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10CV32

**Third Semester B.E. Degree Examination, Dec.2017/Jan.2018**  
**Building Materials and Construction Technology**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. What are the functions of foundations? (05 Marks)  
 b. Explain the causes for foundation failures. (05 Marks)  
 c. Design a rectangular combined footing for columns A and B spaced at 3200 mm c/c for the following data:  
 Column A : 230 × 450 mm carries an axial load 1200 kN.  
 Column B : 230 × 600 mm carries an axial load 1800 kN.  
 Restrict the width of footing to 3200 mm. SBC of soil is 180 kN/m<sup>2</sup>. (10 Marks)
- 2 a. Using sketches explain the terms:  
 i) Queen closer  
 ii) Quoin header  
 iii) Stretcher course  
 iv) Header course applied to brick masonry. (06 Marks)  
 b. What do you understand by reinforced brick masonry when do you use it? (04 Marks)  
 c. What are the types of joints used in stone masonry? Describe any four joint with neat sketch. (10 Marks)
- 3 a. What are the classifications of arches according to shapes? Explain any four in brief. (10 Marks)  
 b. Why the following are used and mention where they are provided in a building:  
 (i) Lintels (ii) Chejja (iii) Canopy (iv) Balcony. (10 Marks)
- 4 a. State the essential requirements of a good roofs and compare the merits and demerits of flat and pitches roof. (10 Marks)  
 b. Explain mosaic flooring and polished granite flooring. (10 Marks)

**PART – B**

- 5 a. What type of doors you suggest for the following building? Draw sketches of the same:  
 i) House ii) Restaurant iii) Godown iv) Offices (10 Marks)  
 b. Explain with sketches: i) Bay window, ii) Dormer window. (10 Marks)
- 6 a. Design a dog legged stair case for a room of size 2.5m × 5.5m for a floor height of 3.0 m. Draw a neat sketch of plan of a stair. (10 Marks)  
 b. Define following terms:  
 i) Flight ii) Pitch iii) Baluster iv) Newel port v) Head room (10 Marks)
- 7 a. What are the objects of plastering the surfaces? Briefly explain stucco plastering. (10 Marks)  
 b. Explain the constituents of paints and their function. (10 Marks)
- 8 Write short notes for the following:  
 a. Under pinning b. Form work details for RCC columns  
 c. Causes of dampness d. Scaffolding (20 Marks)

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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.