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C09-C-**407**

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BOARD DIPLOMA EXAMINATION, (C-09)
OCTOBER/NOVEMBER-2018
DCE – FOURTH SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING – II

Time : 3 Hours] [Total Marks: 60

PART-A

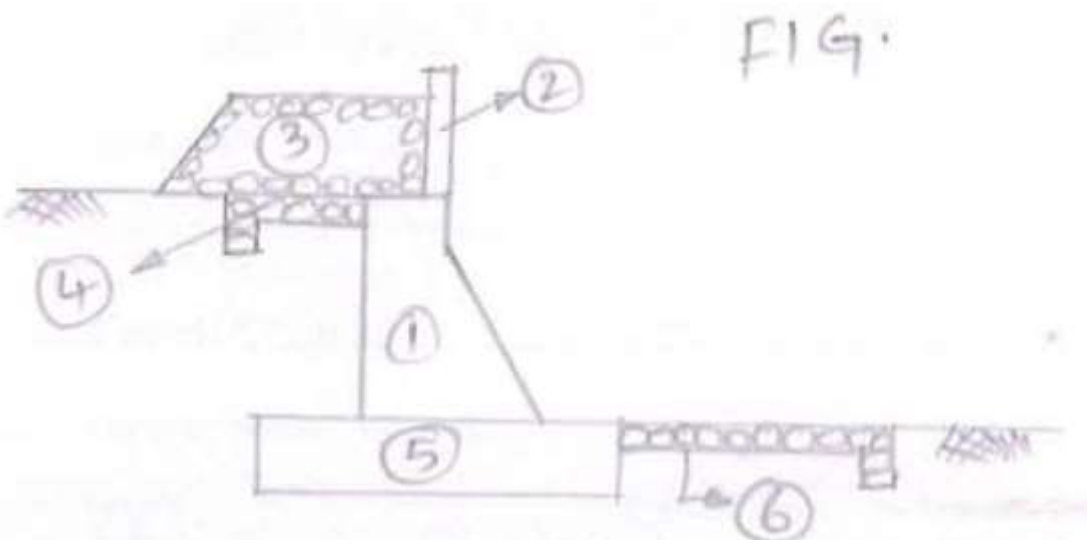
4X5=20

Instructions :
1. Answer **All** questions.
2. Each question carries **four** marks.
3. Sketches need not be drawn to scale.
4. Assume missing data, if any

1. Draw the cross sectional elevation showing sloped wing wall and return wall of abutment with vertical water face:
2. Sketch the section of a tank bund with the following data:

Top width	=	1.20m
T.B.L	=	+62.00
G.L.	=	+58.00 stripped level + 57.60
Nature of section	=	Homogeneous
Free board	=	1.00m
Side slopes	=	1½ : 1 on U/S and 2:1 on D/S
Key trenches	=	0.6m x 1.2m @ 4.0m C/C
Revetment	=	300mm size rough stone over 150mm thick gravel backing
Toe drain	=	1.0m bed width and 1.0m below G.L. with 1:1 side slopes
Toe wall under revetment	=	1.0m wise and 1.2m deep

3. Draw the plan of Indian type water closet and its connection to a sewer of residential building. The size of the water closet room is 1300mm x 1500mm
4. The longitudinal section of a canal drop is shown in figure. Name the parts numbered from 1 to 6



5. Sketch the cross-section of a body wall of surplus weir from the following data:

F.T.L.	=	+138.50
T.BL.	=	+140.00
G.L.	=	+138.00
Body wall top width	=	0.9m
Bottom width	=	1.5m with equal batter on both sides.
C.C. foundation bed top level	=	+135.00
Bottom level	=	+134.40
Offset	=	300mm on either side
Length of abutment	=	1.5m

Wing walls:

Length of U/s from the bottom of body wall to the outer edge of return = 3.8m

Length of D/s from bottom of weir wall to the outer edge of return = 3.6m

Top of U/s return wall = +139.20

Top of D/s return wall = +138.70

G.L. = +137.20

The top of return wall shall be connected with G.L. at a slope of 1.5:1 on both U/s and D/s and suitable revetment shall be provided

Foundation details for abutment, wings and returns are same as that of body wall.

PART-B

25+15=40Marks

Instructions : 1. Answer **all** questions.
2. Drawing must be to the scale.
3. Any missing data may be assumed suitably

6. Draw the cross section of non-homogeneous (zonal section) earthen bund with the following data to some suitable scale:

Top width of bund = 2.5m

Tank bund level (TBL) = +61.5m

Full tank level (FTL) = +59.5m

Maximum water level (MWL) = +60.2m

General ground level = +51.00m

Stripped ground level = +50.25m

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

Hearthings:

Top width = 1.75m

Side slope = 1:1

Top level = 60.2(MWL)

Cut off trench:

Bottom width = 2.5m

Side slopes = 1:1 on (both sides)

Bottom level = +47.00m

Sand chimney :

Thickness = 1.25m

Slope = 1:1

Casting horizontal casing or sand blanket:

Thickness = 1.0m and laid over longitudinal filter with its top level at +52.4

Rock toe:

Top width = 1.2m out of total width 2.4m at the level +53.20

Side slope = 1:1 on both sides.

Composition = Rock toe is filled with broken stones of varying size ranging from 200mm and 500mm

On the earthen bund side, rock toe is provided with 150mm thick fine sand and below that 250mm thick course sand

Longitudinal filter:

Bottom level of longitudinal filter is taken 400mm below stripped ground level. It consist of rough stone of varying size 250mm and 350mm are laid to depth of 0.75m and fine and course sand layers of 150mm and 250mm thick respectively are laid at bottom and top of longitudinal filter on which casing of 1.0m thick is provided. Bottom width of longitudinal filter = 1.5m with 1:1 side slopes and same size filter media is provided in the cross filter and extended into the rock toe.

Toe drain:

Bottom level = +49.50m

Bottom width = 1.0m

Side slopes = 1:1 on both sides

Bed pitching and side revetment = 300mm thick of rough stones

Protection on upstream face:

450mm thick rough stone revetment over 250mm thick gravel backing

This revetment is founded on rough stone toe wall of 1.2m wide and 1.2m deep

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

Height of tank (from GL to bottom of tank i.e, top of floor slab or base slab) = 9.0m

Size of tank = 4.5m x 4.5m x 1.5m

Thickness of side walls = 200mm

Thickness of RCC base slab = 200mm

Thickness of RCC roof slab = 120mm

Size of RCC column = 400mm x 400mm

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

Size of RCC brace beams = 400mm x 350mm

Spacing of brace beams = 3.0m c/c

Depth of RCC footing below ground level = 2.0m

Size of footing at base = 1.6 x 1.6m

Thickness of footing at column face = 500mm

Thickness of footing at the end = 200mm

Thickness of leveling course below the footing = 200mm (1:4:8) plain concrete

Size of ring beam below base slab = 400mm x 450mm

Dia. of inflow pipe = 100mm

Dia. of outflow pipe = 75mm

Dia. of scour pipe = 75mm

Size of manhole cover = 600mm x 450mm

Show the pipe connections, ladder and ventilating arrangements.