7620

BOARD DIPLOMA EXAMINATION, (C-20)

MAY/JUNE—2023

DCE - FIFTH SEMESTER EXAMINATION

QUANTITY SURVEYING—II

*Time* : 3 Hours]   [*Total Marks* : 80

PART—A   3×10=30

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

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

                (3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

                (4) Assume any suitable data.

1. Calculate quantity of steel required for lintel provided on the door with given details, Size of door 1.00 × 2.00 m, bearing on either side 0.15 m, depth of lintel 0.15 m, main reinforcement 4 No's of 12 mm dia cranked at both ends, Stirrups 6 mm dia at 120 mm c/c. Assume suitable cover for reinforcement.

2. State the component parts of a dog legged staircase.

3. State the different methods of estimating of steel for R.C.C. work in a building. What are the types of reinforcement used in R.C.C?

4. A R.C.C. square column footing of an overhead tank is shown in Figure A. Calculate *(a)* quantity of R.C.C (1 : 2 : 4) footing in square portion and *(b)* quantity of R.C.C. (1 : 2 : 4) footing trapezoidal portion.
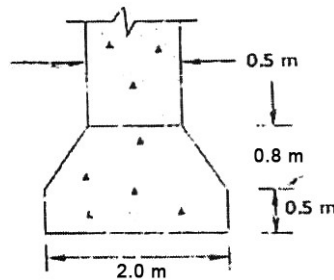
Figure A

5. The cross-section of an abutment is shown in Figure B. Calculate the quantities for the following items for the length of 15 m.

    (a) C.C. (1 : 3 : 6) for foundation
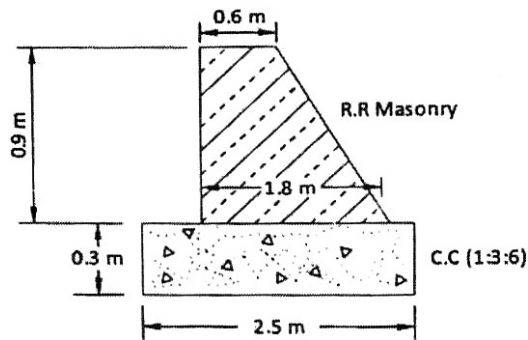
    (b) R.R. masonry in CM (1 : 6)

Figure B

6. The elevation VRCC brace of OHSR shown in Figure C. Calculate the VRCC (1 : 2 : 4) brace beam, if the section of mid-span is 45 cm × 65 cm.
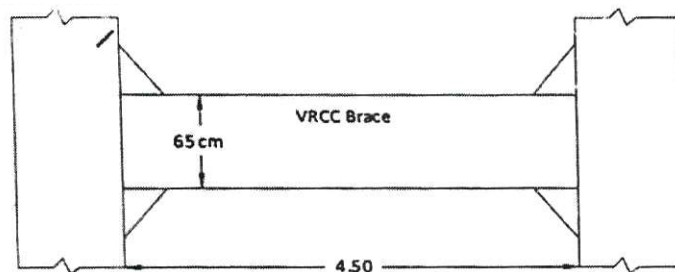

Figure C

7. State the accessories of O.H.S. R.

8. Define the terms 'Book value' and 'Salvage value'.

9. List the purpose of the valuation.

10. A newly constructed two storied building. The cost of the building is arrived by plinth area basis including all provisions is ₹25,00,000/-. The interest on capital is 6%. Calculate the monthly rent.

Instructions : (1) Answer *any* **five** questions.

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

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Prepare the bar bending schedule and find the total weight of mild steel for the one-way slab for given data. The thickness of slab is 120 mm and 15 mm clear cover top and bottom, the end cover may be taken as 25 mm. The room internal measurements 3.5 m × 8.00 m, wall thickness 350 mm bearings on wall 230 mm. Main reinforcement (Alternative bars are cranked) 10 mm dia at 120 mm C/C, distribution steel 6 mm dia at 180 mm C/C, weight of bar 10 mm dia @ 6.20 N/m, 6 mm dia @ 2.20 N/m.

(OR)

(b) Calculate the quantity of steel required for the Lintel cum sunshade and prepare the bar bending schedule with the following data. Clear span 2000 mm, wall thickness 230 mm, b = 230 mm, d = 200 mm. Main bars 2 No's of 20 mm dia, cranked bar 1 No of 20 mm dia, anchor bars 2 No's of 10 mm dia at top. Stirrups 6 mm dia @ 250 mm C/C two legged. Sunshade 600 mm wide thickness of slab 75 mm cover all-round 20 mm spacing of main bars in sunshade 150 mm.

12. *(a)* Calculate the following quantities of WBM road shown in figure D for the length of 1.50 km.

(i) Collection of 65 mm HBG metal for base course

(ii) Collection of 40 mm HBG metal for wearing course

(iii) Spreading of 40 mm HBG metal for wearing course

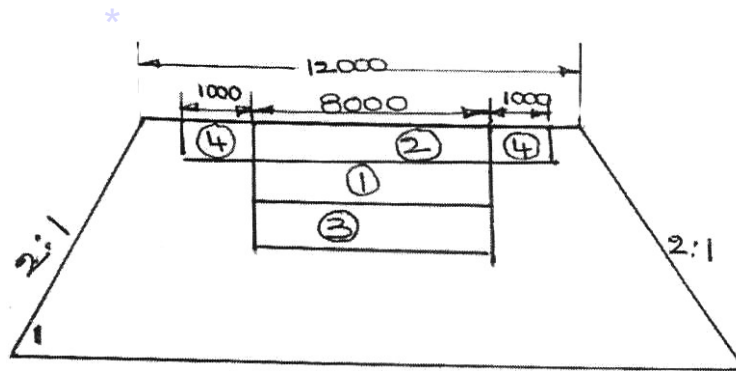*(iv)* Collection of gravel for base, berms and blindage for base course and wearing course

Figure D

(1) 65 mm HBG metal to a compacted thickness of 120 mm (loose thickness of 160 mm).

(2) 40 mm HBG metal to a compacted thickness of 100 mm (loose thickness of 130 mm)

(3) Gravel base to a compacted thickness of 150 mm (loose thinness of 225 mm)

(4) Gravel berms to a compacted thickness of 100 mm (loose thickness 150 mm).

(OR)

(b) The cross section of head wall of pipe culvert is shown Fig. E. Determine the quantities.

   (i) Earth work excavation for foundation

   (ii) Plain cement concrete (1 : 4 : 8) for foundation

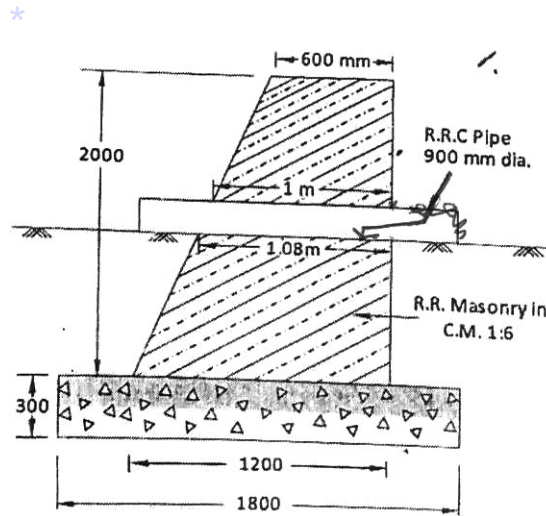   *(iii)* R.R masonry in CM (1 : 6) if the length of the head wall is 7.50 m.

Figure E

13. *(a)* Calculate the following quantities for an overhead tank as shown Fig. F.

    (i) Earth work excavation for column foundation

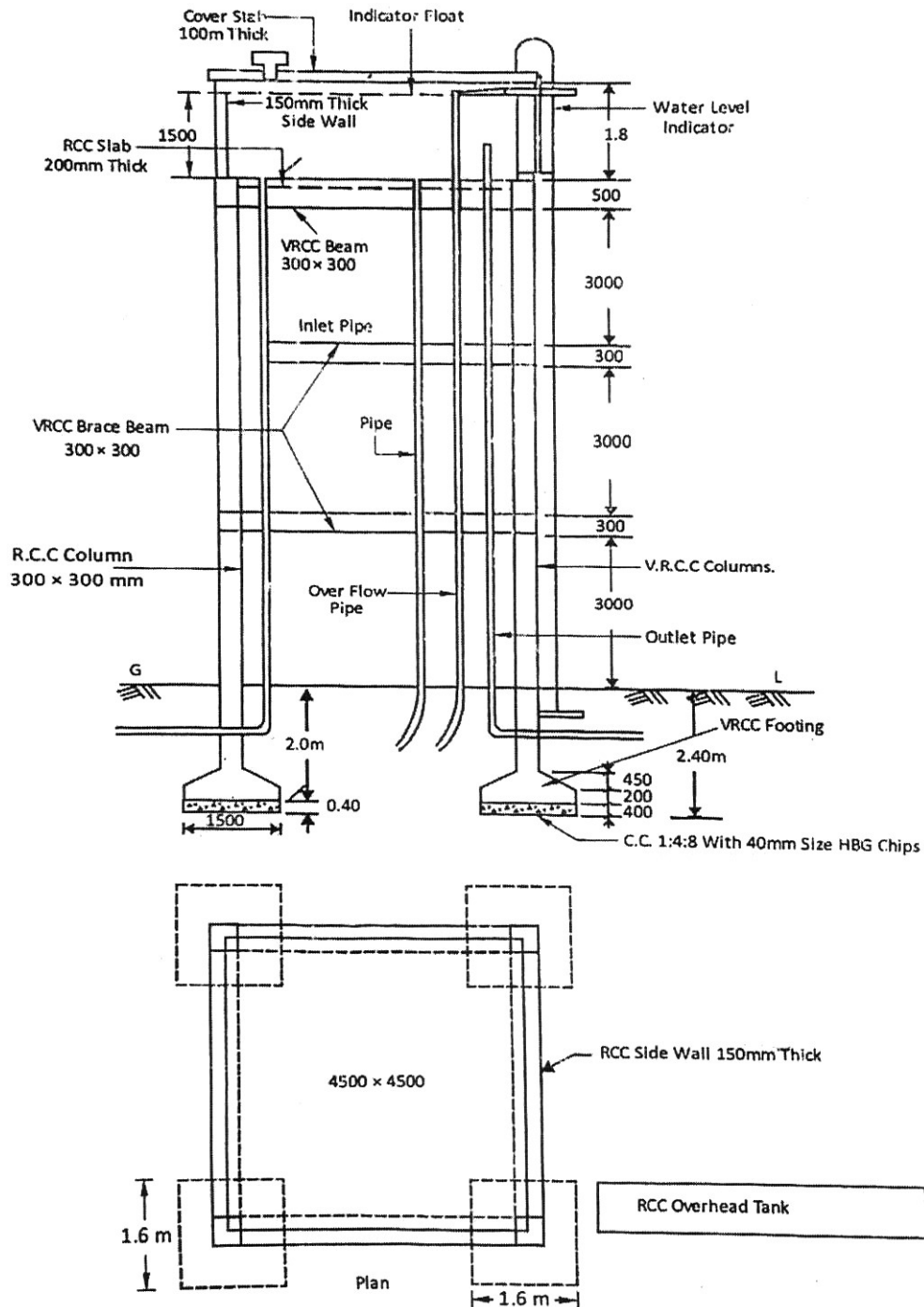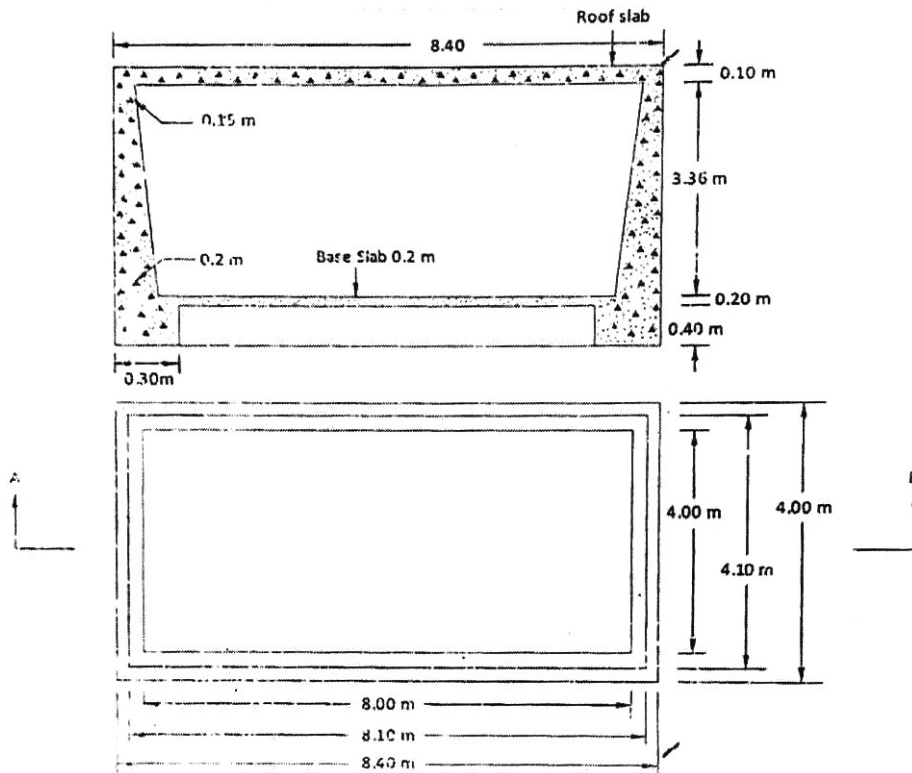   *(ii)* R.C.C (1 : 2 : 4) for cover slab, bottom slab, and side walls

Figure F

(OR)

(b) Calculate the quantities of the following items of R.C.C overhead tank shown Fig. G

  (i) R.C.C Side walls

  (ii) R.C.C. Ring beam.

Figure G

14. (a) A concrete mixer was purchased for ₹1,00,000/- in the year 1992. The salvage value of the machine after 6 years in ₹30,000/-. Calculate the depreciation and book value each year by.

  (i) Straight line method

  (ii) Constant percentage method

(b) The total cost of the newly constructed building is ₹15 lakhs. Find the depreciation cost of building after 25 years by

    (i) Constant percentage method if the scarp value of the Building is ₹1,20,000/-. Assume the life of the building as 80 years.

    (ii) Sinking fund method assuming 5% interest.

15. *(a)* A building recently constructed costing ₹20,00,000/-measuring 100 sq.m in a big city. Prevailing rate of land is ₹50,000/m^2. Determine the net rent of the property if the out goings including sinking fund is ₹35,000/- per year. Calculate also the gross rent of the property per month. Net turn expected by the owner on building at 6% and on the land 4%.

(OR)

(b) Explain the principles of rent fixation.

PART—C

10×1=10

Instructions : (1) Answer the following question.

                      (2) The question carries **ten** marks.

                      (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Prepare the detailed estimate for the following items of work for a slab culvert shown in Figure H.

(a) Earth work excavation for foundation for abutments and returns.

(b) C.C. (1 : 4 : 8) for abutment and returns.
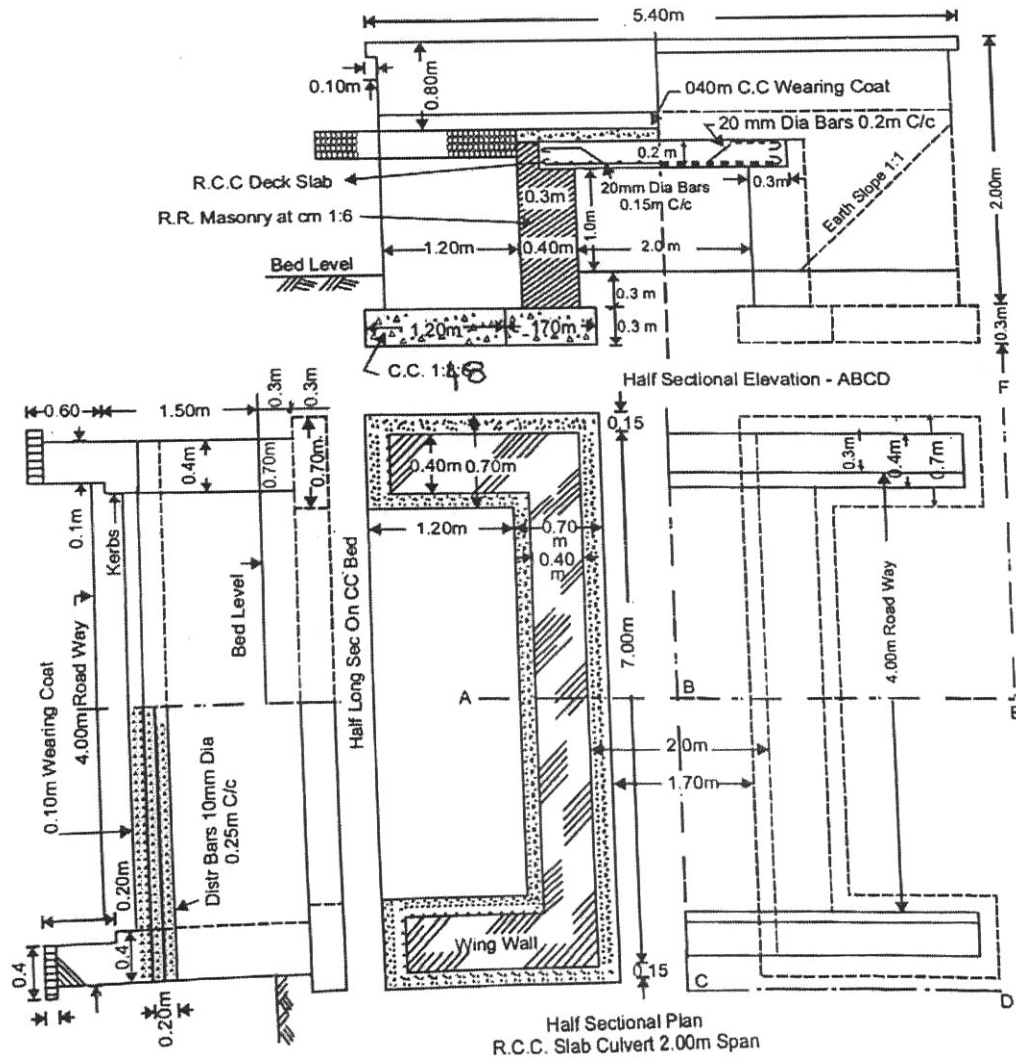
(c) R.C.C. (1 : 2 : 4) for deck slab.

Figure H

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