Diploma in Electrical and Mechanical Engineering

Term-End Examination

June, 2007

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) The part of the structure, which is above the ground level is called as _____ .

(ii) Distance between the inner faces of the rails in a narrow gauge railway track is _____ .

(iii) Compressive strength of concrete is measured in _____ .

(iv) A rivet consists of a head and a _____ .

(v) _____ is the vertical face of a window or door opening which supports the frame.

(vi) Marble flooring is commonly used for _____ building.

(vii) The primary function of a _____ is to provide an enclosure for servicing and repairs of the aircrafts.

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

(i) The bearing capacity of soil goes on decreasing as the depth of foundation increases.

(ii) Geodetic surveying is that type of surveying in which the spheroidal shape of the earth is taken into account.

(iii) Vibrator of concrete should be penetrated in vertical direction.

(iv) The structural member carrying compressive load in a truss is called as tie.

(v) Windows should not be located opposite to each other wherever possible.

(vi) The system of collection and disposal of surface water within right-of-way of a road is called surface drainage.

(vii) The timber to be used for flooring should not be well-seasoned.

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

(a) Enlist the disciplines of civil engineering. Explain in brief geotechnical engineering.

(b) Define substructure and superstructure. Draw the labelled sketch to show the basic parts of a building.

(c) What is meant by bearing capacity of soil ? Explain in brief the methods of improving bearing capacity of soil.

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

(a) What is meant by concrete ? What are the advantages and disadvantages of concrete ?

(b) State the classification of stone masonry. Explain in brief stretcher and header bond.

(c) What do you know about ISJB and ISLC ? Draw the sketches of lap joint and butt joint in a rivetted connection.

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

(a) Draw a dimensioned sketch of a battened, ledged and braced door.

(b) Explain with sketch clerestorey window.

(c) Enlist the different types of flooring. Explain any one.

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

(a) Workability of concrete

(b) Soil as a three-phase system

(c) Supervision of brick masonry

(d) Construction procedure of plastering

(e) Airport layout

(f) Road structure