CIVIL ENGINEERING DRAWING – II

Course code	Course Title	No. of periods/week	Total No. of periods	Marks for Formative Assessment	Marks for Summative Assessment
C-406	Civil Engineering Drawing – II	06	90	40	60

Model Paper for End Examination:

MODEL PAPER – BOARD DIPLOMA EXAMINATION,
(C–23)DCE—FOURTH SEMESTER EXAMINATION
CIVIL ENGINEERING DRAWING- II (C-406)

Time: 3 hours] **[Total Marks:60**

PART—A

5×4 =2 0

Instructions : (1) Answer **all** questions.

(2) Each question carries **four** marks.

(3) *Part—A* may be drawn not to scale.

(4) Assume suitable data if necessary.

1. Draw the cross-section of a pipe along with bedding and benching fora pipe culvert and name the parts.

2. Draw the cross-section of a stone masonry abutment of an RCC bridgewith the following data.

Thickness of C.C. foundation bed	–400 mm.
Bottom width of foundation bed	–1500 mm.
Bottom width of abutment	–900 mm.
Top width of abutment	–600 mm. (Water face vertical)
Height of an abutment	–4000 mm
Width of bed block	–600 mm
Thickness of bed block	–300 mm.

3. Name any four facilities to be provided in a lavatory or sanitary blockof a large building.

4. Draw the cross-section of a homogeneous earthen bund and namethe parts.

5. Name any four component parts of a tank sluice with tower head.

PART—B 25 +15 = 40

Instructions : (1) Answer **all** questions.

(2) Assume suitable data if necessary.

6. Draw the following views of a septic tank to a scale of 1:20 from the given specifications :

(a) Plan 25

(b) Longitudinal section

Specifications :

Internal dimensions	= 1000 × 2800 mm
Brick masonry wall thickness	= 230 mm Thickness
of CC bed	= 450 mm
CC offset for masonry walls	= 300 mm
Depth of water	= 1000 mm
Free board	= 300 mm
Thickness of RCC roof panels	= 120 mm and width 450 mm fitted with bent handles for lifting.
Scum board	= RCC precast slab 90 mm thick fixed at a heightof 300 mm from floor level and extending upto aheight of 150 mm below roof. This shall be fixedat a distance of 900 mm from inside of wall at inflow end into a groove of 90 mm deep.
Standing baffle	= RCC precast slab 90mm thick kept on floor at a distance of 650 mm from inside of wall at out flow end. The top of baffle shall be 150 mm below water level.
Inflow and outflow pipes	= 100 mm dia. tee shaped pipes
Vent pipe	= 50 mm dia. AC pipe with a 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.

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7. Draw the longitudinal section of a canal drop to a scale of 1:50 from the following specifications : 15

(a) **Canal particulars** :

	U/S SIDE	D/S SIDE
Ground level at the site	+120·600	+120·600
Bed level	+120·000	+118·600
FSL	+120·500	+119·100
Canal bund level (CBL)	+121·100	+121·100
Canal bed width	1·60 m	1·30 m
Canal bund width	1·00 m	1·00 m
Canal slopes in cutting	1:1	1:1
Level of 1·0 m wide berm	+120·600	+120·600

Slopes in embankment :

Water face	1·5:1	1·5:1
Rear face to connect GL	2:1	2:1

(b) **Body wall :**

Top level	=	+120·000
Bottom level	=	CCfoundation top level = +118·600
CC foundation bottom level	=	+117·850
Top width	=	600 mm
Bottom width	=	1200 mm with U/S face vertical
Length	=	8·5 m
Width of CC foundation	=	1·80 m with equal offset

(C) Notch wall or Notch pier :

Thickness of notch wall	=	450 mm
Top level of notch wall	=	CBL = +121·100

Notch wall is constructed over body wall and one No. of notch isprovided at the centre with its sill level at bed level of canal of U/S.

* *(d)* **CC apron on D/S of drop** :

CC apron shall be provided in continuation with CC bed under body wall with same thickness. Length of CC apron from the edge of CC bed under body wall is 2·75 m

Top level of CC apron = Bed level of canal on D/S = +118·600 Bottom level of CC apron = +117·850

(e) **Rough stone bed pitching** :

Upstream side : Bed pitching consists of 300 mm size stone boulders to a length of 1·5 m including toe. Bottom level of the toe wall +119·25

Downstream side : Bed pitching consists of 300 mm size stone boulders to a length of 3·5 m including toe. Bottom level of the toe wall +117·85

(f) **Revetment to canal slopes** :

Upstream side : Revetment is provided to the sides of canal from bed level to FSL for a length of 2·8 m. A slope of 1:1 is given at the end of revetment to connect the revetment with bed level.

Downstream side : To the side slopes of canal revetment starts from canal bund level at the notch wall and is taken to a level of +120·500 (FSL on U/S) at the end of CC apron in an inclined direction.

From the end of CC apron, revetment is continued at the same level (+120·500) up to the end of rough stone bed pitching and vertically dropped to the level of +119·50. From this point revetment is continued at the same level for a distance of 3·0 m.

Rough stone boulders of size 300 mm are used for revetment to canal slopes.