Diploma in Civil Engineering / Diploma in Electrical & Mechanical Engineering

Term-End Examination

June, 2006

BCE-024 : CONSTRUCTION TECHNOLOGY – I

Time : 2 hours *Maximum Marks : 70*

Note : *Question no. 1 is **compulsory**. Attempt any **four** more questions out of Questions No. 2 to 7. All questions carry equal marks. Explain your answers with the help of neat and labelled sketches.*

1. Choose the correct alternatives : 2×7

(a) In the case of combined footings the following condition should be satisfied :

(i) CG of the column loads must coincide with the CG of the footing.

(ii) CG of the column loads need not necessarily coincide with that of the footing.

(iii) Width of the footing must be uniform.

(iv) Depth of footing can vary

(b) Pile foundations are normally used

(i) in soft clayey soils

(ii) in heavy-load situations

(iii) when the bearing area required is not available

(iv) in loose sandy soils

(c) Masonry-retaining walls must be designed for

(i) Structural stability

(ii) Ultimate capacity

(iii) Static stability

(iv) Uplift force

(d) A thickened portion of a masonry wall is called

(i) Pillar

(ii) Pilaster

(iii) Buttress

(iv) Leaf wall

(e) The horizontal projections at head and sill of a door frame which are embedded into the side walls for fixing the frame are known as

(i) horns

(ii) hold fasts

(iii) jambs

(iv) rebates

(f) The type of arch generally constructed over a wooden lintel or over a flat arch for the purpose of carrying the load of the wall above is

(i) segmental arch

(ii) pointed arch

(iii) relieving arch

(iv) flat arch

(g) The type of flooring suitable for use in churches, theatres, public libraries and other places where noiseless floor covering is desired is

(i) cork flooring

(ii) glass flooring

(iii) wooden flooring

(iv) linoleum flooring

2. (a) Under what circumstances would you adopt pile foundations ? Explain the features of such a foundation. 7

(b) Describe the design of a wall footing. 7

3. (a) What do you mean by lintels ? Explain in brief the various types of lintels used in masonry construction. 7

(b) Explain the various ways in which an arch fails. 7

4. (a) How will you ensure water proofing of residential buildings constructed in localities where water table rises quite high during the monsoon season ? 7

(b) Describe the various factors based on which a particular type of floor construction is adopted. 7

5. (a) Explain the various points to be kept in mind while designing of windows in a room. 7

(b) Classify various types of doors based on working operations. Explain revolving door with the help of a diagram. 7

6. Differentiate between the following : $4\times3\frac{1}{2}$

(a) Superstructure and Substructure

(b) Solid core type and Cellular core type flush doors

(c) Random rubble and Coursed rubble stone masonry

(d) Lintel and Arch

7. Write short notes on the following : $4\times3\frac{1}{2}$

(a) Essential requirements of foundation

(b) Defects in brick work

(c) Damp-proof course

(d) Asphalt flooring