C16-**C-506**

6625

BOARD DIPLOMA EXAMINATIONS

OCT/NOV-2019

DCE - FIFTH SEMESTER

CIVIL ENGINEERING DRAWING -II

Time: 3 hours Max. Marks: 80

PART – A **3 X 10 = 30**

Instructions: *1. Answer **all** questions.*
*2. Each question carries **Three** Marks.*
3. Answer should be brief and straight to the point and should not exceed Five simple sentences.

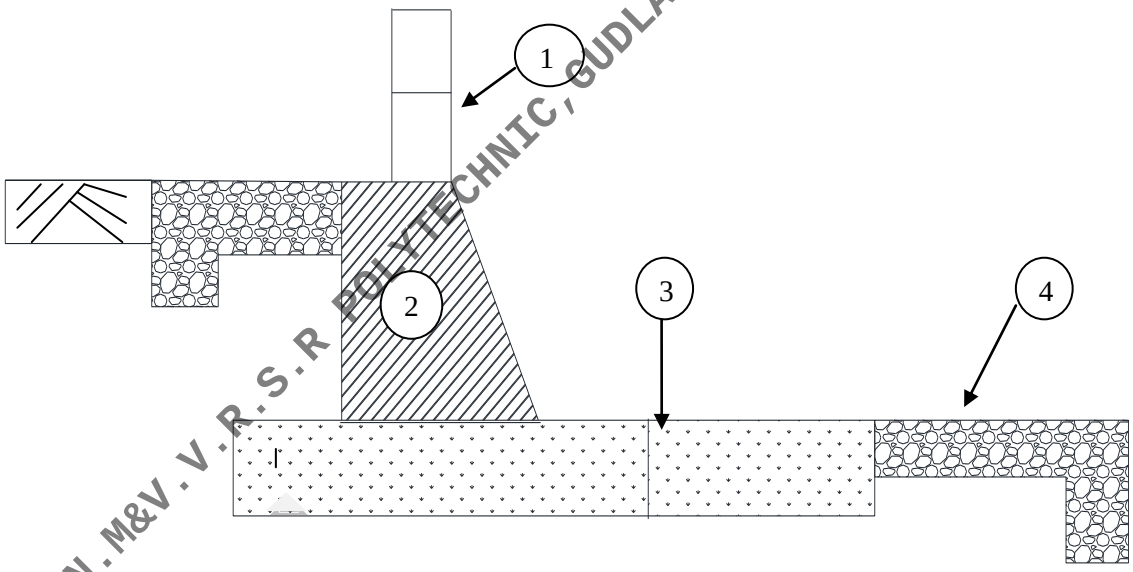
1. Draw the C/S across abutment of a slab culvert showing R.C.C slab, c.c. bed block, brick masonry abutment wall with vertical water face & batter on rear side, c.c. bed etc. and label the parts.

2. Sketch the sectional elevation of a two span T beam bridge showing pier, slab, beam etc. with the following data. Width of vent way=3.5m, thickness of slab = 200mm, depth of T beam = 500 mm, c.c. bed block = 600x600x1250 mm , width of pier = 600 mm, top level of c.c. bed=+49.70, bottom level of c.c. bed=+49.10,revetment with 1:1 slope =300 thick over 150 mm gravel backing, B.L=+50.00,F.S.L=+52.00, Road formation level=+53.70, brick masonry parapet wall with pillars of size=300x300 mm, top level of pillar=+64.50

3. Draw the plan showing all pipe connections with an Indian type W/C to residential building, taking the size of room as 1200x1500 mm.

4. Sketch the barrel of a tower head sluice from the following data.
   Vent way=0.9 m wide x 0.75 deep, width of barrel side walls=0.5 m aat top and 0.75 m at bottom, C.C. foundation=0.5m thick with 0.3 offset.

5. The longitudinal section of canal drop is shown below, Name the parts numbered from 1 to 4.



PART – B **5 X 10 = 50**

***Instructions**:* 1. *Answer any **Five** questions*
2. *Each question carries **TEN** Marks.*
3. *Answer should be comprehensive and Criteria for Valuation is the content but not the length of the answer.*

6. Draw the Longitudinal section of a pipe culvert with the following specifications to a scale of 1:100.

Drain particulars:
Bed level =+50.350, side slopes of drain=1:1, General G.L near the drain=+51.55 Bed pitching and side slope revetment on both U/S&D./S. A toe width = 200 mm shall be taken to a level of +50.00 at the end of bed pitching. Side slope revetment shall be with 200 mm size rough stone along the slopes to a length of 1200 mm both on U/S&D/S from B.L to general G.L.

Pipe particulars:
Internal dia. Of pie = 1000mm, external dia. of pipe = 1200 mm, bedding for the pipe= 250 mm c.c., benching for the pipe =300 mm c.c., width of both bedding and benching = 1800 mm, bottom level of c.c. bedding =+50.00, no. of pipes=one.

Head walls:
At the end of pipe, two head walls are provided with brick masonry with the following details: bottom level of head wall=+49.10, top level of c.c. bed under head walls=+48.80, width of c.c. bed = 1800 mm bottom width of head wall = 1200 mm with outer face vertical and batter on earth fill side with top width = 450 mm. Top level of head wall=+52.00

Earth fill and embankment:
Formation width=10 m, side slopes= 2H to 1V, Formation level=+54.00, Height of earth fill = 2.55 m. Provide 450x450 mm square guide stones at a distance of 450 mm from the extreme edges of the formation taken to a depth of 600 mm below formation level and extend to a height of 750 mm above formation level

7. Draw the cross section of a homogeneous earthen bund with the following specifications to a scale of 1:50.

Top width of bund=1.5 m, T.B.L =+57.00, General Ground level = +50.00, stripped Ground level= +49.70, side slopes = 1.5:1 on U/S & D/S, key trenches = 1.2 m wide and 0.6 m depth at 4 m c/c. The upstream face of bund is provided with 300 mm thick revetment over 150 mm gravel backing, below the revetment 1m wide x 1m deep toe wall is provided. The D/S face of the bund is provided with a rock toe with 300 mm boulders having a top width of 900 mm and top level being at+51.20. side slopes of rock toe=1:1, 200 ,mm thick sand filter is provided on rear side and at bottom of rock toe. A longitudinal Toe drain is provided with bottom width 1m and side slopes1:1. This is in line with the outer surface of rock toe and taken to a level of +49.00 rough stones of 300 mm thick are used for side revetment and bed pitching of toe drain.