No. of Printed Pages : 4 + Drawing Sheet

BCE-045

Diploma in Civil Engineering

Term-End Examination

December, 2011

02642

BCE-045 : CONSTRUCTION DRAWING

Time : 2 hours *Maximum Marks : 70*

Note : ***Part 'A'*** *is to be attempted on answer script and* ***Part 'B'*** *on a drawing sheet. Use of scientific calculator is allowed.*

PART-A

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

1. (a) Which types of Drawings are required for construction of a structure. Explain any one. **3½**

(b) Show the different formats of dimensioning for angular and radial dimensions on a drawing. **3½**

2. Give the symbols for the following : **7x1=7**

(a) One way switch

(b) Bell push

(c) Concrete

(d) Channel section

(e) WC Indian

(f) Ground level

(g) Glass

3. Show by means of neat sketch the reinforcement details of a simple two way slab. 7

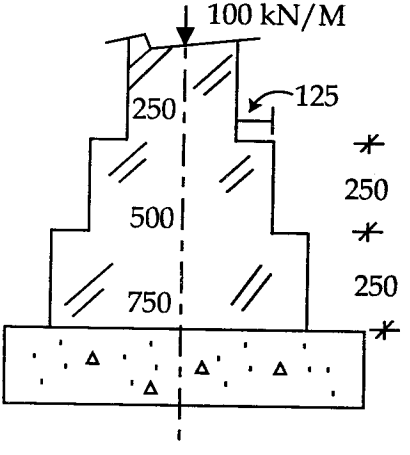
4. Name the types of wooden lengthening joints used in common and where are they used ? Explain any one such type of joint by neat sketches. 2+5

5. Show by a neat sketch sectional plan and elevation of a double leafed fully glazed steel window 1.0 m in width. 7

6. (a) What are the methods of protection of reinforced concrete structures against sulphate and chloride attacks. 3½

   (b) Explain as to why thin shells and domes are called stressed skin structures ? 3½

7. Design the lime concrete footing for a 250 mm thick wall carrying a load 100 kN/m run. Safe Bearing capacity of soil = 110 kN/m^2 Angle of repose = 28°, unit wt. of soil = 17 kN/m^3. 7



PART - B

Attempt Question No. 8 which is **compulsory** and ***any one*** question from remaining. Adopt suitable scale.

8. Prepare the working drawing for the foundation of a brick masonry wall with cement concrete base. Design datas are as under. **10**

- Thickness of wall = 345 mm
- Depth of foundation below GL = 1.20 m
- Width of footing = 1.60 m
- Plinth level above GL = 0.50 m

9. (a) A doubly reinforced rectangular beam is provided over a Gate of size 3.5 m x 2.0 m clear. Draw the longitudinal section and cross section of the beam by following datas. **10**

Clear span of the beam = 3.50 m

Overall depth of beam = 300 mm

Width of beam = 250 mm

Tension reinforcement 4 bars of 16 ϕ HYSD

Compression reinforcement 3 bars of 12 ϕ HYSD

Shear reinforcement 4 Nos – 8 ϕ HYSD

2 legged stirrups @ 120 c/c at each end and 200 c/c in the remaining part.

(b) A single leaf fully glazed wooden door of size 1.10 m × 2.0 m with two glass panels inserts is provided in a living room.

(i) Draw the elevation of the door **10**

(ii) Draw the sect. plan of the door **5**

10. A T-Beam floor of effective size 8 m × 12 m of an office building consists of RCC slab. Ribs are spaced at 3 m c/c. The effective span of the beam is 8 m. The design datas are given below :

Overall depth of floor slab = 150 mm

Main reinforcement of slab 10 ϕ HYSD @ 160c/c

Overall depth of beam = 550 mm

Width of beam = 300 mm

Main tensile reinforcement in beam = 3 Nos 25 ϕ HYSD

Shear Reinforcement = 2 legged 8 ϕ stirrups @ 300 c/c upto 1 m at each end, rest nominal shear reinf. in remaining length @ 450 c/c.

Prepare the structural working drawing in following way.

(a) Plan of T-beam floor **5**

(b) Longitudinal section of T-beam **10**

(c) Longitudinal section of floor such that the cross section of beam is seen. **10**