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C09-C-407

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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.

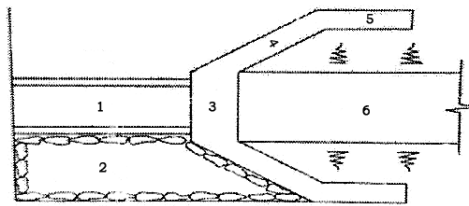
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4. Draw the plan of an overhead tank from the given specifications :  
 Size of tank = 5 m × 5 m × 1.75 m  
 Thickness of RCC side wall = 200 mm  
 Size of RCC column = 400 mm × 400 mm  
 Size of footing at base = 1.6 × 1.6 m
5. Half plan at top of 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 <sup>\*</sup>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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