



c09-c-407

**3428**

**BOARD DIPLOMA EXAMINATION, (C-09)**

**OCT/NOV—2014**

**DCE—FOURTH SEMESTER EXAMINATION**

**CIVIL ENGINEERING DRAWING—II**

*Time : 3 hours ]*

*[ Total Marks : 60*

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**PART—A**

4×5=20

**Instructions :** (1) Answer **all** questions.

(2) Each question carries **four** marks.

(3) Any missing data may be assumed suitably.

(4) This part need not be drawn to scale.

**1.** Draw the cross-section of an RCC slab culvert to the given particulars :

4

Width of vent way = 2 m

Width of CC foundation bed = 1.5 m

Thickness of foundation bed = 0.45 m

Bottom level of abutment = +58.00 (top of CC bed)

Top level of abutment = +60.40

Bottom width of abutment = 0.9 m

Both sides vertical and height up to stream

bed level of RL = +59.00 m

Top width of abutment = 0.6 m

Water face is vertical and earth filling side has batter

Thickness of RCC slab = 0.4 m

\* 2. Sketch the section at support of an RCC slab bridge showing bed block and abutment cross-section and name the parts. 4

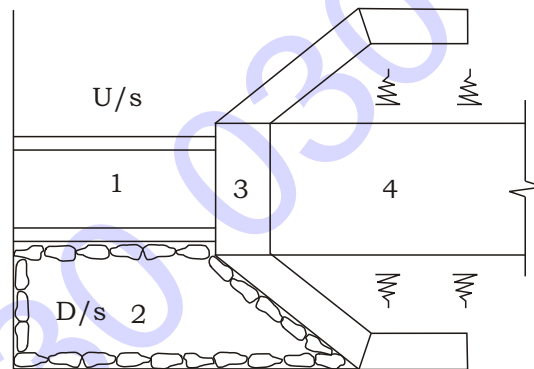
3. Draw the cross-section of a washbasin fixed to wall at a height of 750 mm with the following data : 4

Height of the room = 3000 mm

Slab thickness = 150 mm

Size of washbasin = 600 mm 400 mm

4. Half plan at top of a surplus weir is shown in the figure below : 4



Name the parts 1 to 4.

\* 5. Draw the longitudinal section of the body wall of a canal drop with the following data : 4

Length of body wall = 9.0 m

Top of notch pier = +45.00

Top of body wall = +44.00

Top of CC foundation = +42.80 m

Bottom of CC foundation = +42.20 m

Offset of CC foundation = 0.3 m on either side

Notch = trapezoidal shape with bottom width 0.6 m and side slopes 1:1

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**PART—B**

25+15=40

**Instructions** : (1) Answer **all** questions.

(2) Figures in the margin indicate marks.

(3) Any missing data may be assumed suitably.

(4) This part need to be drawn in given scale.

**6.** Draw longitudinal sectional elevation and plan of pipe culvert to the following particulars to some suitable scale : 25

(1) Drain particulars :

Bed level = +60.350 m

Bed width near the pipe culvert = 1200 mm

Side slopes of drain = 1:1

General ground level near drain = +61.550 m

Bed pitching revetment = 200 mm rough stone bed pitching to a length of 1200 mm shall be provided both on U/s and D/s. A toe of same width (200 mm) shall be taken to a level of +60.00 at the end of bed pitching

Side slope revetment 200 mm size rough stone along the slopes to a length of 1200 mm both on U/s and D/s from bed level to general ground level

(2) Pipe details :

Internal dia of CC pipe = 1000 mm

External dia of CC pipe = 1200 mm

Thickness of CC bedding for the pipe = 300 mm

Thickness of CC benching for the pipe = 350 mm

Width of both bedding and benching = 1800 mm

Bottom level of CC bedding = +59.95

Number of pipes = 1

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(3) Head walls :

At the end of pipe two head walls are provided with brick masonry with the following details :

Length of head wall = 7200 mm

Bottom level of head wall = +59.10

Top level of CC bed provided under

head walls = +59.10

Bottom level of CC bed provided under

head walls = +58.80

Width of CC bed = 1800 mm

Bottom width of head wall = 1200 mm

Profile of head wall = Outer surface vertical and earthfill face having a batter so that the top width is 450 mm

Top level of head wall = +62.00

(4) Earthfill and embankment :

Formation width = 10000 mm

Side slopes = 2 horizontal to 1 vertical

Formation level = +64.00 m

Height of earthfill = +64.00–61.45  
= 2.55 m

Guide stones on both sides of formation : 450 mm 450 mm square guide stones are provided at a distance of 450 mm from extreme edges of formation. These stones are taken to a depth of 600 mm below formation level and extended to a height of 700 mm above formation level at 3000 mm c/c

**7.** Draw the cross-section of a homogeneous earthen bund with the following specifications to a scale of 1:100 :

15

Top width of bund = 1.5 m

TBL = +65.00 m

General ground level = +58.00 m

Stripped ground level = +57.80 m

Side slopes = 1.5:1 on U/s and 2:1 on D/s

Key trenches = 1.2 m wide and 0.6 m deep at 4.0 m c/c

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Protection of U/s face of the bund : The U/s face of the bund is provided with 300 mm thick rough stone revetment over 150 mm thick gravel backing. This revetment is founded on a toe of 1 m wide and 1.2 m deep

Protection of D/s face of the bund : A rock toe with 300 mm rough stone boulders is provided with 1000 mm top width and top level being +59.50. Side slopes of rock toe = 1:1

Sand filter : 200 mm thick on rear side only and at the bottom of the rock toe.

Toe drain : A longitudinal drain is provided with bottom width 1 m and side slopes 1:1. This is lined with the outer surface of rock toe and taken to a level of +56.00. Rough stones of 300 mm size are used for side revetment and bed pitching of toe drain

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