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C14–C–503

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BOARD DIPLOMA EXAMINATION, (C14)

OCT/NOV—2018

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.

1. List the different types of stair cases.

2. Mention the approximate percentage of steel in RCC elements for—

(a) Beams;

(b) Columns;

(c) Slabs.

3. Write an expression to calculate the length of a two-legged vertical strup in a beam.

4. Write a short note on lead statement.

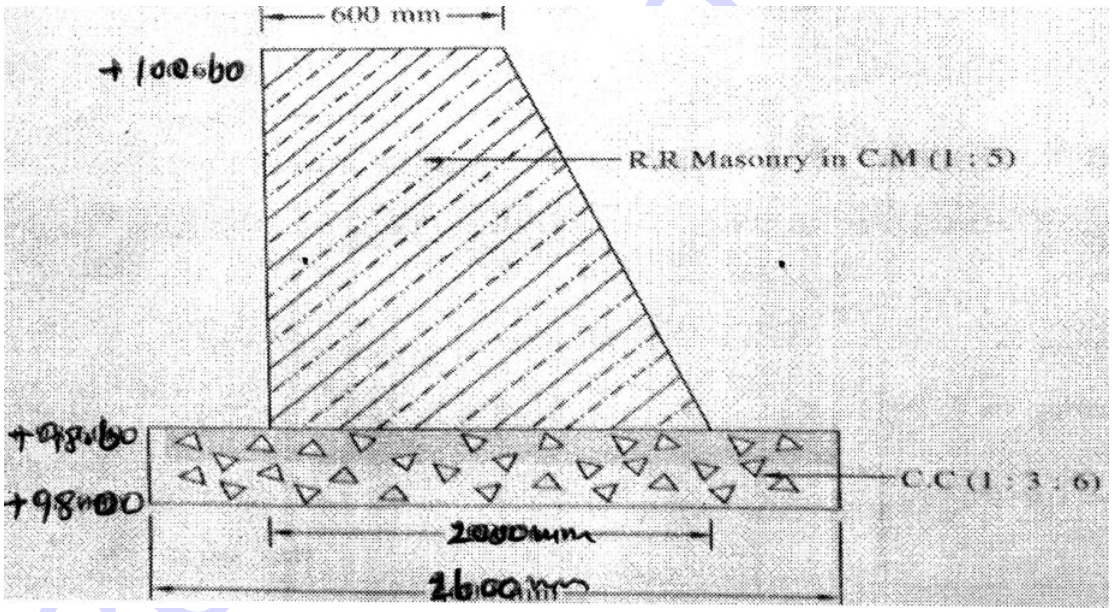
5. Calculate the cost of conveyance of bricks if the lead is 3 km MR and 2 km CT. Take the rate of bricks per 1000 no's as Rs. 1,500 at

source. The conveyance charges are Rs. 12 per 1 km per 1000 bricks.

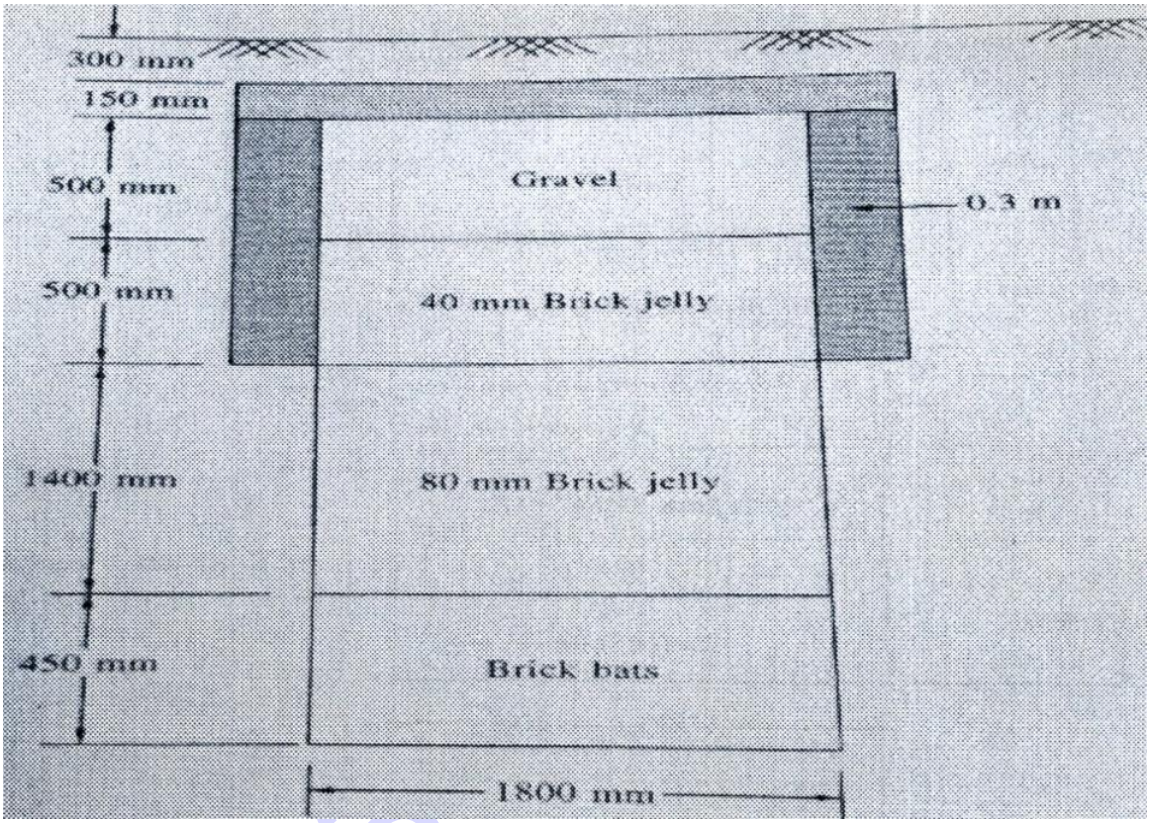
6. Calculate the cement required in no. of bags for preparing CC (1:5:10) using 40 mm HBG metal for 25 m^3 work.

7. Calculate the quantity of earth work for formation of a gravel road of length 1000m. The top width of formation is 8.50m. Side slopes 2 : 1 on either side, the height at 0.0 m is 0.50 m and at 1000m is 0.80m.

8. Calculate the quantity of masonry used for the abutment of culvert shown in fig. below. Take the length of abutment as 5.0m :



9. Calculate the earthwork excavation for a soak pit given below—



10. Calculate the quantity of plastering for a Baffle wall 1m × 0.75m × 0.10m in a septic tank.

PART—B 10×5=50

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

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

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

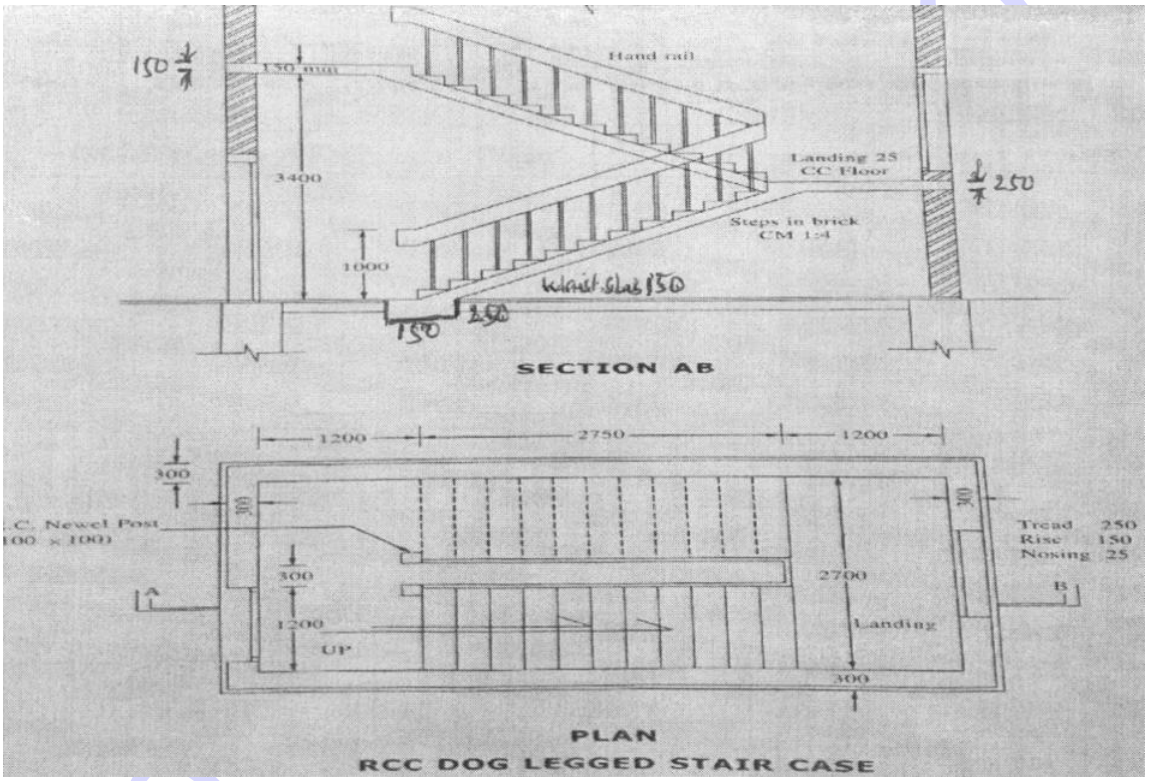
11. For an RCC staircase in fig. given below, calculate the following contents :

(a) RC (1:2:4) for base beam

(b) Waist slab

(c) Top and intermediate landings

(d) Brickwork in CM (1:4) for steps.



12. Prepare the bar bending schedule of a simply supported RCC lintel from the following specifications : Size of lintel 230 mm wide and 200 mm depth.

Main bars in tension zone are of Fe 415 grade 3 nos. of 12 mm dia. of which one bar is cranked through 45° at a distance of L/7 from either ends.

2 Nos. anchor bars of 10 mm dia. at Top.

Two-legged stirrup of 6 mm dia @ 150 mm c/c are provided

Clear span of the lintel is 1500 mm
Bearing on either side is 200 mm
Weight of rods per meter.
12 mm dia–0.89 kg/m
10 mm dia – 0.61 kg/m
6 mm dia – 0.23 kg/mm
Assume all-round clear cover as 25 mm.

13. Prepare a data sheet and claculate the cost of the items given below using lead statements of materials :

(a) CC (1:3:6) using 40 mm HBG metal—1m^3
0.90 m^3 HBG metal 40 mm size
—m^3 Sand
—m^3 Cement
0.06 Nos. Mason I class
0.014 Nos. Mason II class
1.80 Nos. Men Mazdoors
1.40 Nos. Women Mazdoors
LS Sundries

(b) RR Masonry in CM (1:6)–for 1m^3
1.10 Rough stone
0.340 m^3 CM (1:6)
0.54 Nos. Mason I class
1.26 Nos. Mason II class
1.40 Nos. Men Mazdoors
1.40 Nos. Women Mazdoors
LS Sundries

Lead statement of material :

Sl. No.	Materials	Rate at source	Lead	Conveyance charges
1.	40 mm size HBG metal	Rs. 300/- per m^3	10 km	Rs. 15/- per m^3
2.	Sand	Rs. 75/- per m^3	20 km	Rs. 10/- per m^3

3.	Cement	Rs. 1800/- per tonne	3 km	Rs. 1/- per bag
4.	Rough stone	Rs. 250/- per m^3	8 km	Rs. 12/- per m^3

Labour charges per day :

Masons I class = Rs. 420/-

Masons II class = Rs. 380/-

Man mazdoor = Rs. 350/-

Woman mazdoor = Rs. 320/-

Mixing charges Rs. 10/- per m^3

14. Prepare a data sheet and calculate the cost of the items given below using lead statements of materials :

(a) Plastering with CM (1:5) 20 mm thick—10 sq.m

0.21 cu.m CM (1:5)

0.33 Nos. Mason 1st class
0.77 Nos. Mason 2nd class
0.50 Nos. Men Mazdoors.
LS Sundries.

(b) Brick masonry with country bricks in CM (1:6) for $1m^3$

512 Nos. Brick

0.20 m^3 CM (1:6)

0.42 Nos. Mason 1st class

0.98 Nos. Mason 2nd class

0.70 Nos. Men Mazdoors

2.10 Nos. Women Mazdoors

LS Sundries

Lead statement of material

Sl. No.	Materials	Rate at source	Lead in Km			Conveyance charges
			ST	CT	MT	
1.	Bricks	Rs.1600/- per1000Nos.	-	4	25	Upto 20 km Rs.290/-beyond 20 kmsRs. 8/- per km
2.	Sand	Rs.250/-per m^3	2	3	10	For 20 km Rs.160/-
3.	Cement	Rs.3400/-per 1MT	-	-	-	At site

Labour charges per day :

Masons I class = Rs. 160/-

Masons II class = Rs. 140/-

Man mazdoor = Rs. 110/-

Woman mazdoor = Rs. 110/-

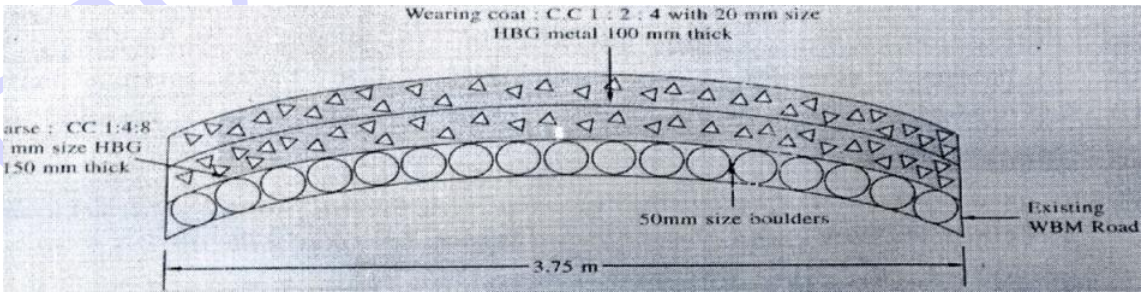
Mixing charges for CM Rs. 20 per m^3

15. Prepare the detailed estimate for the cement concrete road of 1.50 km length for the following items of work as shown in fig. below :

(a) Wearing coat of CC 1:2:4 with 20 mm size HBG metal 150 mm thick

(b) Base course of CC 1:4:8 with 40 mm size HBG metal 150 mm thick.

(c) Spreading of 50 mm size of boulders of 150 mm thick.

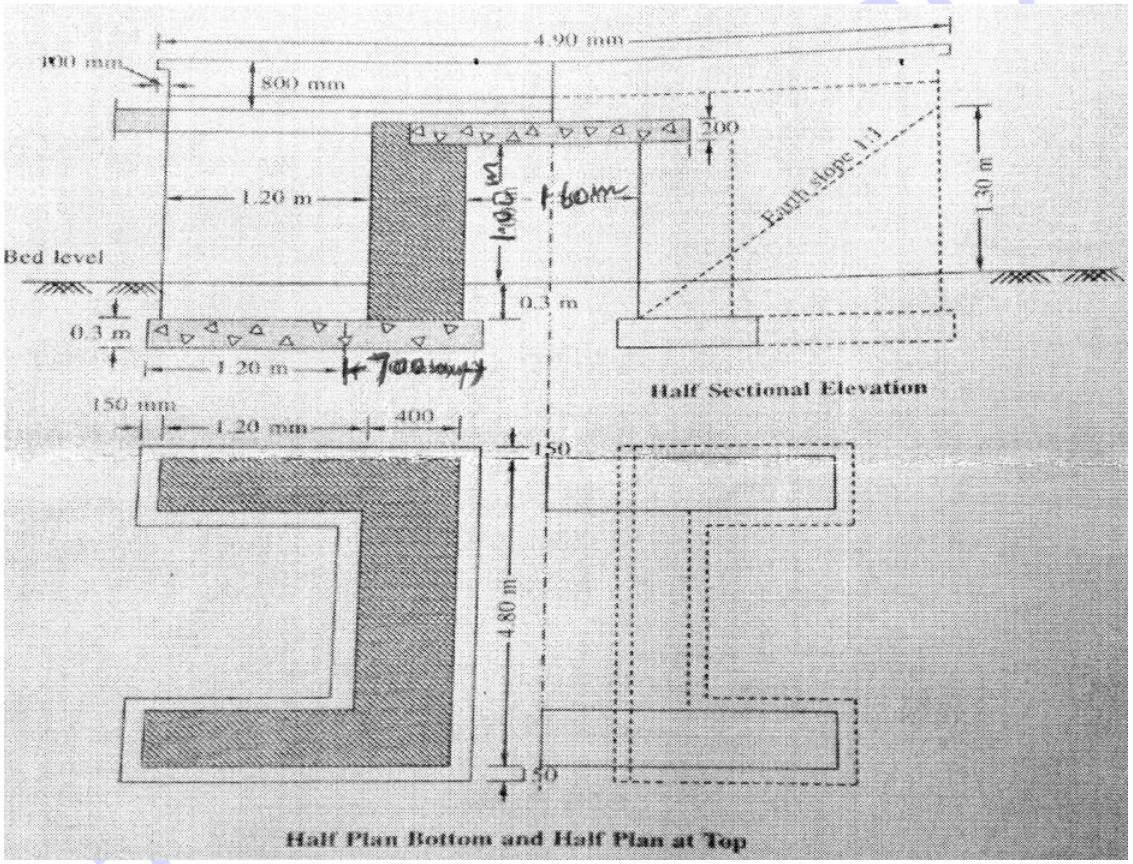


16. Prepare the detailed estimate for the following items of work from the slab culvert given below :

(a) Earthwork excavation for abutments and wing walls

(b) BM in CM (1:4) for abutments and wing walls

(c) RCC (1:2:4) for deck slab of thickness 200 mm bearing on either side.

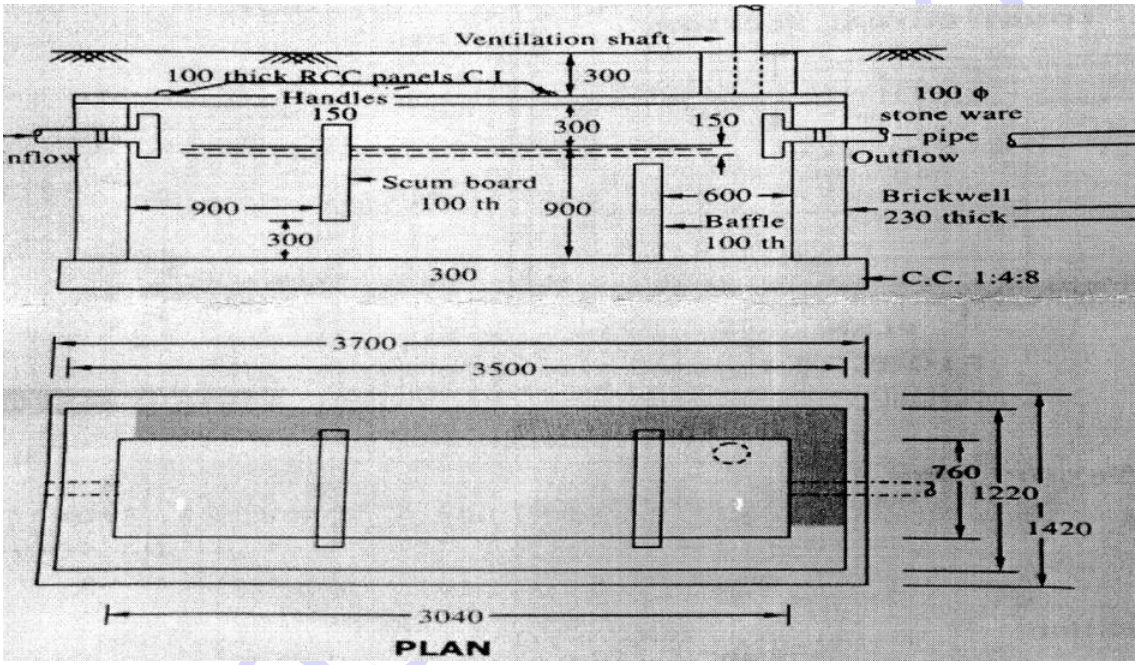


17. Calculate the quantities of the following items of a septic tank shown in fig. below :

(a) Volume of earthwork excavation

(b) Volume of RCC slab for cover

(c) Plastering inside the tank for walls



18. Prepare the estimate for the following items of work from the plan and sectional elevation of an Overhead RCC tank as shown in fig. below.

(a) Earth work excavation for foundation in hard gravel soils.

(b) R.C.C. (1:2:4) using 20 mm HBG metal footings and columns.

(c) R.C.C, (1:1½:3) using 20 mm HBG metal for bootom slab, top slab and side walls

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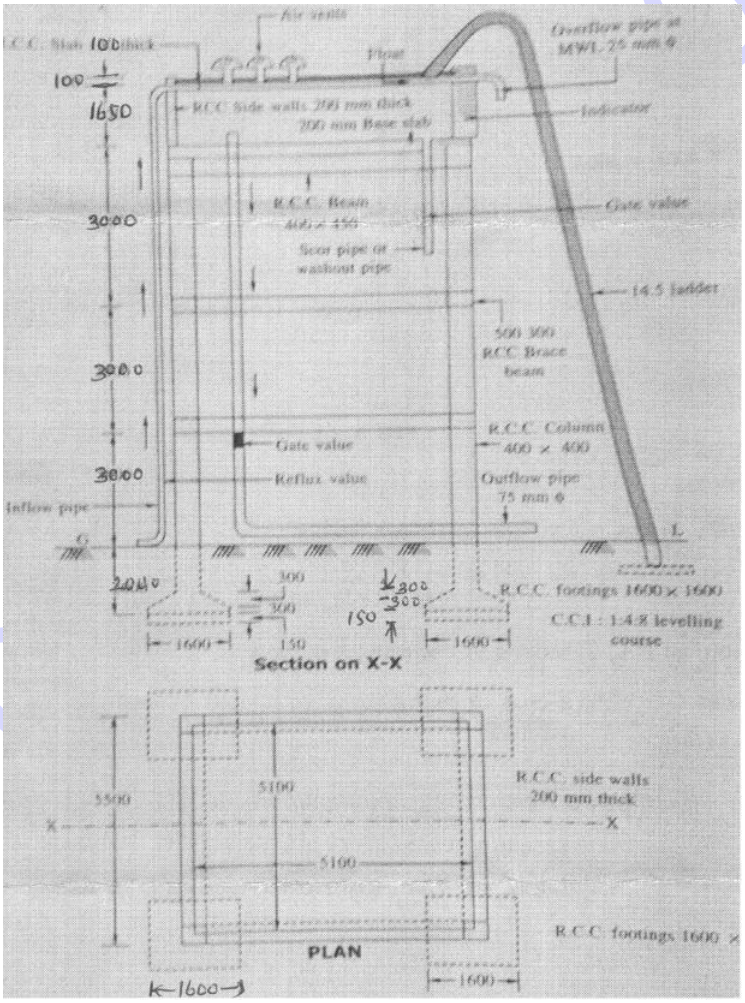

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