No. of Printed Pages : 4 + Drawing Sheet

BCE-045

00474

Diploma in Civil Engineering DCLE (G)
DCLEVI
Term-End Examination

June, 2013

BCE-045 : CONSTRUCTION DRAWING

Time : 2 hours *Maximum Marks : 70*

Note : ***Part 'A'*** *is to be attempted on answer script and* ***Part 'B'*** *on drawing sheet. Use of calculator is* ***allowed.*** *Assume suitable data wherever necessary*

PART - A

Attempt **any five** questions from the following :

1. Mention the various designations of the standard sizes of drawing sheets along with their dimensions. Explain the principle involved in fixing these sizes. 7

2. Give the symbols for the following : 7
   (a) Brick work in section
   (b) Concrete
   (c) Glass
   (d) Bracket Fan
   (e) Two Way Switch
   (f) Shower Head
   (g) Urinal Stall

3. What are the main considerations for fixing the depth of foundation below ground ? 7

4. Under what circumstances a combined rectangular footing without beam is provided ? Sketch the details of reinforcement of such a footing. 7

5. Why are wooden widening joints required and where are these joints used ? Explain them by means of neat sketches. 7

6. Mention the various types of stair cases and explain any one type by means of neat sketches in plan and elevation. 7

7. Show by means of line diagrams the various types of steel roof trusses 7

8. Show by means of neat sketches the typical details of two way slab flooring. 7

PART - B

Attempt question **No.9** which is **compulsory** and **any one** question from the remaining. Adopt suitable scale.

9. Prepare the structural drawing for the foundation of a brick masonary external wall with lime concrete base. The design data is given below : 15

Thickness of wall = 250 mm
Width of footing = 1.500 m
Depth of footing below G.L = 1.250 m
Plinth level above G.L = 0.5 m.

10. A combined rectangular footing with a strap beam for two R.C.C columns of size 300 mm × 300 mm carries equal loads and are spaced 4 m centres apart. The design data is given below.

- Size of the footing 1.5 m × 6.0 m
- Overall depth of footing = 300 mm
- Main tensile reinforcement of the footing = 10 ϕ HYSD bars @ 200 mm c/c
- Distribution reinforcement of the footing = 8 ϕ HYSD bars @ 200 c/c
- Overall depth of beam = 600 mm
- Width of beam = 400 mm
- Tensile reinforcement of the beam = 4 Nos. - 22 ϕ HYSD bars
- Tensile reinforcement in the cantilever portion of the beam = 2 Nos. - 22 ϕ HYSD bars

- Shear reinforcement throughout the beam $= 8\ \phi - 4$ legged stirrup @ 250 mm c/c

Prepare the structural drawing for the combined rectangular footing as mentioned below :

(a) Longitudinal section of the strap beam. **10**

(b) Cross section of the footing **10**

11. A double leaf fully glazed window of size 0.90 m × 1.2 m is provided in the Bed Room of the residential apartments. Prepare the following.

(a) Elevation of the fully glazed window. **12**

(b) Sectional plan of fully glazed window. **8**