



c09-c-404

**3425**

**BOARD DIPLOMA EXAMINATION, (C-09)  
SEPTEMBER/OCTOBER - 2020  
DCE—FOURTH SEMESTER EXAMINATION  
QUANTITY SURVEYING**

Time : 3 hours ]

[ Total Marks : 80

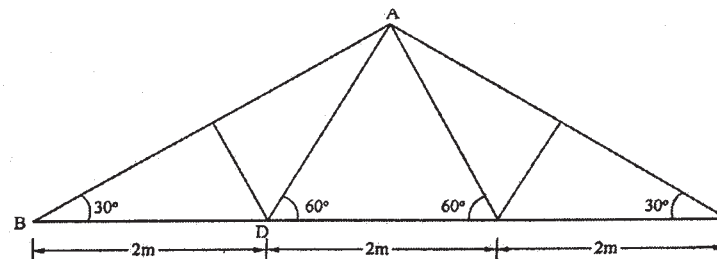
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**PART—A**

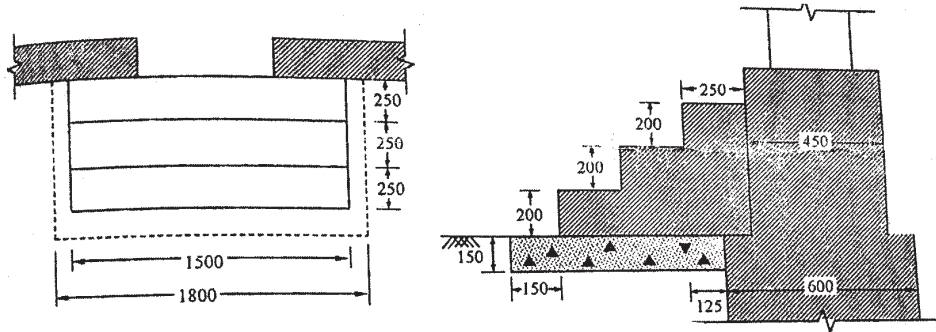
3×10=30

- 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 missing data suitably.

1. State any four rules for measurement of civil works.
2. State different types of estimates.
3. Calculate the steel required for the following items of simple steel truss shown in figure below :  
(a) Principal rafter AB @0.108 kN/m  
(b) Tie AD @0.054 kN/m

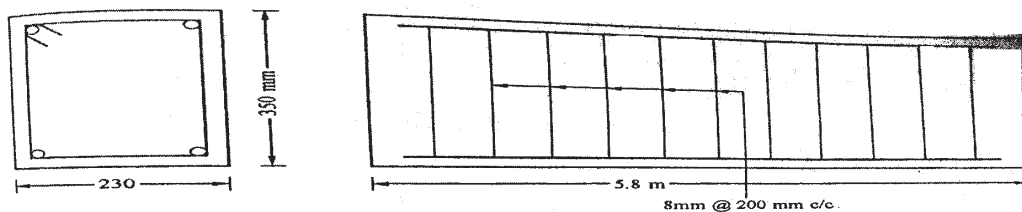


4. The plan and section of steps are given in figure below. Calculate the quantity of brick masonry required for steps.



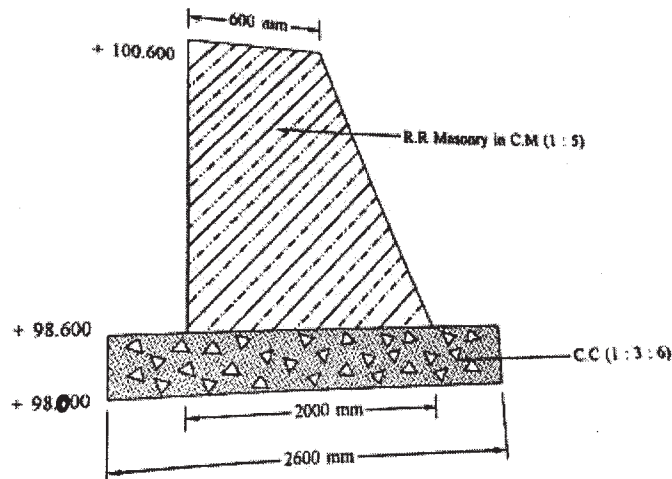
5. Calculate the quantity of cement required in bags for brick masonry in CM(1:5) for 12 cum of work if 0.34 cum of CM is required for 1 cum of brick masonry.

6. Calculate the total weight of stirrups of 8 mm dia for a simply supported beam shown in the figure below. The dimensions of beam are 230 mm 350 mm. The spacing of stirrups is 200 mm C/C. Total length of beam is 5.8 m and unit weight of rod is 0.41 kg/m.



7. State the methods of calculation of the volume of earth work.

- \* 8. Calculate the quantity of R. R. Masonry in abutment of length 5 m of a culvert as shown in figure below.



9. State different methods of valuation.

10. A building is recently constructed, costing ₹ 15,00,000 in the land measuring 100 sqm in a big city. Prevailing rate of land is ₹ 6,000 per sqm. Determine the net rent of the property if the outgoings including sinking fund is ₹ 36,000 per year, calculate also the gross rent of the property per month, net return expected by the owner on building @6% and on the land @4%.

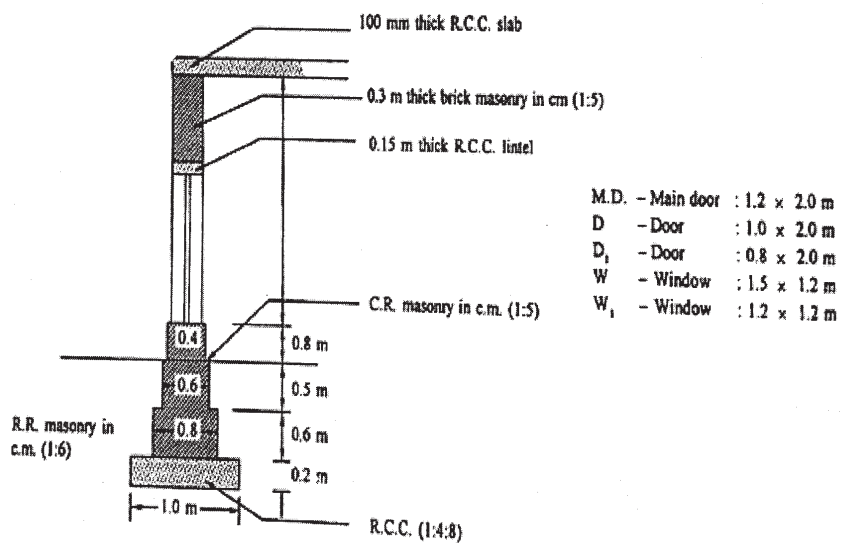
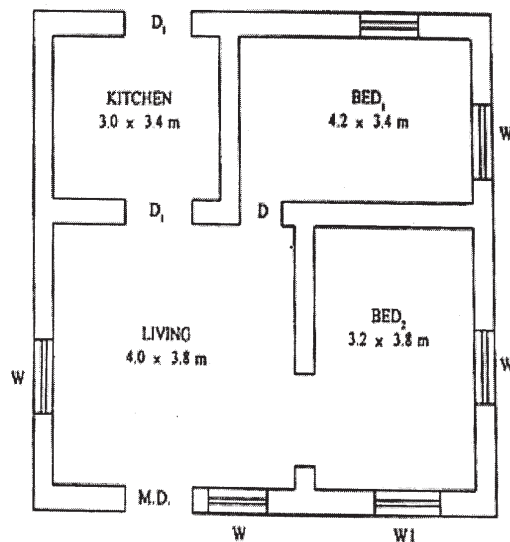
**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
 (2) Each question carries **ten** marks.  
 (3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

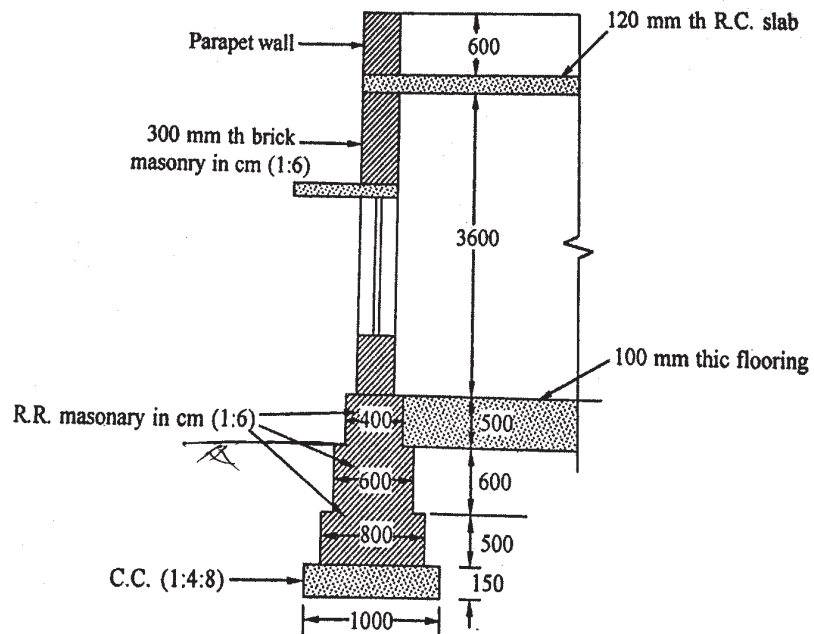
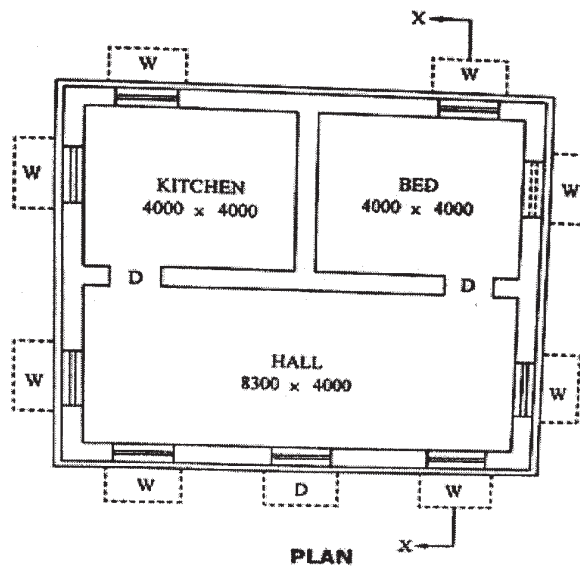
**11.** Prepare the detailed estimate of quantities for the building shown in the figure for the following items :

- (a) Earthwork excavation for foundation 3  
 (b) RR masonry in CM(1:5) for footings 3  
 (c) Brick work in CM(1:5) for super structure 4



\* 12. Calculate the quantities of the following items for the building shown in figure :

- |  |   |
|--|---|
| (a) Sand filling in basement                     | 3 |
| (b) Cement concrete in bed filling in foundation | 3 |
| (c) Plastering to parapet wall                   | 4 |



- \* 13. Prepare the data sheet and calculate the cost of the following item of works :

(a) Brick masonry in CM(1:5) unit-1 m<sup>3</sup>

512 Nos.	Bricks
0.34 cum	CM(1:5)
0.42 Nos.	Mason I Class
0.98 Nos.	Mason II Class
0.70 Nos.	Man mazdoors
2.10 Nos.	Woman mazdoors
L.S.	Sundries

(b) Plastering with 20 mm thick in CM(1:4) unit-10 m<sup>2</sup>

0.21 cum	CM(1:4)
0.66 Nos.	Mason I Class
1.54 Nos.	Mason II Class
0.50 Nos.	Man mazdoors
3.20 Nos.	Woman mazdoors
L.S.	Sundries

Lead statement of materials :

Sl. No.	Material	Cost at source	Per	Lead	Conveyance Charges
1	Brick	₹ 2,500	1000 Nos	12 km	₹ 5 per 1000Nos
2	40 mm HBG metal	₹ 322	1 m <sup>3</sup>	14 km	₹ 3.00/km/m <sup>3</sup>
3	Sand	₹ 86	1 m <sup>3</sup>	18 km	₹ 3.60/km/m <sup>3</sup>
4	Cement	₹ 3,600	1 TN	6 km	₹ 2.0/bag/m <sup>3</sup>

Labour charges :

Mason I Class	₹ 500/day
Mason II Class	₹ 450/day
Man mazdoors	₹ 400/day
Women mazdoors	₹ 400/day
Mixing charges of CM	₹ 50/cum

\* **14.** Prepare a data sheet for the following items of works :

(a) Flooring with 25 mm thick polished stone of 1st quality of size not exceeding 400 mm 400 mm, laid over set in CM(1:10) 16 mm thick base coat—Unit 10 sqm.

Materials and labour required for flooring :

10.10 sqm.	Polished stone
0.12 cum.	CM(1:10)
0.96 Nos.	Mason I Class
2.24 Nos.	Mason II Class
2.20 Nos.	Man mazdoors
1.10 Nos.	Woman mazdoors
L.S.	Sundries

(b) Painting with white cement paint 1st quality two coats to walls after surface is thoroughly cleaned including cost and conveyance of materials to site, etc., Unit 10 sqm.

Materials and labour required for painting :

3.5 kg	White cement paint
0.15 Nos.	Mason I Class
0.35 Nos.	Mason II Class
0.50 Nos.	Man mazdoors
1.00 Nos.	Woman mazdoors
L.S.	Sundries

Lead statement of materials :

Sl. No.	Materials	Cost at source	per	Lead	Conveyance charges
1	Polished stone	₹ 1,650	10 sqm	8 km	₹ 10/10 sqm
2	White cement paint	₹ 15	1 kg	local	
3	Sand	₹ 250	1 m <sup>3</sup>	20 km	₹ 8/m <sup>3</sup>
4	Cement	₹ 3,400	1 MT	4 km	₹ 3.0/bag/m <sup>3</sup>

\* Labour charges :

Mason I Class	₹ 500/day
Mason II Class	₹ 450/day
Man mazdoors	₹ 400/day
Woman mazdoors	₹ 400/day
Mixing charges of CM	₹ 50/cum

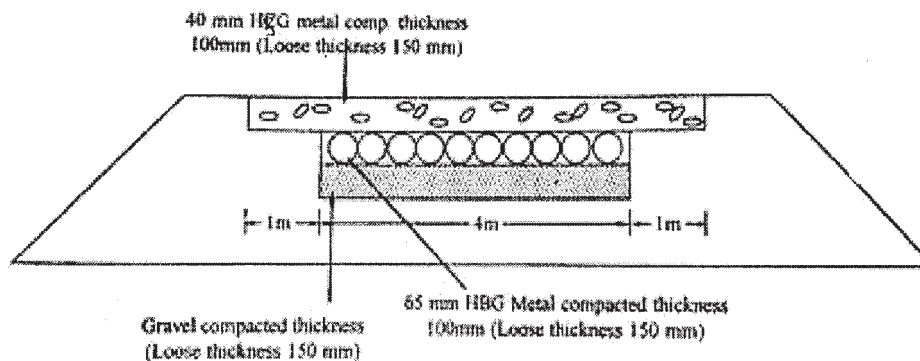
- \* 15. The road has the following data :

Chainage (in m)	0	30	60	90	120	150	180
RL of ground level (in m)	98.20	97.80	98.00	98.40	98.50	98.30	98.90

The formation level may be taken as 100 mts constant from 0 mt to 180 mts chainages. The formation width of road is 8 m and the side slope in embankment 2:1. Assuming transverse slope of the ground is in level. Calculate the volume of earthwork by (a) trapezoidal rule and (b) prismoidal rule.

16. A WBM road is proposed to be laid as shown in figure. Calculate the following items for a length of 1 km :

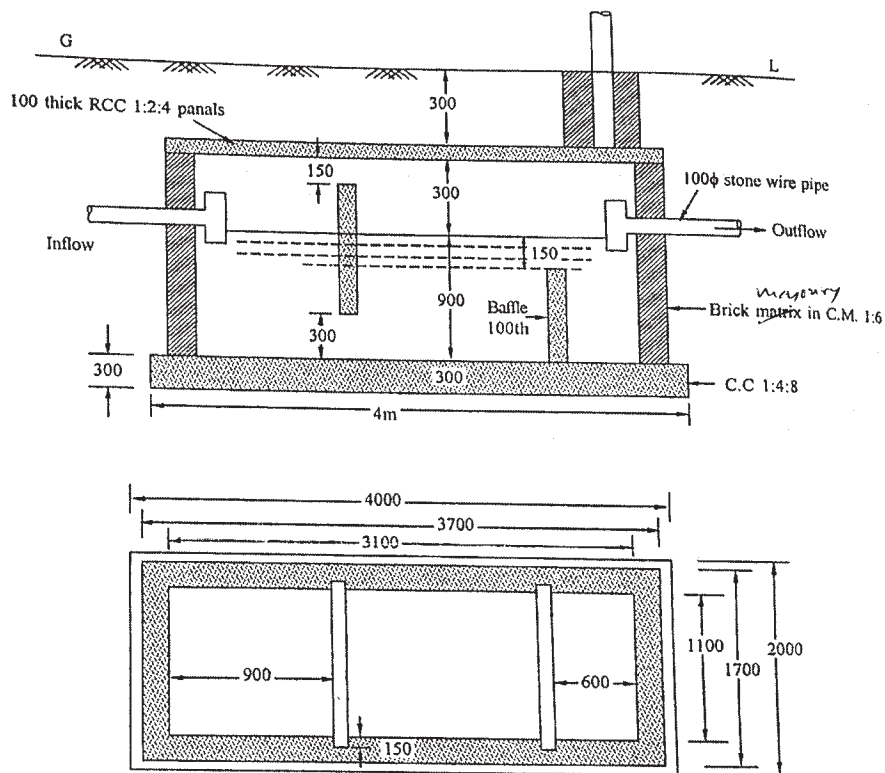
- Quantity of gravel required for base course
- Quantity of 65 mm HBG metal required
- Quantity of 40 mm HBG metal required
- Spreading of 40 mm HBG metal
- Spreading of 65 mm HBG metal





\* 17. Calculate the quantities for the following items of work for septic tank shown in the figure :

- |  |   |
|--|---|
| (a) Earthwork excavation   | 2 |
| (b) Brick masonry in CM(1:6) all-round the septic tank           | 2 |
| (c) Precast RCC slab for roof                                    | 2 |
| (d) Precast RCC for baffle walls and scum board of 100 mm thick. | 4 |



\* 18. A residential building was constructed 20 years back on a plot of area 223 sqm. The plinth area of building is 62 sqm. The present cost of construction of the building is 8,00,000. The cost of land is 3500 per sqm. The rate of depreciation of the building is 1%. Calculate the total value of the property.

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