

02605

**Diploma in Civil Engineering**

**Term-End Examination**

**June, 2012**

**BCE-045 : CONSTRUCTION DRAWING**

*Time : 2 hours*

*Maximum Marks : 70*

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

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**PART-A**

Attempt *any five* questions from the following :

1. Write short notes on abbreviations, illustrating at least 7 abbreviations. 7
  
2. Explain the term 7
  - (a) Safe bearing capacity
  - (b) Allowable bearing capacity
  
3. Describe different types of continuous lines with their applications, thickness and spacing in drawings. 7
  
4. Draw a neat sketch of an arch and show elements and Technical Terms. 7

5. Discuss architectural aspects of a staircase. 7
6. Define false ceiling and also sketch a wooden frame false ceiling. 2+5
7. Show by the line diagram the various members of a King post and Queen post wooden trusses and mention upto what span each one can be used. 7
8. How depth of foundation, width of foundation and thickness of footings are designed? 7

## PART-B

Attempt Q.NO.9 which is *compulsory* and attempt *any one* question from remaining. Assume suitable scale and mention

9. Draw the sectional elevation of a strip footing for 10

an external concrete wall of thickness 300 mm. The footing is provided at a depth of 1.5 m below the ground level. Plinth level is 0.5 m above GL.

Design datas are as under :

Width of footing = 2.0 m

Overall depth of footing = 450 mm

Depth of footing at the edges = 175 mm

Tensile reinf. =  $12\phi$  HYSD bars@120 c/c

Dist. reinf. =  $10\phi$  HYSD bars@200 c/c

10. The size of an office floor is 4.50x5.50 m effective.

The floor is designed as a two way reinf. RCC Slab simply supported on all it's four edges with corners presented from lifting up. The design data are as under overall depth of slab = 150 mm

Reinf. along short span =  $10\phi$  HYSD@250 c/c

Reinf. along longer span =  $10\phi$  HYSD@300 c/c

Prepare the structural working drawing for the floor in the following manner.

(a) A section of floor along short span 8

(b) A section of floor along long span 8

(c) A plan of the floor showing reinf. in plan 9  
for torsion at the corners.

11. (a) A T-beam roof is provided over a hall of an office building. Draw the longitudinal and cross sections of the beam with following data :
- Effective span of the beam = 4.75m
  - Overall depth of the beam = 350 mm
  - Width of the beam = 230 m
  - Depth of the flange of T-beam = 120 mm
  - Tension Reinf. = 4 Nos -20  $\phi$  HYSD  
Shear Reinf = 8  $\phi$  HYSD 2 legged stirrups @ 150 c/c -5 Nos at each end and @ 225 c/c in remaining part.
- (b) A doubled leaf fully glazed wooden window of size 1.20 x 1.50 m is provided in the study room of a house.
- (i) Draw the elevation of the window 10
  - (ii) Draw the sectional plan of the window. 5
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