Diploma in Civil Engineering / Diploma in Electrical and Mechanical Engineering

Term-End Examination

June, 2006

BCE-025 : ELEMENTARY CIVIL ENGINEERING

Time : 2 hours   *Maximum Marks : 70*

Note :   Answer **all** questions. All questions carry equal marks.

1. (a) Fill in the blanks :   *7×1=7*

    (i) A building which is used for sale and display of products, either wholesale or retail is called as _____ .

    (ii) _____ is a lubricant in concrete mix.

    (iii) The vertical compression member in a building is known as _____ .

    (iv) _____ is a depression cut in the frame to receive the door shutter.

    (v) To facilitate draining off rain water from sun-shade, a groove is cut, which is called as _____ .

(vi) _____ is the enclosure provided for servicing and doing repairs of the aircraft, in an airport.

(vii) The maximum load per unit area, which a soil can resist safely is called as _____ of soil.

(b) State whether the following statements are true or false : 7×1=7

(i) The width of a taxiway is always much lesser than the runway width.

(ii) If more than half of the coarse fraction is smaller than 4·75 mm sieve size, the soil is termed as gravel.

(iii) In English bond, a header course should never start with a queen closer, as its position may get displaced.

(iv) Strength of concrete depends upon the quality of its ingredients.

(v) The size of a rivet is represented by the diameter of its shank.

(vi) Segregation is the property of concrete in its hardened stage.

(vii) Dormer window is a vertical window built in the sloping side of a pitched roof.

2. Answer any **two** of the following :   2×7=14

   (a) Explain in brief the field identification tests for coarse-grained soil.

   (b) State the methods for improving the bearing capacity of soil.

   (c) Explain in brief the soil phases.

3. Answer any **two** of the following :   2×7=14

   (a) Name the properties of concrete in plastic stage. Explain any one.

   (b) What is bulking of sand ? Why is this test necessary ?

   (c) Write a short note on riveted connection.

4. Answer any **two** of the following :   2×7=14

   (a) Write a note on the importance of road drainage. What are the different types of road drainage ?

   (b) Explain in brief the construction of concrete roads.

   (c) What are the various components of an airport ? Explain what you mean by runway and taxiway.

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

   (a) Rubble masonry

   (b) Flemish bond (1-brick wall)

   (c) English bond (one-brick wall)

   (d) Ashlar masonry

   (e) Bearing capacity of soil

   (f) Types of doors