



c16-c-403

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BOARD DIPLOMA EXAMINATION, (C-16)
JANUARY/FEBRUARY—2022
DCE - FOURTH SEMESTER EXAMINATION
QUANTITY SURVEYING

Time : 3 hours]

[Total Marks : 80

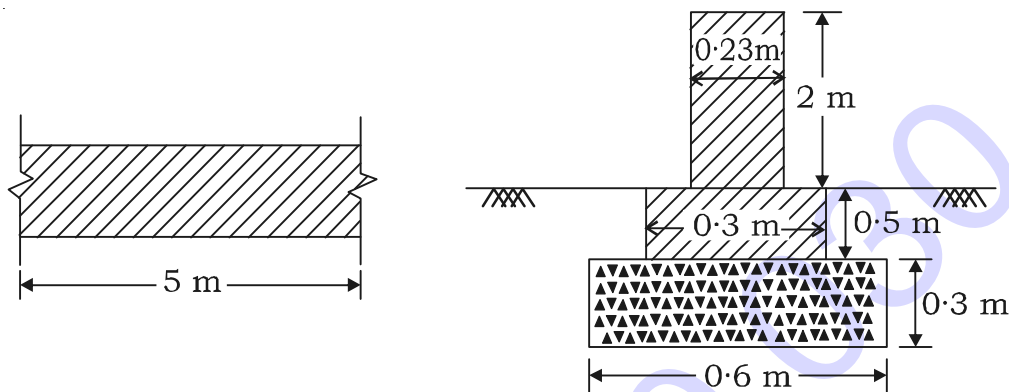
PART—A

3×10=30

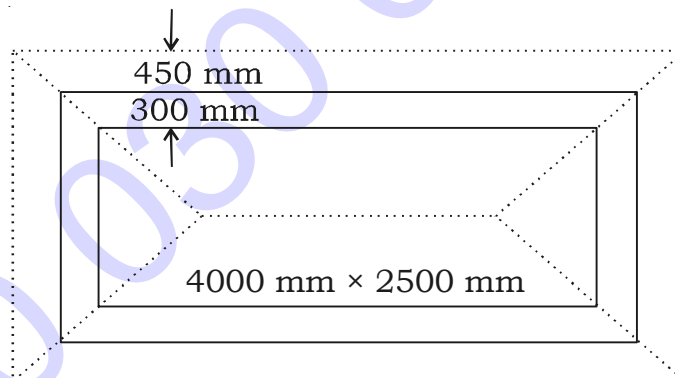
- Instructions :**
- (1) Answer **all** questions.
 - (2) Each question carries **three** marks.
 - (3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. What is meant by estimation? State any two needs for estimation.
2. Prepare the total cost of the building by Plinth area method with the following data :
 - (a) Plinth area of the building = 200 m²
 - (b) Plinth area rate = ₹ 18,000 per m²
 - (c) 25% of building cost is allowed for different provisions of water supply, sanitation, electrical installations, P. S. and contingencies etc. put together.

3. Plan and section of a part of compound wall is shown in Fig. 1.
- (a) Calculate the quantity of cement concrete required for foundation.
- (b) Calculate the quantity of brick masonry required for footing and wall.



4. From the accompanying Fig. 2 of sloped roof, calculate
- (a) length of common rafter and
- (b) number of common rafters.



Slope of roof 1/3 span

Spacing of common rafters 400 mm C/C

5. Define (a) standard data book and (b) standard schedule of rates.
6. Calculate the length of steel rod 10 mm dia used in one way slab, given the clear span of the slab is 3.20 m, width of support is 230 mm, thickness of slab is 130 mm and the rod is cranked in one side only. (Assume end cover as 25 mm and effective cover at top and bottom as 25 mm)

7. Find the volume of earth work in an embankment of length 1 km, top width of a road is 6.0 m and depth is 3.0. The side slopes are 2 : 1.
8. Calculate the following quantities of abutment of a culvert shown in Fig. 3. Take the length of abutment as 5.0 m.
- (a) C. C. bed under abutment
- (b) Masonry used in abutment

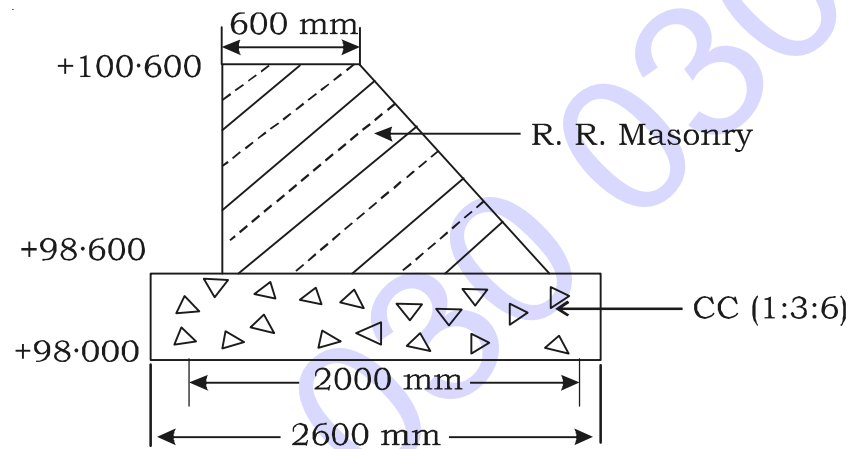


Fig. 3

9. Write a short note on salvage value.
10. The cost of a building including cost of land is ₹ 1,00,000. The owner expects 10% return. If the expenditure on all outgoings including sinking fund is ₹ 5,000. Find the gross rent of property per month.

PART—B

10×5=50

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

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

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

11. From Fig. 4 calculate the quantities of the following items of work :

(a) Earthwork excavation for foundation

- * (b) R. R. masonry in C. M. (1 : 6) for footing basement
- (c) Plastering to ceiling with C. M. (1 : 3)

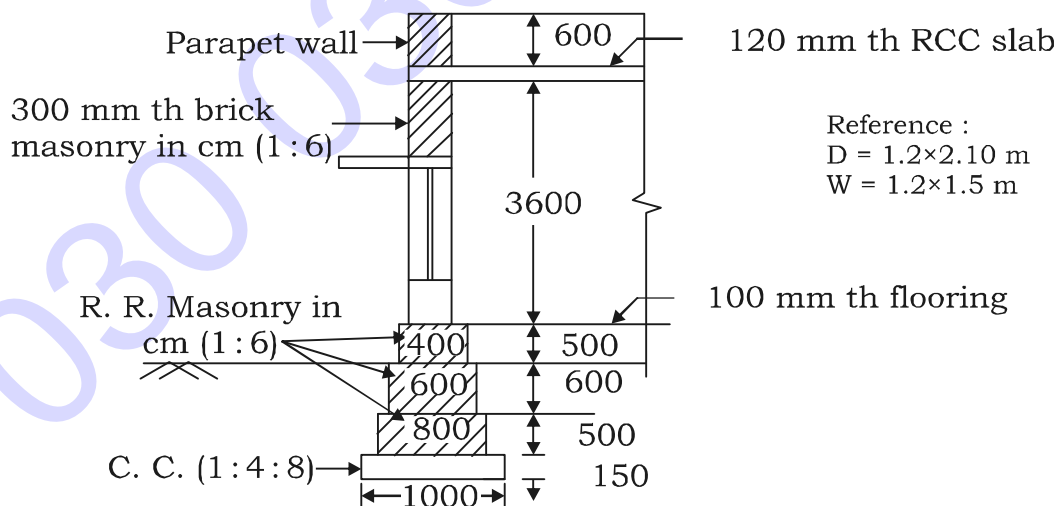
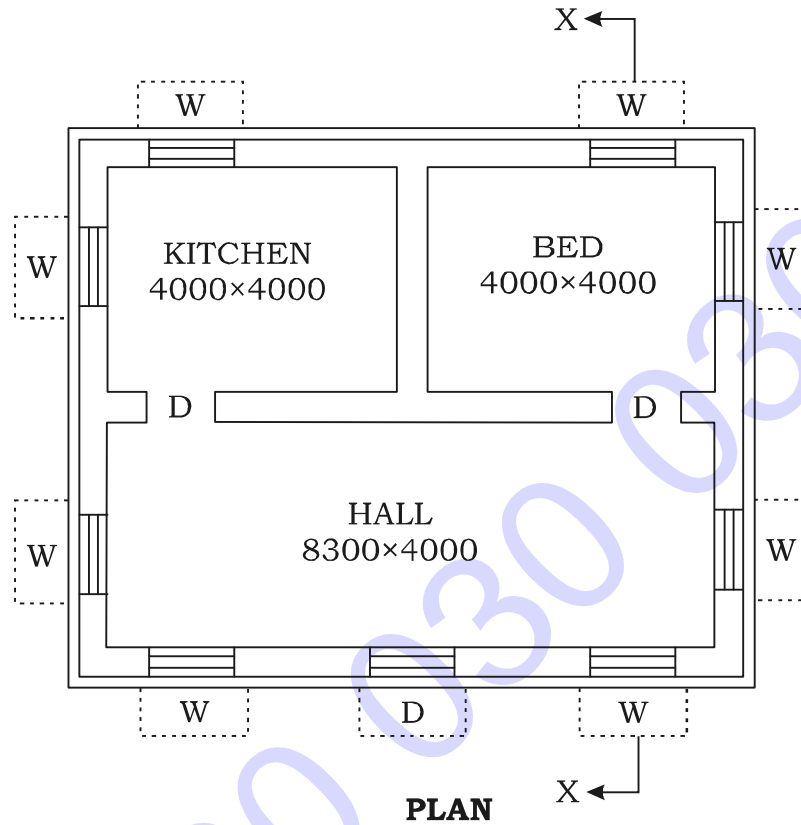


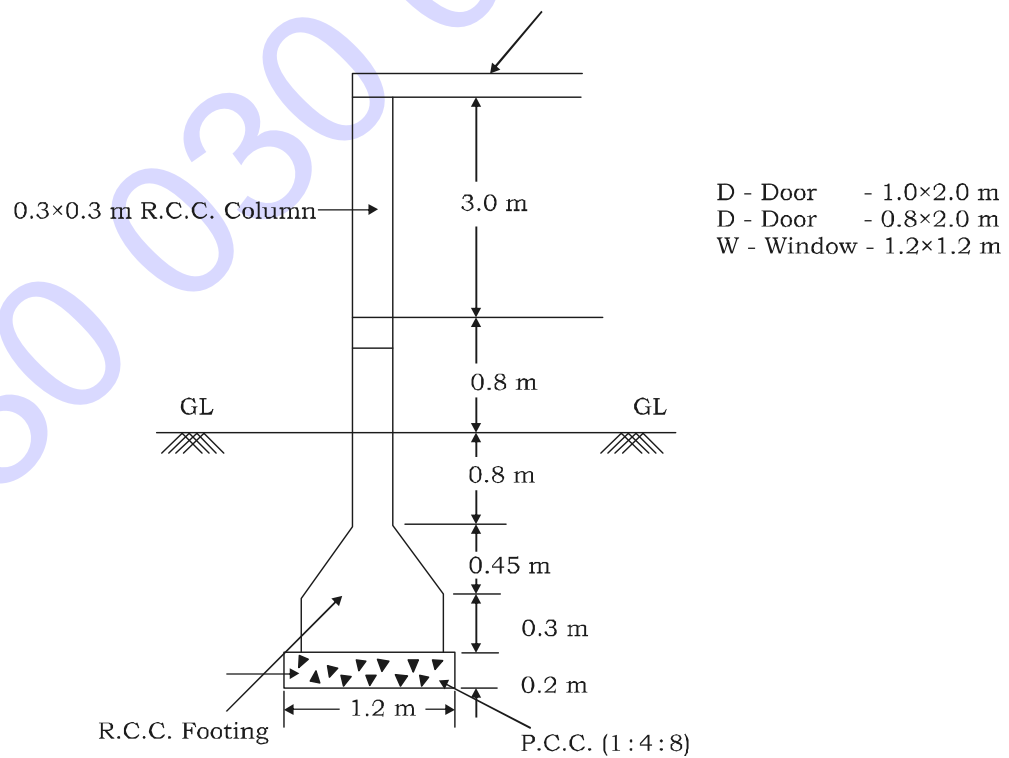
Fig. 4

12. From Fig. 5 calculate the quantities of the following items of work :

- (a) RCC (1 : 1.5 : 3) for columns up to ground level

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- The floor plan shows a rectangular house with the following layout:
- KITCHEN:** Located in the top-left corner, measuring 3.0 × 4.0 M. It contains a sink and a stove.
 - BED 1:** Located in the top-right corner, measuring 4.6 × 4.0 M. It contains a bed.
 - LIVING HALL:** Located in the bottom-left corner, measuring 4.1 × 4.0 M. It contains a sofa and a coffee table.
 - BED 2:** Located in the bottom-right corner, measuring 3.5 × 4.0 M. It contains a bed.
 - Entrances:** There are four main entrances marked with 'D' (Door) on the left and right walls.
 - Windows:** There are several windows marked with 'W' on the left and right walls.
 - Storage:** There are two small storage areas, one in the top-left and one in the top-right, each measuring 1.0 × 1.0 M.

100 mm thick R.C.C. Slab



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13. Prepare the data sheet and calculate the cost of items given below :

(a) Brick Masonry in C. M. (1 : 5)-1 m³

(b) Plastering with 20 mm thick with C. M (1 : 4)—10 sq m

Material and labour required for

Brick Masonry in C. M (1 : 5)-1 m³ Plastering with CM(1 : 4)-105 sq m

512 Nos. Bricks

0.21 m³ C.M (1 : 4)

0.34 m³ C. M (1 : 5)

0.66 Nos. Mason I class

0.42 Nos Mason I class

1.54 Nos. Mason II class

0.98 Nos Mason II class

0.50 Nos. Man Mazdoors

0.70 Nos Man Mazdoors

3.20 Nos. Woman Mazdoors

2.10 Nos Woman Mazdoors

L. S. Sundries

L. S. Sundries

Lead statement of materials :

S. No.	Materials	Rate (₹)	Per	Lead	Conveyance charges
1	Bricks	2500-00	1000 Nos.	12 km	₹ 5-per 1 km/1000 Nos.
2	40 mm size HBG metal	322-00	1 m ³	14 km	₹ 3-per 1 km
3	Sand	86-00	1 m ³	18 km	₹ 3-60 per 1 km/1 m ³
4	Cement	2500-00	1 MT	6 km	₹ 2-per bag/1 km/1 m ³

Labour charges per day

1. Mason I class = ₹ 166 per day

2. Mason II class = ₹ 146 per day

3. Man Mazdoor = ₹ 116 per day

4. Woman Mazdoor = ₹ 116 per day

5. Mixing charges for CM per m³ = ₹ 30.000

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

(a) Plain cement concrete (1 : 4 : 8)- 1 m³

0.92 m ³	HBG metal 40 mm size
— m ³	Sand
— m ³	Cement
0.06 Nos.	Mason I class
0.14 Nos.	Mason II class
1.80 Nos.	Man Mazdoors
1.40 Nos.	Woman Mazdoors
L.S.	Sundries

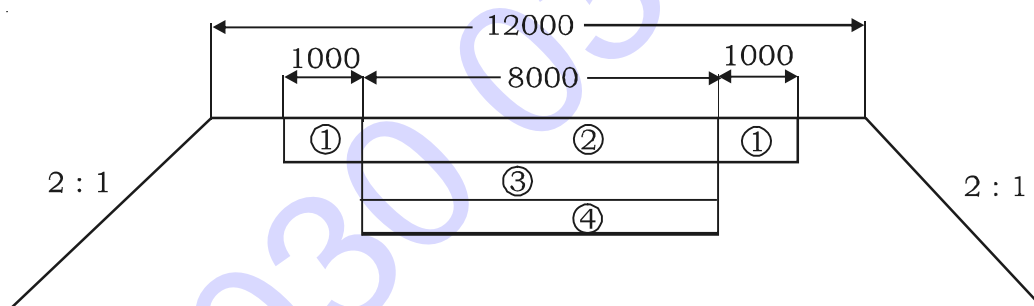
(b) Brick masonry in CM (1 : 6) - 1 m³

600 Nos.	CM (1 : 6)
0.42 Nos.	Mason I class
0.98 Nos.	Mason II class
0.70 Nos.	Man Mazdoor
2.10 Nos.	Women Mazdoor
LS	Sundries

Rate of materials and labour charges at site

1. HBG metal 40 mm size = ₹ 90 m³
2. Sand = ₹ 50 m³
3. Cement = ₹ 1,400/10 kN
4. Country Bricks = ₹ 600/1000 Nos.
5. Mason I class = ₹ 35/per day
6. Mason II class = ₹ 30/per day
7. Man Mazdoor = ₹ 24/per day
8. Woman Mazdoor = ₹ 20/per day
9. Mixing charges for CM per m³ = ₹ 10

- 15.** Calculate the quantity of earth work required according to standard Trapezoidal formula and prismoidal formula in a road embankment having 10.5 m formation width 2 : 1 side slopes in a length of 8 chains of 30 m length. The level difference between formation and ground is 0.9 m, 0.7 m, 1.20, 3.40, 2.90, 3.10, 3.40, 2.60 and 2.40 m respectively. Assume ground is level in transverse direction to the centre line.
- 16.** Calculate the following quantities of WBM road shown in Fig. 6 for the length of 1.5 km :
- Collection of 65 mm HBG metal for base course
 - Collection of 40 mm HBG metal for wearing course
 - Spreading of 40 mm HBG metal for wearing course
 - Collection of gravel for base course, berms and blindage for base course and wearing course



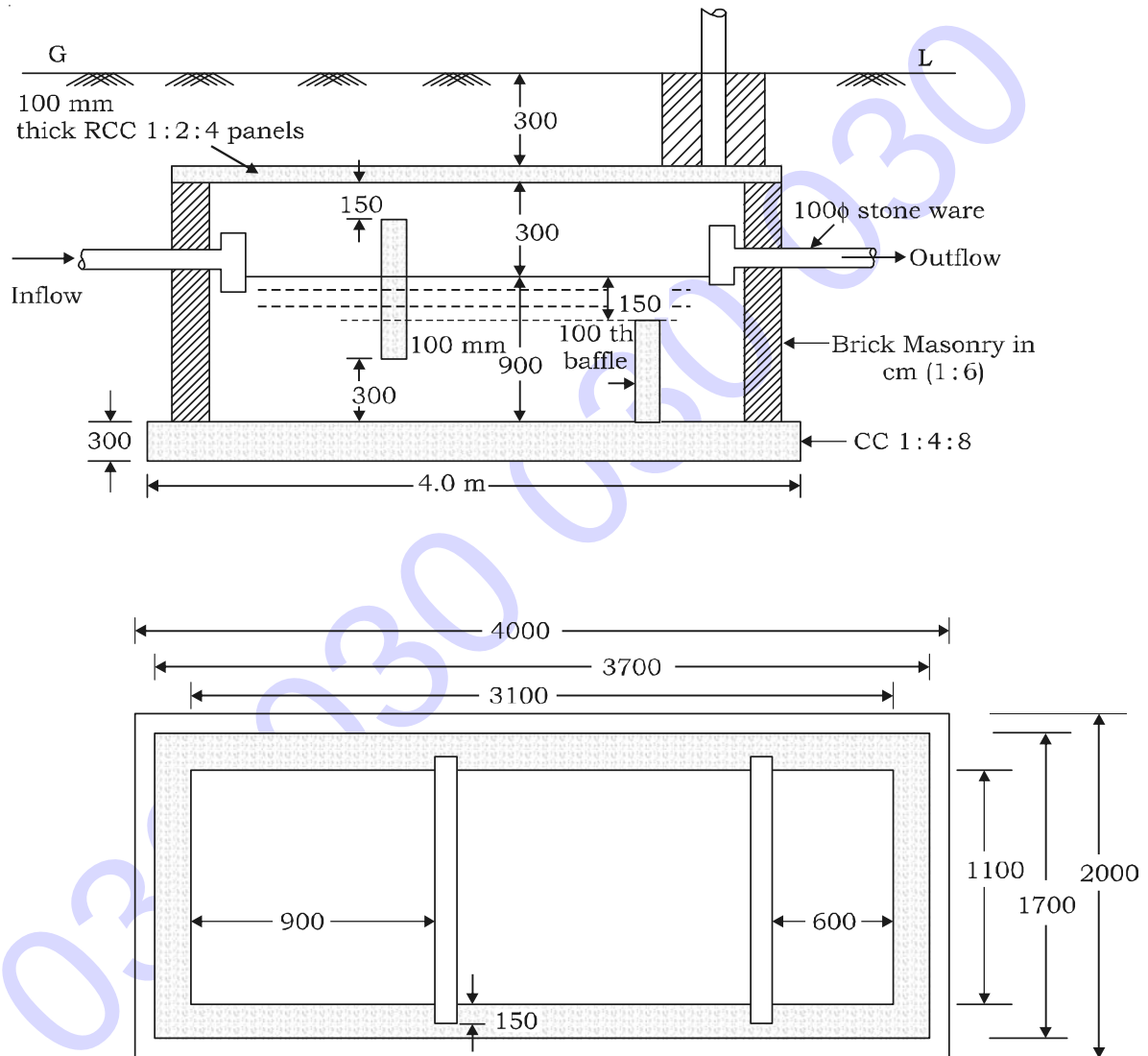
Section of WBM Road

Fig. 6

- Gravel shoulders to a compacted thickness of 100 mm (loose thickness 150 mm)
- 40 mm HBG metal to a compacted thickness of 100 mm (loose thickness 130 mm)
- 65 mm HBG metal to a compacted thickness of 120 mm (loose thickness 160 mm)
- Gravel base to a compacted thickness of 150 mm (loose thickness 225 mm)

17. Prepare the detailed estimation from the Fig. 7 for the following items of septic tank :

- (a) Earthwork excavation
- (b) Brick masonry in CM (1 : 6) all-round septic tank
- (c) Cement concrete for slab, baffle wall, scum board



18. Explain different methods of valuation.

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