B.E. Civil Engineering (CBCS Pattern and Old) Sem-IV

4BECE006 / CE-406 : Building Material and Construction

P. Pages : 2 **GUG/S/19/11906**

Time : Three Hours * 3 6 9 8 * 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.
5. Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted.

1. a) What is bearing capacity of soil? Explain plant load test to find bearing capacity of soil. **7**

b) Design the foundation for a stone pillar 40x40 cm carrying a superimposed load of 300 kN at its top. The height of pillar above the ground level is 3.5. Take unit weight of stone masonry as 22.5 kN/m^3 and that of lean cement concrete as 23 kN/m^3. The soil has angle of repose of 25º, unit weight of 18 kN/m^3 and SBC of soil is 150 kN/m^2. The foundation concrete may be in 1 : 4 : 8 having safe modulus of rupture equal to 245 kN/m^2. **9**

OR

2. a) Explain with the help of sketches, various type of shallow foundation. **9**

b) What are the various methods of improving bearing capacity of soil. **7**

3. a) Write a note on "Brick - Nogging". **5**

b) Compare Flemish Bond with English bond? **6**

c) What are the various test conducted on bricks? **5**

OR

4. a) Classify various types of stone masonry. Draw typical sketches to illustrate the same. **8**

b) Explain with sketches, various type of joints used in stone masonry. **8**

5. a) Describe with a neat sketch "King past truss". **6**

b) What are the ideal requirement of material to be considered for Flooring construction. **7**

c) Compare upper floors with Ground floors. **3**

OR

6. a) With a neat sketches, explain various types of pitched roof that are commonly adopted in India. **8**

b) What are the advantages and disadvantages of pitched and flat roofs? **4**

c) Explain "Terrazzo Flooring". **4**

7. a) A stair ball of public building which measures 4.30m × 5.50m. The vertical distance between the floor is 3.9 m. Design the suitable stair for the building and draw a neat sketch showing its sectional elevation. **9**

b) What are ideal requirement of a staircase. **7**

OR

8. a) What are different types of doors used in building? Draw a sketch of a 6 Panelled partly glazed door and name different parts of it. **10**

b) Describe with neat sketches the following **6**
i) Bay Window ii) Dormer Window.

9. a) Explain various methods of damp proofing.

b) Write a note on.
i) white washing ii) Distempering.

c) What are the defects in plastering?

OR

10. a) What do understand by "Under - pinning"? When do you require it. **6**

b) Differentiate between plastering and pointing. **4**

c) Describe in brief various types of shores. **6**

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