



*

C16-C-403

6426

BOARD DIPLOMA EXAMINATION, (C-16)

OCTOBER/NOVEMBER—2023

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. Define the term 'estimation' and state any two needs for preparing an estimate for a work.
2. Write a short note on plinth area method for approximate estimate.
3. The internal dimensions of a room are 6 m × 4 m. Find the quantity of sand filling in basement, if the height and width of basement are 0.8 m and 0.4 m respectively. The wall thickness of room is 0.30 m.
4. The section of steps in front of a building is given in Fig.1. Calculate the volume of brickwork for all the steps, if the length of the step is 2 m. All dimensions are in mm.

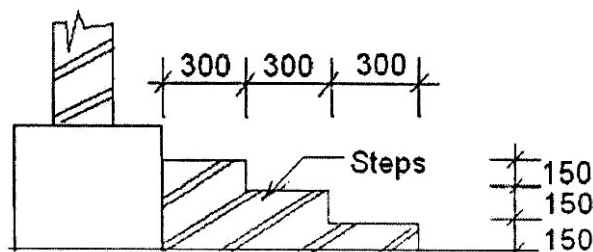


Fig.1

/6426

1

[Contd...

*

5. Define the terms (a) analysis of rates and (b) standard data book.
6. Calculate the length of a stirrup of 6 mm diameter for a beam of size 300 mm × 300 mm (Fig. 2). Assume 25 mm clear cover for main reinforcement on all the sides.

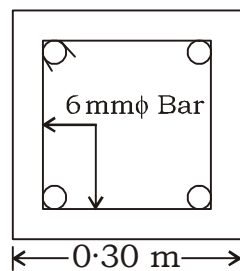


Fig. 2

7. Find the volume of earthwork in an embankment of length 0.5 km, top width of road is 3 m and depth is 2 m. Side slopes are 1.5 : 1.
8. A cement-concrete pavement 150 mm thick and 6.20 m wide is laid over a base course of 100 mm, considering a length of 1200 m. Calculate the following quantities :
 - (a) CC required for pavement
 - (b) CC required for base course
9. Write a short note on depreciation.
10. A newly constructed two storied building in heart of the city is taken for office accommodation. The cost of the building is arrived at plinth area basis including all provisions is ₹20,00,000. The interest on capital is 6%. Calculate monthly rent.

*

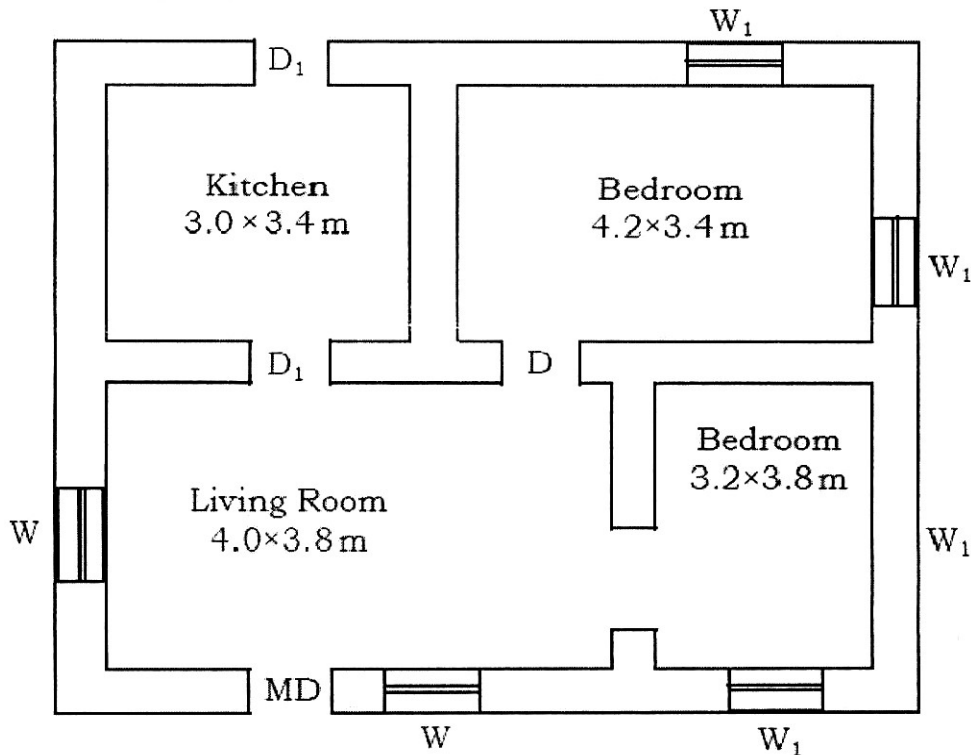
PART—B

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. Prepare the detailed estimate for the following items of work from the given Fig. 3.

- (a) RR masonry in footings.
- (b) Brick masonry in CM (1 : 5) for superstructure without deductions for doors, windows and lintels.
- (c) RCC roof slab (1 : 2 : 4) 100 mm thick.



*

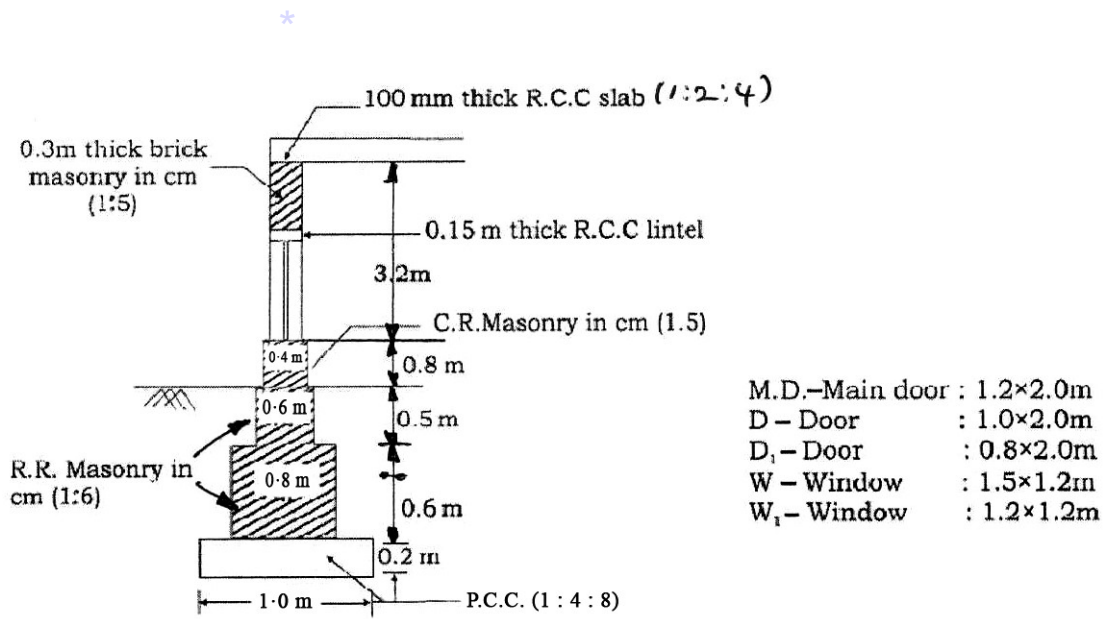
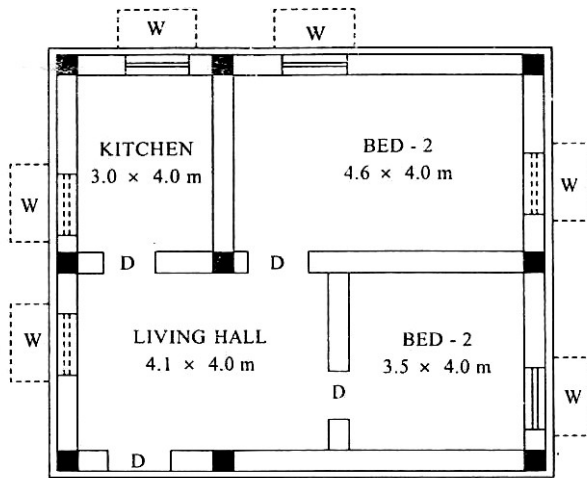


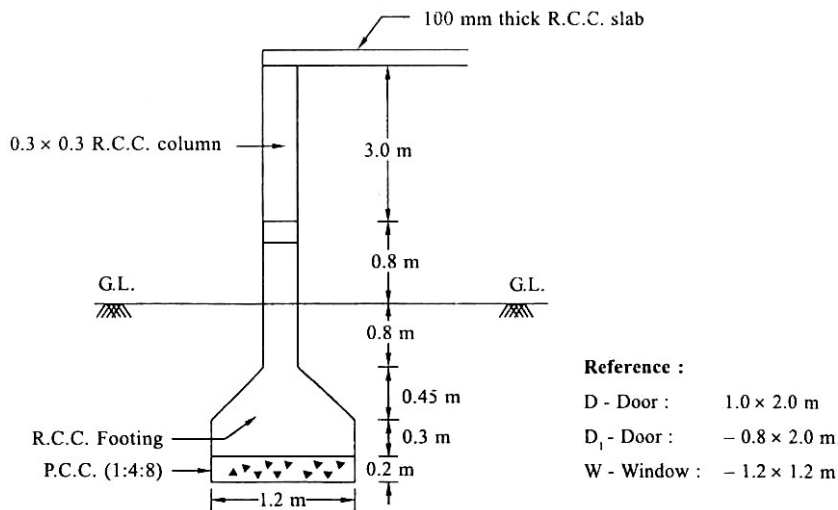
Fig.3

12. Prepare a detailed estimate for the following items of works from the Fig. 4 given below :

- (a) RCC (1 : 1 $\frac{1}{2}$: 3) for columns upto ground level.
- (b) Brick masonry in CM (1 : 5) without deduction for openings.
- (c) Plastering with 20 mm thick in CM (1 : 4) for external surface only.



PLAN



SECTION

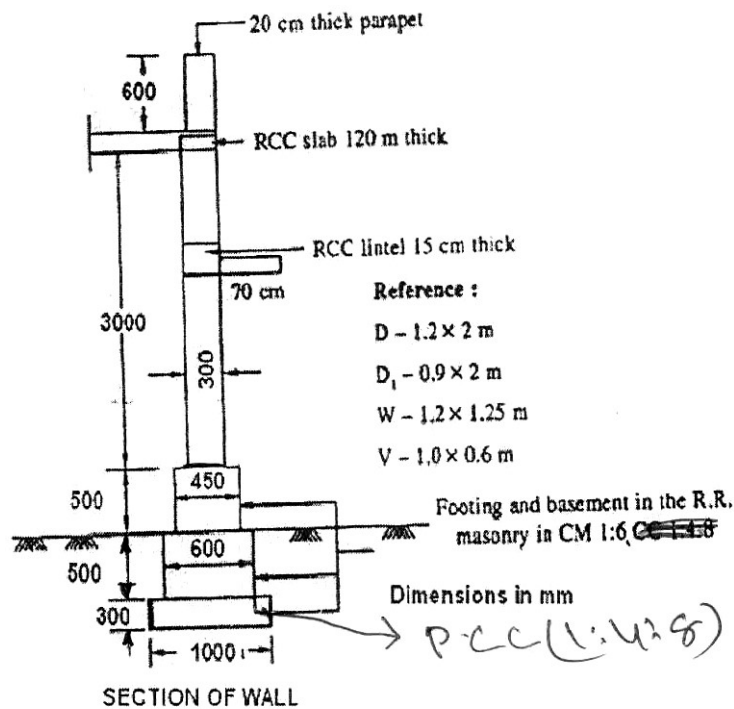


Fig.4

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

(a) Cement concrete (1 : 4 : 8) using 40 mm HBG metal — 1 m³

(b) RR masonry in CM (1 : 6) — 1 m³

Materials and labour required for 1 m³ :

CC (1 : 4 : 8)

0.92 m³ HBG metal

0.48 m³ sand

0.115 m³ cement

0.2 Nos. mason 1st class

3.2 Nos. Mazdoors

LS Sundries

RR Masonry in CM (1 : 6)

1.10 m³ rough stone

0.34 m³ CM (1 : 6)

1.8 Nos. mason

2.8 Nos. mazdoors

LS Sundries

Lead statement of materials :

Sl.No.	Materials	Rate (in ₹)	Per	Lead	Conveyance charges
1	40 mm size HBG metal	1,100	1 m ³	10 km MR	₹2 per 1 km
2	Sand	400	1 m ³	8 km MR	₹2 per 1 km
3	Rough stone	260	1 m ³	5 km MR	₹3 per 1 km
4	Cement	1,800	1 tonne	At site	

Labour charges :

- (i) Mason 1 class = ₹500
- (ii) Mason 2 class = ₹450
- (iii) Mazdoor = ₹300
- (iv) Hand mixing charges of CM per m³ = ₹80

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

- (a) Flooring with 25 mm thick polished Shahabad stone of first quality of size not exceeding 400 mm × 400 mm, laid over set in CM (1 : 10) 16 mm thick base coat – 10 sq.m.
- (b) Painting with white cement paint first quality two coats to walls after surface is thoroughly cleaned including cost and conveyance of materials to site etc., 10 sq.m.

Materials and labour required for flooring with 25 mm thick polished Shahabad stone-unit-10 sq.m.

10.10 sq.m.	Polished stone
0.12 cu.m.	CM (1 : 10)
0.96 Nos.	Mason I class
2.24 Nos.	Mason II class
2.20 Nos.	Man mazdoor
1.10 Nos.	Woman mazdoor
LS Sundries	3

Painting with white cement paint-unit-10 sq.m.

3.5 kg	White cement paint
0.15 Nos.	Mason I class
1.35 Nos.	Mason II class
0.50 Nos.	Man mazdoor
1.10 Nos.	Woman mazdoor
LS Sundries	

Lead statement*:

Sl.No.	Materials	Rate at Source (in ₹)	Leads (in km)	Conveyance changes/km
1	Polished stone	1,650/10 sq.m.	8	10/10 sq.m.
2	Sand	150/cu.m.	20	160.00 for 20 km/1 cu.m.
3	Cement	3400/MT	Local	—
4	White cement paint	15/kg	Local	—

Labour charges :

- (i) 1st class mason ₹190/day
- (ii) 2nd class mason ₹180/day
- (iii) Man mazdoor ₹190/day
- (iv) Woman mazdoor ₹150/day
- (v) Mixing charges for CM ₹30/m³

- 15.** The contour levels and contour areas of a depression are given below. The bed level of the depression is at 78 m contour and is to be filled up to 84 m. Calculate the earthwork quantity by using (a) trapezoidal rule and (b) prismoidal rule.

Contour level (in m)	78	79	80	81	82	83	84
Area of contour (in sq.m.)	99	103	110	116	120	132	137

16. For RCC slab culvert shown in the Fig. 5 below. Calculate the following :
- Earthwork excavation for foundation of abutments and return walls.
 - RR masonry in CM (1 : 6) for abutments and return walls.
 - RCC (1 : 2 : 4) required for deck slab.

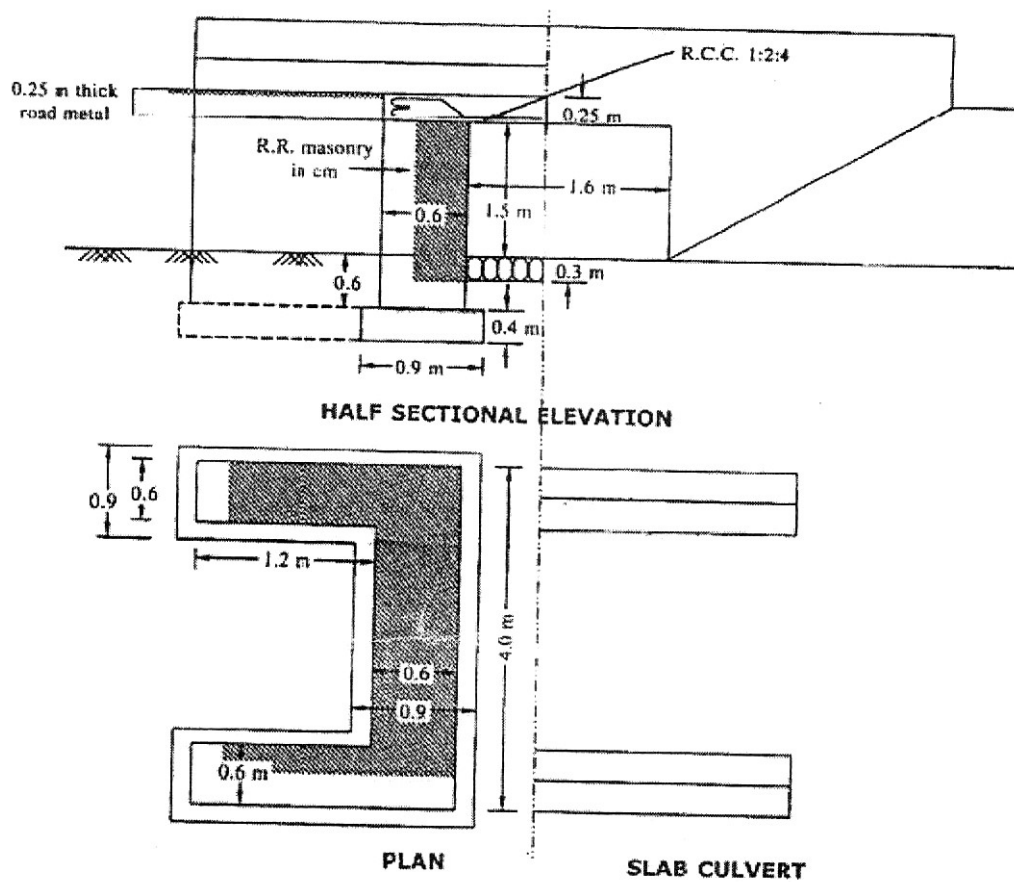


Fig.5

- 17.** Prepare the detailed estimate for the cement concrete road of 1.50 km length for the following items of work as shown in the Fig. 6 below :
- Wearing coat of CC (1 : 2 : 4) with 20 mm size HBG metal 100 mm thick.
 - Base coarse of CC (1 : 4 : 8) with 40 mm size HBG metal 150 mm thick.

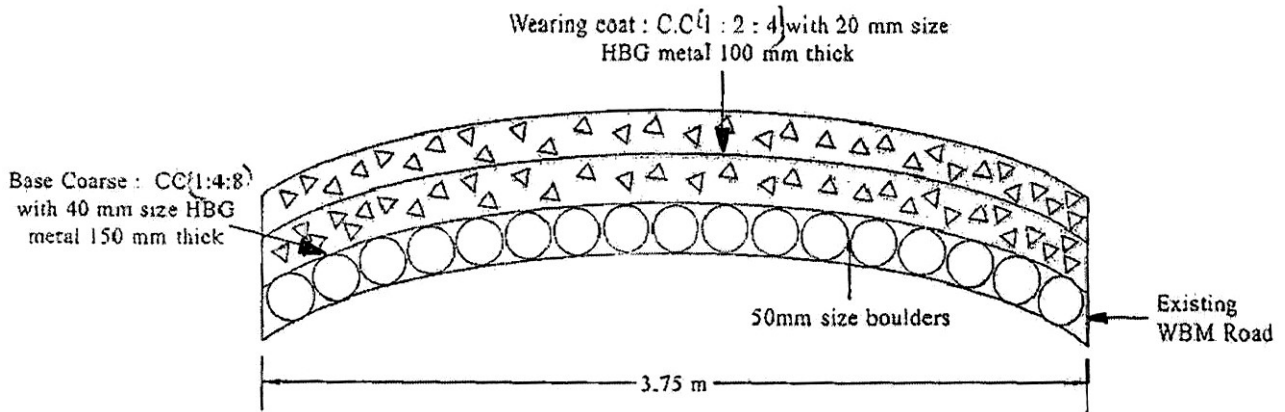


Fig. 6

- 18.** A residential building constructed 20 years ago is situated on a plot whose total area is 223 m^2 . The plinth area of the building is 62 m^2 . The present cost of construction of the building is ₹8,00,000 and the cost of the land is ₹500/ m^2 . The rate of depreciation for the value of the building is 1%. Calculate the total value of the property.

★ ★ ★