BCE-045

DIPLOMA IN CIVIL ENGINEERING
DCLE(G) / DCLEVI

Term-End Examination

June, 2016

00820

BCE-045 : CONSTRUCTION DRAWING

Time : 2 hours   *Maximum Marks : 70*

Note : Question no. 1 is compulsory. Attempt any five out of the remaining six questions.

1. Draw the sectional sketch at A – A' of a staircase with inner dimensions of 5·5 m × 3·5 m having vertical distance between the floors 3·75 m with the following given data and sketch :   *20*

930 mm   1·6 m   35 mm

2·97 m

350 mm

A — 1 — A'

3500

23

5·5 m
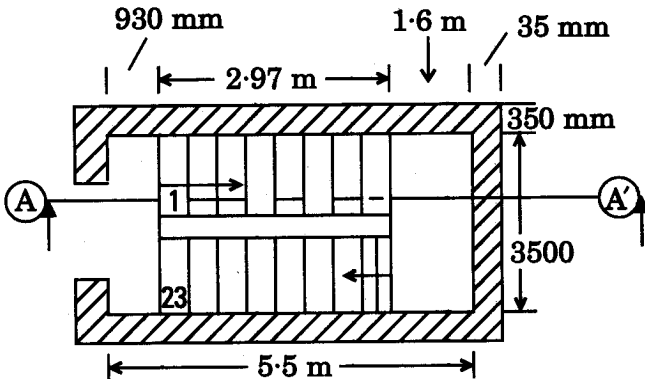
(a) Number of risers = 12, each 150 mm high

(b)   Number of treads = 11

(c)   Effective horizontal span = 4·645 m

(d)   Waist slab thickness = 220 mm

(e)   Effective cover = 20 mm

(f)   Vertical reinforcement = 10 mm φ @ 120 mm c/c

(g)   Landing slab top steel = 10 mm φ @ 120 mm c/c

(h)   Flight and landing top steel joint = 10 mm φ
                                         @ 240 mm c/c

(i)   Spacing bars = 8 mm φ @ 180 mm c/c

2.   Draw the sketch of a lintel beam of window with
      the following data :   *10*

(a)   Wall thickness = 300 mm

(b)   Lintel embedment = 250 mm

(c)   Dimension of lintel beam = 300 × 300 mm

(d)   Baton steel 6 bars of 12 mm φ

(e)   Top steel 2 corner longitudinal bars = 6 mm φ

(f)   Stirrups two-legged = 6 mm φ @ 200 mm c/c

3.   Describe the various types of lines and their
      applications, thickness and spacing as used in
      drawings. Give neat sketches.   *10*

4.   Sketch and describe the following :   *10*

(a)   Flat Brick Arch

(b)   Relieving Arch

(c)   Equilateral Arch

5. Sketch the symbols for any *five* out of the following : $5 \times 2 = 10$

   (a)   Window hinged at side

   (b)   Sliding window

   (c)   Two leaves door opening 90°

   (d)   Sink

   (e)   IWC

   (f)   Brick-work

6. Explain the Perspective Projection in the following : $2 + 3 + 5 = 10$

   (a)   One-point perspective

   (b)   Two-point perspective

   (c)   Three-point perspective

7. Make the drawings of your chosen dimensions for the following : $4 \times 2\frac{1}{2} = 10$

   (a)   Brick-work footing of a wall up to one metre depth

   (b)   A column of 300 mm × 300 mm on a pedestal of 500 mm × 500 mm showing the location of reinforcement

   (c)   An arch showing elements and technical details

   (d)   Foundation of a lamp post