup>. Take the unit weight of masonry as 19.5 kN/m<sup>3</sup>. Draw the sketch. 8

(b) Differentiate Load Bearing and Framed Structure. 6

3. (a) Explain English and Flemish Bond. State why English Bond masonry is usually adopted than Flemish Bond Masonry. 7

(b) Explain the following terms :—

(i) Corbels

(ii) Copings

(iii) Closer Bricks. 6

OR

4. (a) Explain the construction of Cavity Wall with neat sketch. Also state briefly its advantages and disadvantages. 7

(b) Discuss the Hollow Cement Concrete Block Masonry. 6

5. (a) Discuss various types of Stone masonry. 7

(b) Draw a neat sketch of an Arch and explain the following terms :

(i) Keystone

(ii) Intrados and Extrados

(iii) Spandrel. 6

OR

6. (a) Enumerate the causes and effects of dampness into the structure. Briefly explain how to prevent the dampness. 7

(b) Discuss the objects of providing lintels. Explain RCC Lintel. 6

7. (a) Bring out the good requirements of a floor. 6

(b) Describe various types of Pitched Roof. 7

OR

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(Contd.)

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8. (a) Explain the construction of IPS flooring. 6  
(b) Enumerate various types of Roof Covering materials. 7
9. (a) A staircase hall of a public building measures 4.25 m × 5.25 m. The vertical distance between the floors is 3.9 m. Design a suitable stair for a building and draw a neat sketch of the same. 8  
(b) Explain Collapsible Door with neat sketch. 6

**OR**

10. (a) Describe the following with neat sketch :  
(i) Bay Window  
(ii) Dormer Window. 7  
(b) Discuss the ideal requirement for locating stair in the building. 7
11. (a) What are the precautions to be taken before plastering the new surface ? 6  
(b) Discuss different types of shorings. 7

**OR**

12. Write short notes on :— 13  
(i) Underpinning  
(ii) Defects in Painting  
(iii) King Post Truss.