



C09-C-407

3428

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

DCE - FOURTH SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING - II

Time : 3 hours]

[Total Marks : 60

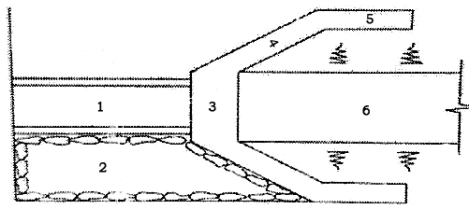
PART—A

5×4=20

- Instructions :**
- (1) Answer *any four* questions.
 - (2) Each question carries **five** marks.
 - (3) **Part—A** need not be drawn to be scale.
 - (4) Any missing data may be assumed suitably.

1. Sketch the section of head wall of pipe culvert with the following data
Bottom level of head wall = + 49.00
Bottom width of head wall = 1200 mm
Top level of CC bed provided under head wall = + 49.00
Bottom level of CC bed provided under head wall = + 48.00
Width of CC bed = 1800 mm
Profile of head wall = Outer surface vertical and earth Fill face having a batter so that the top width = 450 mm Top level of head wall = + 52.00.
2. Draw the cross-section of a weir with stepped aprons.
3. Draw the plan of two span (each 3.0 m) RCC-T beam bridge with straight returns and label the components.

- * 4. Draw the plan of an overhead tank from the given specifications :
- Size of tank = 5 m × 5 m × 1.75 m
 Thickness of RCC side wall = 200 mm
 Size of RCC column = 400 mm × 400 mm
 Size of footing at base = 1.6 × 1.6 m
5. Half plan at top of a surplus weir as shown below in fig . name any five parts numbered from 1 to 6.



6. A tank bund has a top width of 2.5 m ; T.B.L = + 58.00, G.L = + 48.50; Side slopes = 2 : 1 on either side. If the hearting zone is 1.00 m, above F.T.L = + 56.00. with its top width 1.6 m and side slopes 1 : 1 sketch the cross-section of the bund.
7. Draw the cross section of an empty soak pit with the following specifications : Diameter (internal) = 900 mm Circular lining = 230 mm thick brick lining with dry joints, Total depth of pit = 1.70 m General ground level = 450 mm below roof slab, Roof covering with removable precast concrete slabs 70 mm thick.

PART—B

25+15=40

- Instructions :**
- (1) Answer **all** questions.
 - (2) Any missing data may be assumed suitably.
 - (3) **Part—B** needs to be drawn to the given scale.

- * 8. Draw the following views of a septic tank to a scale of 1:20 from the given specifications :
- (a) Plan
 - (b) Longitudinal section

10+15=25

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Specifications :

Internal dimensions = 900 × 2750 mm

Brick masonry wall thickness = 230 mm

Thickness of cc bed = 500 mm

CC Offset for masonry walls = 300 mm

Depth of water = 1000mm

Free board = 300 mm

Thickness of RCC roof panels = 100 mm and width 450 mm fitted with bent handles for lifting.

Scum board = RCC precast slab 75 mm thick fixed at a height of 300 mm from floor level and extending up to a height 150 mm below roof. This shall be fixed at a distance of 900 mm from inside of wall at inflow and into a groove 75 mm deep.

Standing baffle = RCC precast slab 75 mm thick kept of floor at a distance of 600 mm from inside of wall at outflow end. The top of baffle shall be 150 mm below water level.

Inflow and out let pipes = 100 mm dia. T-shaped pipes

Vent pipe = 50 mm dia. AC pipe with cowl extending to a height of 2.0 m above G.L

Masonry pedestal = 450 mm dia. Circular brick masonry pedestal shall be provided around the vent pipe up to G.L

General ground level = 300 mm above top of RCC precast roof panels.

OR

9. Draw the sectional elevation of a square RCC overhead tank with the following data to a scale of 1 : 50 :

Height of the tank (from GI to bottom of the tank, i.e., top of floor slab or base slab) = 9 m

Size of tank = 4.5 m × 4.5 m × 1.5 m

25

Thickness of RCC side walls = 200 mm

Thickness of RCC base slab = 200 mm

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Thickness of RCC roof slab = 120 mm

Size of RCC column = 400 mm × 400 mm

No. of RCC columns = 4 Nos (one at each corner)

Size of RCC brace beams = 400 mm × 350 mm

Spacing of brace Deams = 3.0 m/cc

Depth of RCC footing below ground level = 2 m

Size of footing at base = 1.6 m × 1.6 m

Thickness of footing at column face = 500 mm

Thickness of footing at the end = 200 mm

Thickness of levelling course below the footing = 200 mm (1 : 4 : 8)

plain concrete Size of ring beam below base slab = 400 mm × 450 mm

Dia. of inflow pipe = 100 mm Dia. of outflow pipe = 75 mm

Dia. of scour pipe = 75 mm Size of manhoie cover = 600 mm × 450 mm

Show the pipe connections, ladder and ventilating arrangements.

10. Draw the longitudinal section of a canal drop and name the component Parts (need not be drawn to scale) 15

OR

11. Sketch the cross section of a homogeneous earthen bund and name the Component parts. (need not be drawn to scale) 15

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