



C14-C-503

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

DCE - V SEMESTER EXAMINATION

QUANTITY SURVEYING - II

Time : 3 Hours]

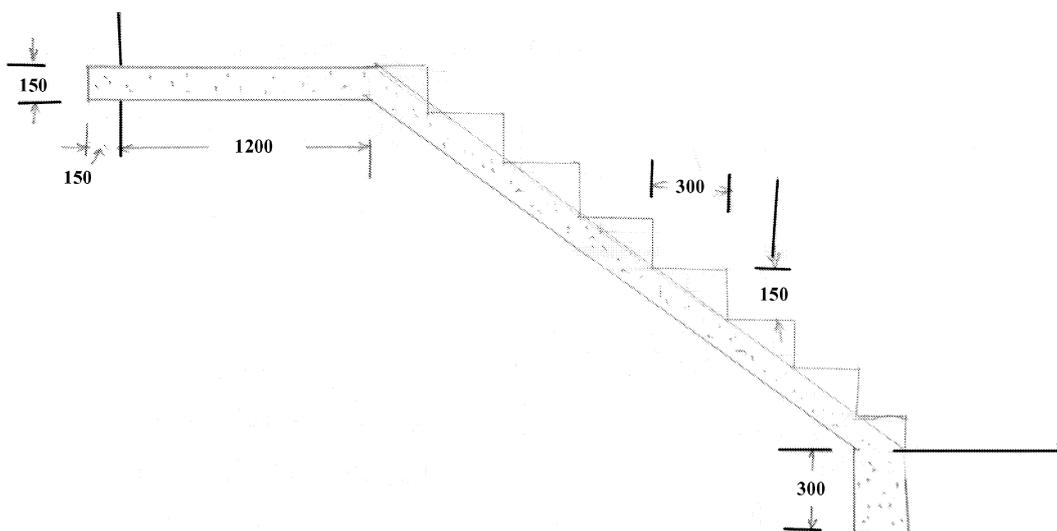
[Total Marks : 80

PART - A

3×10=30

- Instructions :**
- (1) Answer **ALL** questions.
  - (2) Each question carries **THREE** marks.
  - (3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1 For a given staircase of width 1.2 m, find the quantity of R.C.C. M<sub>20</sub> grade for waist slab. Width of staircase = 1.2 m.

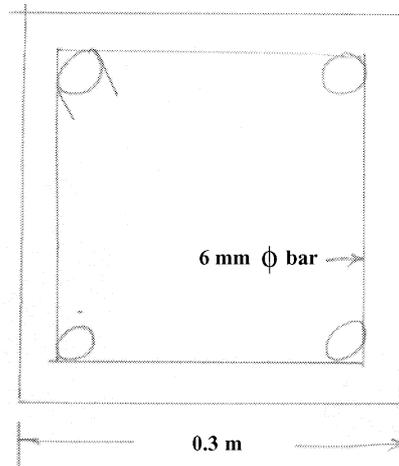


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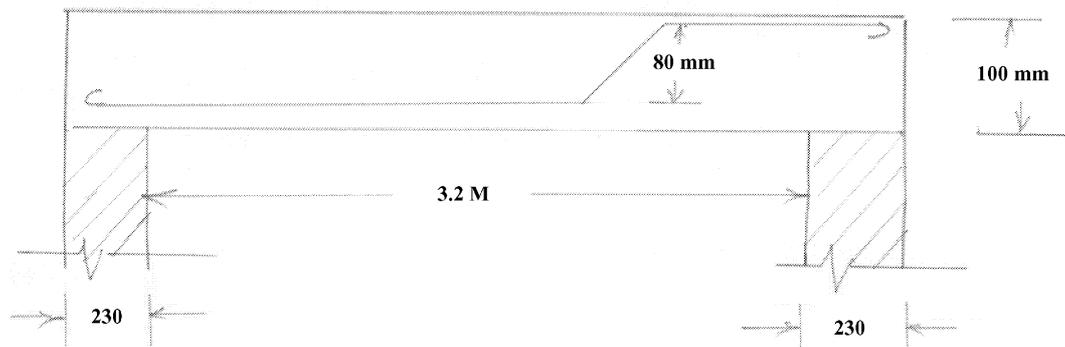
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- 2 Find the length of 6 mm diameter bar as shown in the figure. If the size of column is  $300 \times 300$  mm. Assume 40 mm clear cover for main reinforcement.

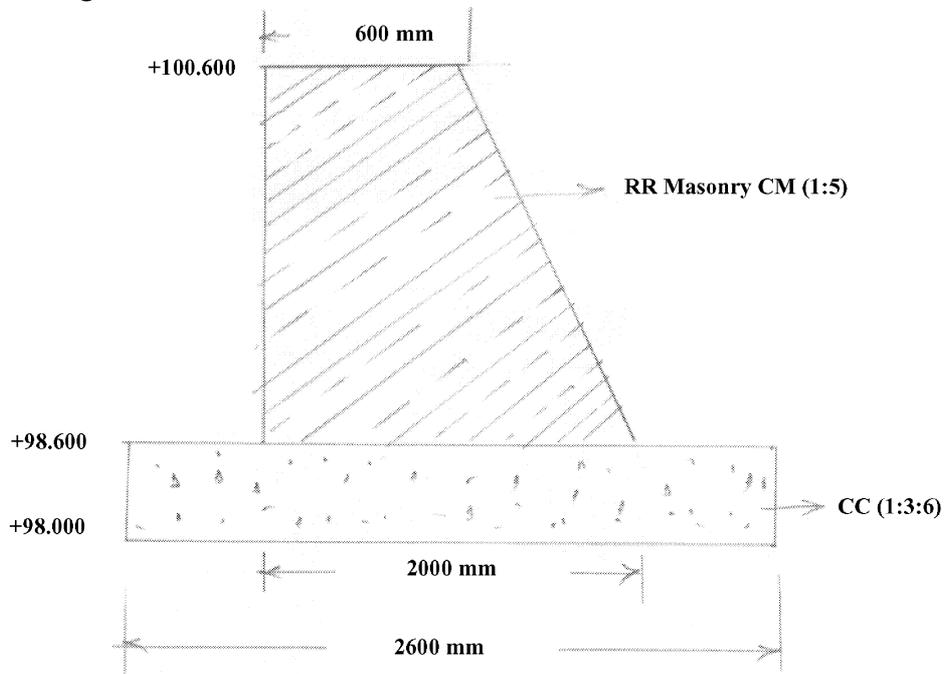


- 3 Calculate the length of steel rod of 10 mm dia. as shown in fig. Assume end cover as 20 mm.



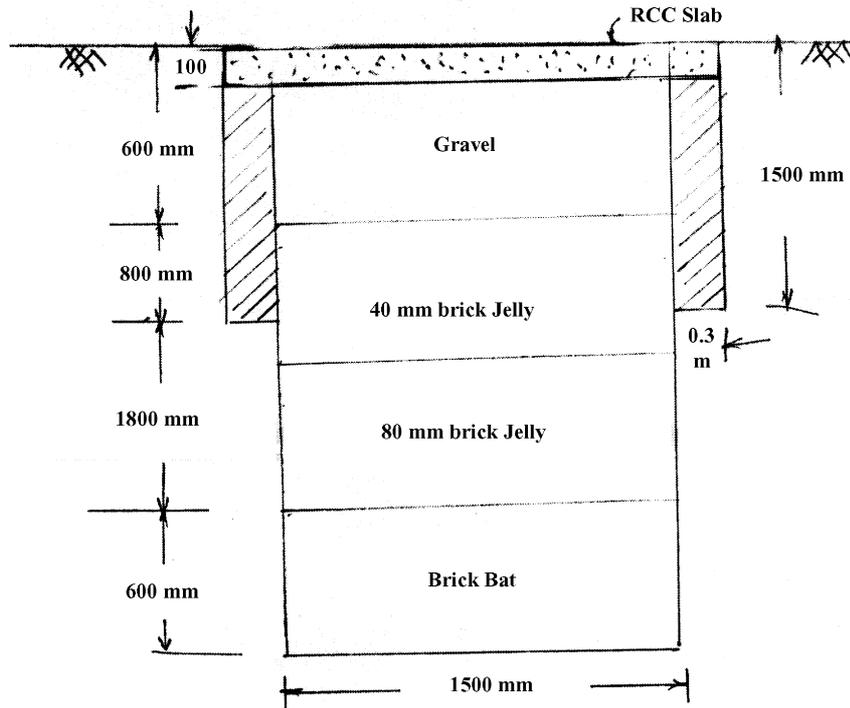
- 4 Explain briefly the analysis of rates and standard data book.

- 5 Calculate the quantity of cement required in bags for a CRS masonry in CM (1:6) using granite stone for  $15 \text{ m}^3$  of work if  $0.42 \text{ m}^3$  of cement mortar is required for  $1 \text{ m}^3$  of masonry.
- 6 Define : (a) Cost of materials at site.  
(b) Cost of materials at source.
- 7 Calculate the following quantities of abutment of a culvert as shown in fig. Take the abutment as 5.0 m.

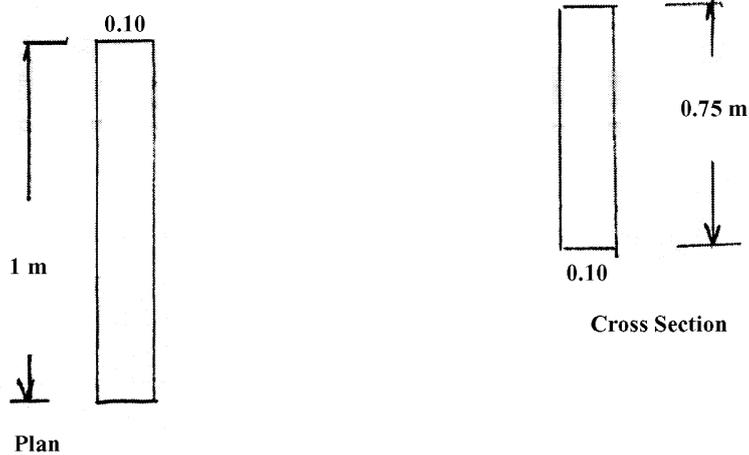


- (a) CC Bed under Abutment.  
(b) Masonry used in Abutment.
- 8 Calculate the quantity of gravel to be collected for granular shoulders on either side of the WBM road having length 200 m. Width of shoulders is 1.00 m, compacted Thickness of 100 mm (Loose thickness 150 mm).

- 9 A cross section of a circular soakpit of 1.50 m dia. shown in fig.
- Calculate the quantity of 80 mm brick jelly.
  - Calculate the quantity of RCC slab for cover.



- 10 The size of a scum board of a Septic Tank are  $1 \times 0.75 \times 0.10$  m. Calculate the area of Plastering.



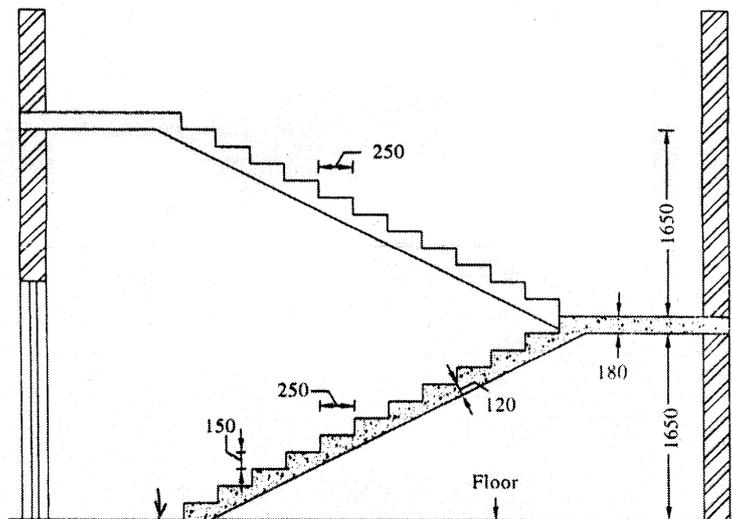
## PART - B

10×5=50

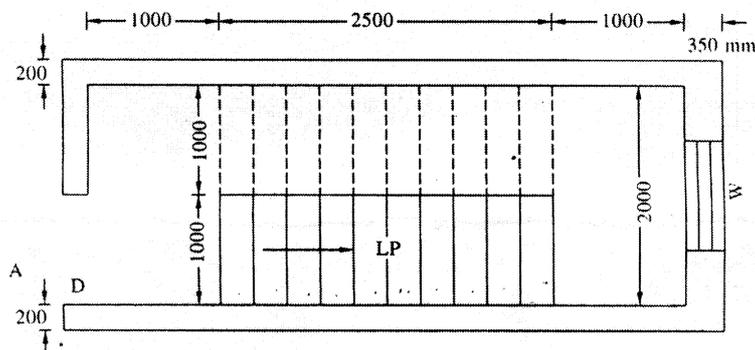
- Instructions :**
- (1) Answer any **FIVE** questions.
  - (2) Each question carries **TEN** marks.
  - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.
  - (4) Assume any suitable data if missing.

11 Prepare the detailed estimate for the doglegged staircase as shown in the figure for the following items of work :

- (a) RCC (1:2:4) with 20 mm HBG metal for
  - (i) Toe wall
  - (ii) Waist slab for I & II flights
  - (iii) Landing middle and first floor (full bearing).
- (b) Nosing 2.5 cm for steps



0.45  
0.35  
Elevation on Section - AA



PLAN

**12** Calculate the quantities of steel in RCC simply supported beam of clear span 3.6 m. The walls supporting the beam are 230 mm with full bearing on both sides. Size of the beam is 230 mm × 300 mm. Concrete cover at ends of bars and sides 40 mm and that of top and bottom is 30 mm each. The reinforcement details of the beam are given below :

- (a) Main straight bars at bottom - 12 mm $\phi$  2 nos
- (b) Main bent up bars - 12 mm $\phi$  - 2 nos
- (c) Top Anchor bars - 12 mm $\phi$  - 2 nos
- (d) Stirrups 6 mm $\phi$  @ 150 mm centre to centre.

Given weight of bars : 12 mm – 0.89 kg/m; 6 mm – 0.22 kg/m.

**13** Find the cost of CM (1:3) for 1 m<sup>3</sup> from the following details :

S.No.	Material	Cost at Source	Lead	Transportation Charges
1	Cement	Rs. 110/- per kN	10 km (MR)	Rs. 1.50/kN/km
2	Sand	Rs. 35/- per m <sup>3</sup>	12 km (C.T.)	Rs. 2.00/m <sup>3</sup> /km

Mixing charges Rs. 9.20 m<sup>3</sup>.

**14** Prepare data sheet and calculate the cost of items given below :

- (a) Cement concrete (1:4:8) using 40 mm HBG metal - 1 m<sup>3</sup>.  
 (b) RR Masonry in CM (1:6) - 1 m<sup>3</sup>.

**Materials and Labour required for 1 m<sup>3</sup>**

**CC (1:4:8)**

0.92 m<sup>3</sup> HBG metal

0.48 m<sup>3</sup> Sand

0.115 m<sup>3</sup> Cement

0.20 nos Mason

3.20 nos Mazdoor

LS Sundries

**RR Masonry in CM (1:6)**

1.10 m<sup>3</sup> Rough stone

0.34 m<sup>3</sup> CM (1:6)

1.80 nos Mason

2.8 nos Mazdoors

LS Sundries

**Lead Statement of Materials :**

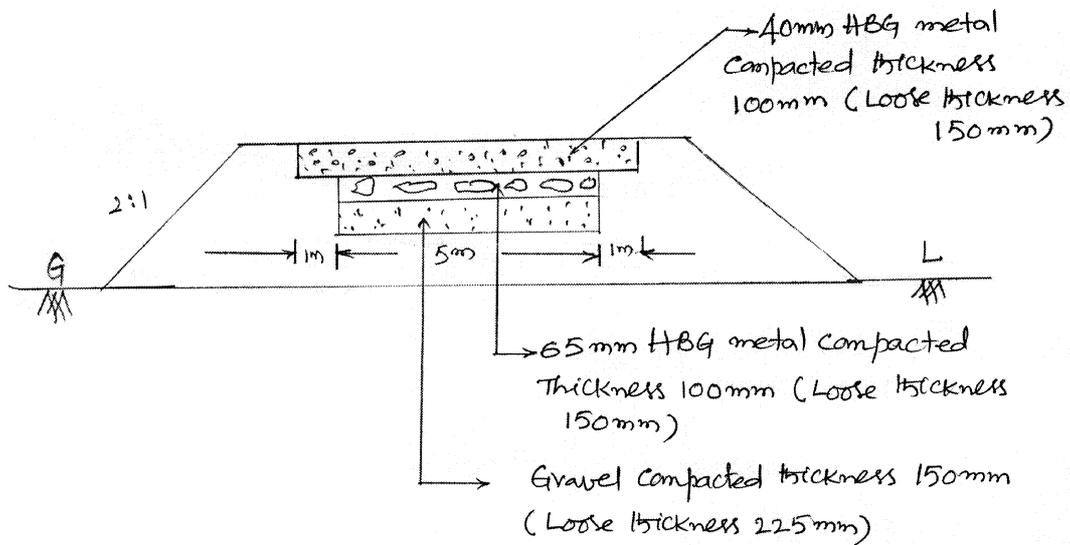
S.No.	Materials	Rate	per	Lead	Conveyance Charge
1	40 mm size HBG metal	42-50	1 m <sup>3</sup>	10 km MR	Rs. 2/- per km
2	Sand	4-00	1 m <sup>3</sup>	8 km MR	Rs. 2/- per km
3	Rough Stone	16-50	1 m <sup>3</sup>	5 km MR	Rs. 3/- per km
4	Cement	1200-00	1 Tonne	At Site	

**Labour Charges per day :**

- (1) Mason I class = Rs. 23/-  
 (2) Mason II class = Rs. 17/-  
 (3) Mazdoor = Rs. 12.50/-  
 (4) Hand mixing charges of CM per m<sup>3</sup> = 4.00.

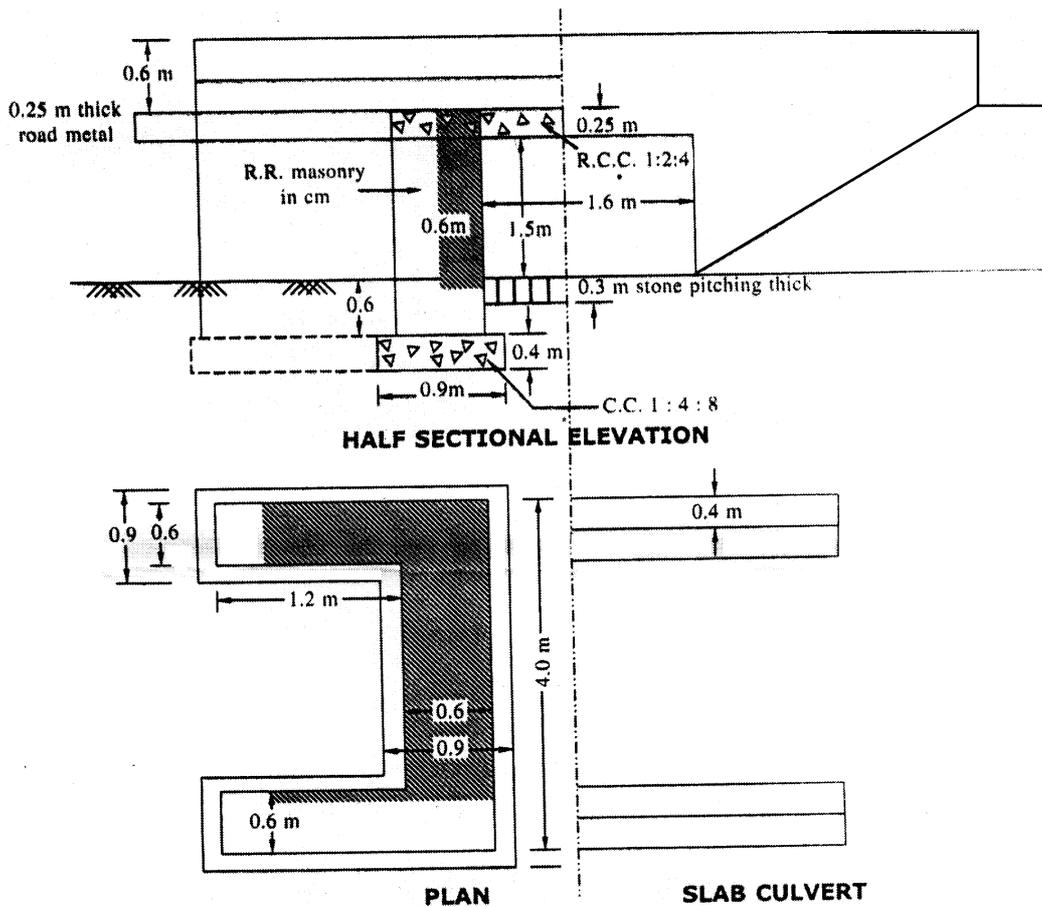
15 A WBM Road is proposed to be laid as shown in fig. Calculate the following items for a length of 1 km road.

- Quantity of gravel required for base course.
- Quantity of 65 mm HBG metal required.
- Quantity of 40 mm HBG metal required.
- Spreading of gravel, 65 mm HBG metal and 40 mm HBG metal.



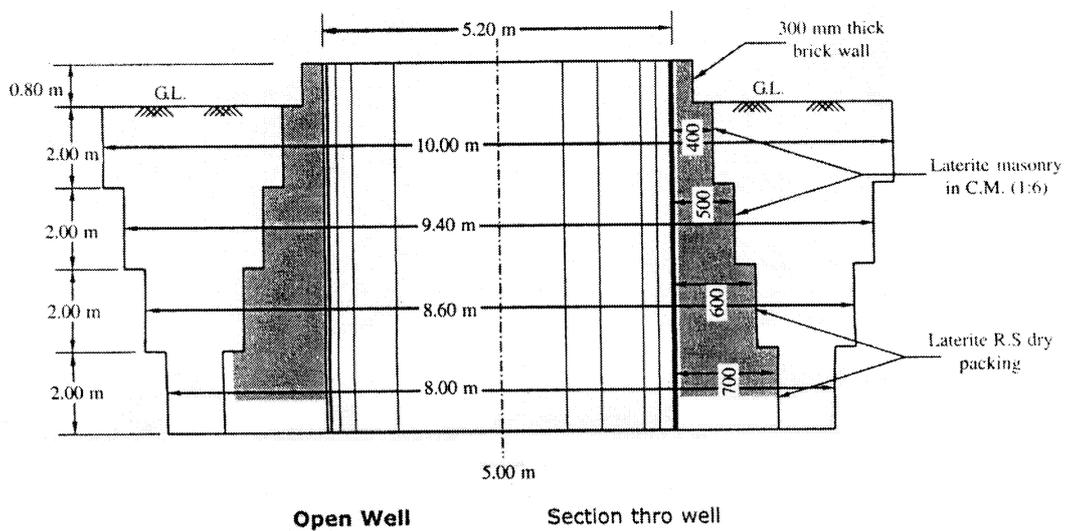
16 Calculate the quantities for the following items of work of an RCC slab culvert as shown in the fig.

- (a) Earth work excavation for foundations.
- (b) RR Masonry in CM (1:3) for abutments and returns upto bottom of Deck slab.



17 Calculate the quantities for the following items of work for an open well shown in fig.

- (a) Earth work excavation for open well.
- (b) Refilling the excavated soil around the steining.



18 Calculate the following quantities for a Septic Tank as shown in the fig.

- (a) Earth work excavation.
- (b) RCC work (1:2:4) with 20 mm HBG metal for top cover slab, for baffle wall and for scum board.

