B.Tech. Civil (Construction Management) / (BTCLEVI)

Term-End Examination

00362   December, 2016

ET-521(A) : PLANNING AND CONSTRUCTION OF BUILDINGS

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt any* **five** *questions. All questions carry equal marks. Use of calculator is allowed.*

1. A plot of land measuring 12 m × 24 m has the front road 8·50 m wide facing North. Service lane is on the rear, measuring 4·50 m.
   Prepare a suitable plan of a 2-bedroom residential building as per local municipality bye-laws as maximum covered area to be 70% of the total plot area with minimum set back of 3 m in front and 3 m on the rear of the house.   *14*

2. (a) Describe briefly the various steps involved in the planning process of a building.   *7*

   (b) Explain the different classifications of materials with regard to their resistance to fire.   *7*

3. (a) A stair is to be located for an office building in a staircase hall measuring 4·55 × 5·2 m. The vertical distance between the floors is 4 m. Draw a dimensioned plan of the proposed stair. Explain the design principles also. *10*

(b) Draw typical sketches, with dimension and labelling, for a column footing. *4*

4. (a) Describe the purpose of providing bonds in brick-work. *6*

(b) Explain various points considered for deciding the locations of doors in a room. Draw a neat sketch of a door frame. *8*

5. (a) Explain the importance of ventilation in a building. What are the different types of ventilators? *7*

(b) Explain the different types of pavings used in a courtyard. Support your answer with neat sketches. *7*

6. (a) Describe briefly the Rural Sanitary Latrine giving a neat sketch. *6*

(b) Explain the different materials used to clad the external walls of any building. What are the components of oil based paints? *8*

7. (a) Discuss the influence of orientation of a building on thermal comfort. What are the different kinds of thermal insulation? 8

   (b) Explain Acoustic Insulation. What are various acoustic materials used and how are they painted? 6

8. Write short notes on any *four* of the following: $4 \times 3\frac{1}{2} = 14$

   (a) English and Flemish Bond
   (b) Battened and Ledged Doors
   (c) Reinforced Brick Masonry
   (d) Raft Foundation
   (e) Hinged and Pivoted Window
   (f) Classification of Buildings

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