



C14-C-507

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

DCE - V SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING - II

Time : 3 Hours]

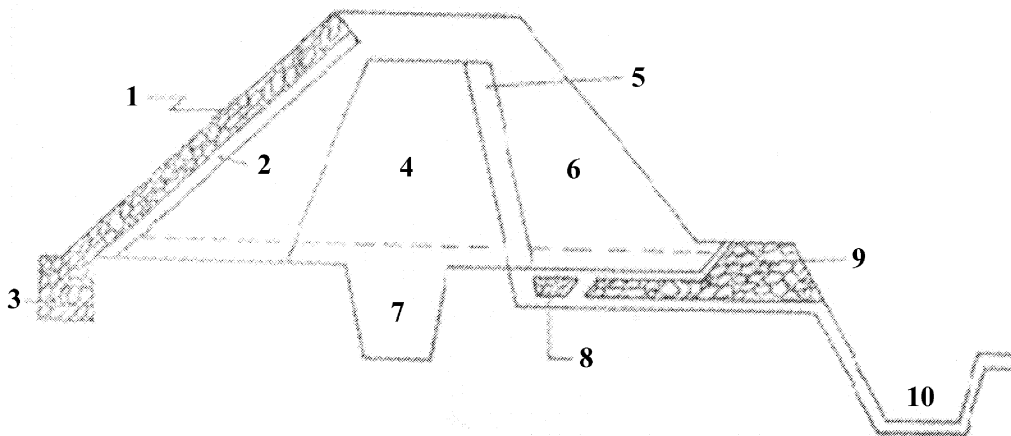
[Total Marks : 60

PART - A

5 × 4 = 20

- Instructions :**
- (1) Answer **ALL** questions.
  - (2) Each question carries **FOUR** marks.
  - (3) Drawing should be neat and clear with the necessary dimensions.
  - (4) All dimensions are in mm.

1 Name any four parts of the bund shown below : 4×1

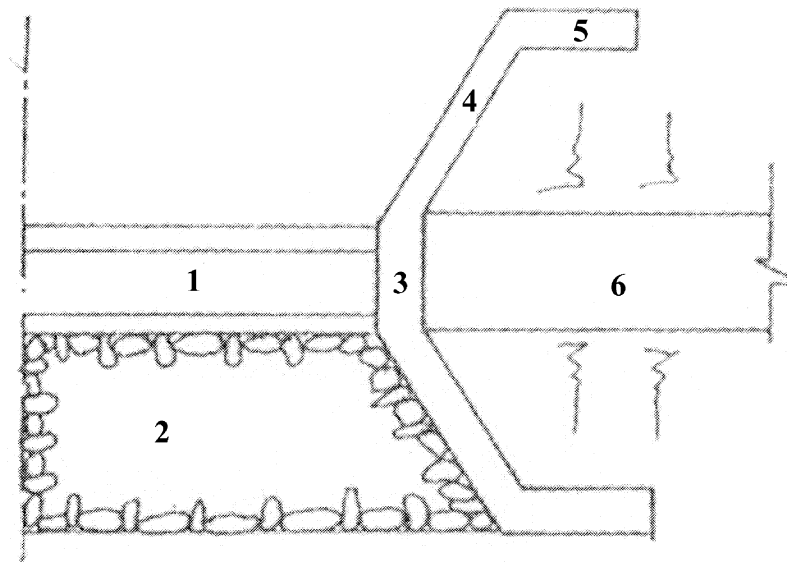


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[ Contd...

- 2 Sketch a typical plan of a septic tank and label the parts. **2+2**
- 3 Half plan of the surplus weir is shown. Name any four parts. **4×1**



- 4 Sketch a typical cross-section canal drop with a rectangular notch. **3+1**
- 5 Sketch the plan of a European type of water closet providing suitable doors windows and ventilators and other necessary sanitary fittings. Label the parts. **2+2**

**PART - B - Essay Type Questions****40 Marks**

- Instructions :
- (1) Answer *all* questions.
  - (2) Drawing should be neat and clear with the necessary dimensions.
  - (3) All dimensions are in mm.

- 6 Draw the sectional elevation and plan of a square R.C.C. over head water tank to a scale of 1:50 with the following data : **18+7**

Height of the tank (from G.L. to the

bottom of the tank i.e. top of base slab) ..... = 7.5 m

Size of tank ..... =  $4.5 \times 4.5 \times 2$  m

Thickness of R.C.C. side walls ..... = 200 mm

Thickness of R.C.C. base slab ..... = 200 mm

Thickness of R.C.C. roof slab ..... = 120 mm

Size of R.C.C. column ..... =  $400 \times 400$  mm

No. of R.C.C. columns ..... = 4 nos

Size of R.C.C. brace beams ..... =  $350 \times 300$  mm

Spacing of brace beams ..... = 2.5 m c/c

Depth of R.C.C. footing below G.L.

including leveling course ..... = 2 m

Size of footing at base ..... =  $1.6 \times 1.6$  m

Thickness of footing at column face ..... = 500 mm

Thickness of footing at the end..... = 200 mm

Thickness of leveling course below the footing ..... = 200 mm

Size of ring beam below base slab..... =  $400 \times 450$  mm

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

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

Size of manhole cover ..... =  $600 \times 75$  mm

Also show pipe connections, ladder, air vent, water level indicator etc. Assume any data suitably if necessary.

- 7 Draw to scale of 1:100, the cross section of the non homogenous earthen bund from the specifications given below : **15**

T.B.L. = +50.5

M.W.L. = +49.2

F.T.L. = +48.5

Top width of the bund = 2.5 m

General ground level at the site = +40.0

Stripped ground level = +39.25

Slope on the water face = 2 H : 1 V

Slope on the rear face = 2 H : 1 V

Hearting zone	= Top width = 1750 mm at MWL side slopes = 1:1 Sand chimney to a thickness of 1250 mm shall be provided on the rear face of hearting zone
Casing	= horizontal casing to a thickness 1000 mm is provided over a longitudinal filter with its top at +41.4
Cut off trench/key trench	= bottom width = 2.5 m; side slopes = 1:1 and taken to a level of +36.00
Revetment	= Revetment on water face consists of 450 mm size rough stone boulders laid over 150 mm thick gravel backing and is founded on rock wall 1.2 m wide and 1.5 m deep
Rock toe	= Top width 1.5 m at +42.2 side slopes of 1:1 and consists of rough stone boulders of size varying from 150 mm to 300 mm
Toe drain	= 1.0 m bed width with 1:1 side slopes. The bed level = 38.55 up to the top level of +40.00. Bed pitching and side revetment consists of 300 mm rough stone.
Longitudinal filter	= consists of rough stone of sizes varying from 150 mm to 250 mm to a depth of 750 mm. Fine and course sand layers of 150 mm and 200 mm thick are provided on both bottom and top of longitudinal filter. These sand layers shall be provided below stripped level at +38.85, on which rough stones are arranged to form filter media, arranged between sand layers. Bottom width = 1.5 m. Same arrangement shall be provided for cross filter and extended into the rock toe.