C14-C -**507**

4623

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DCE - FIFTH SEMESTER EXAMINATION

CIVIL ENGINEERING DRAWING - II

Time:3 hours Max.Marks: 60

PART-A

5x4=20M

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

1. Sketch the cross section of pipe along with bedding and benching of a pipe culvert with the following data:

Internal diameter of the pipe	=	1.00m
Thickness of pipe	=	0.10m
No.of pipes	=	1
Thickness of concrete bed	=	200mm
Width of concrete bed	=	1800mm
Thickness of concrete benching	=	350mm

2. Draw the plan of a water closet of size 1.5mx1.2m with squatt in type. provide suitable ventilators and doors.

3. List out any six component parts of a canal regulator.

4. Draw the sectional elevation of an RCC T-beam bridge showing the components:

1) Abutment 2) Bed block 3) T-beam 4) RCC slab

5. Draw the C/S of body wall of a surplus weir with the following data:

Crest level =@FTL

FTL =+54.50

Top level of CC bed= +52.80

Bottom level of CC bed =+52.20

Body wall bottom width = 1.2m

Body wall top width = 0.6m width equal batter on both sides.

PART-B

25+15=40M

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

6. Draw the longitudinal sectional elevation and Half plan at Bottom and Half plan at Top of the RCC slab culvert to the scale of 1:50 with the following specifications. 25M

1. Foundations:

Foundations for abutments and wing walls are taken to the same level

Bottom level of levelling course (CC)	=	+49.80
Top level of levelling course	=	+51.10
Width of levelling course	=	1.5m
Thickness of C.C foundation bed	=	0.5m
Width of C.C foundation bed	=	1.5m
Top level of C.C foundation bed	=	bottom level of abutment and wing walls =+51.60
Bottom width of abutment	=	bottom width of wing wall
	=	0.9m
Bedlevel	=	+52.60

2. Super Structure :

Profile of abutments and wing walls = width of abutment and wing walls is 0.9m upto bed level. From bed level the water face is kept vertical and the rear (earth retaining side) side has a batter such that top width is equal to 0.6m (at bed block level)

Thickness of bed block	=	250mm
Width of bed block	=	600mm
Bottom level of RCC slab	=	+54.20
Thickness of slab	=	200mm
Thickness of wearing coat	=	100mm
Top level of wearing coat	=	+54.50
Kerb width	=	200mm
Top level of kerb	=	+54.75
Thickness of parapet wall	=	400mm
Top level of parapet wall	=	+55.25
Length of abutment	=	8.6m
Width of road way	=	7.4m
Length of wing wall	=	2.8m

3. Vent way and other protection works:

Width of vent way	=	2.0m
Height of vent way	=	1.6m
Bed pitching	=	200mm

Boulders are provided as bed pirching in the vent way

Cutoff walls	=	200mm thick are provided at the ends of vent way
Top level of cut-off wall	=	B.L =+52.60
Bottom level of cut-off wall	=	+52.00
CC bed for cut off wall	=	Foundation for cut off walls consists CC bed 800mm wide and 300mm depth

4. Side slope revetment:

The side slopes of the stream are provided with 200mm size rough stone boulders at a slope of 1:1 from bed level to formation level.

7. Draw the cross-section of homogeneous earthen bund with the following specifications to a scale 1:100 15M

Top width of bund	=	1.2m
Tank bund level (TBL)	=	+55.00
General Ground level	=	+50.00
Stripped Ground level	=	+49.70
Side slopes	=	1.5:1 on upstream side and 2:1 on downstream side
Key trenches	=	1.2m wide and 0.6m deep at 4.0m c/c are to be provided

Protection of U/S face of the bund:

The U/S face of the bund is provided with 300mm thick rough stone revetment over 150mm thick gravel backing and at bottom, this revetment is founded on rough stone wall 900mm wide and 900 mm deep (toe).

Protection of D/S toe of a bund:

A rock toe with 300mm rough stone boulders is provided with 900mm top width and top level being at +51.20 side slopes of rock toe=1:1

Sand filter = 200mm thick at rear side and at the bottom of the rock toe.

Toe drain = A longitudinal drain is provided with bottom width 1.0m and side slopes 1:1. This is in line with the outer surface of rock toe and taken to a level of +49.00. rough stones of 300mm thick are used for side revetment and bed pitching of toe drain.

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