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C16-C-403

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BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—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. State the need for Quantity Surveying.
2. Prepare the approximate estimate of a proposed building with the following data :
 - (a) Plinth area = 250 sqm
 - (b) Plain the area rate = ` 50,000 per sqm
 - (c) Water supply and sanitation = 12% of the cost of building
 - (d) Electrification = 7.5% of cost of building
 - (e) Fluctuation of rates = 3% of cost of building
 - (f) Architectural elevations = 1% of cost of building

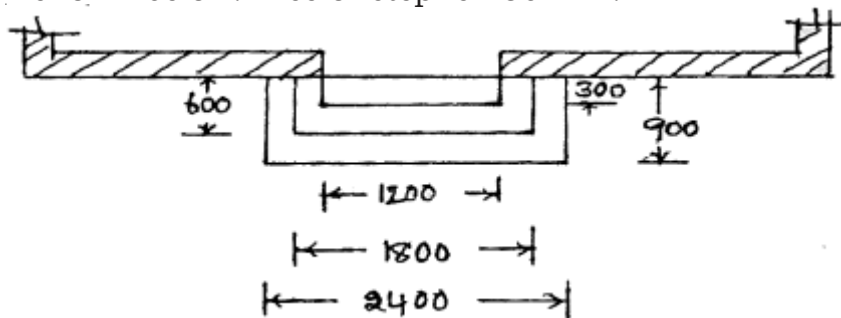
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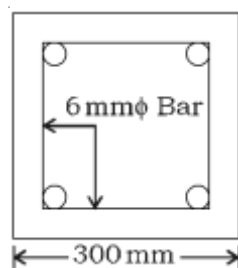
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3. Calculate the*Quantity of the Brick Masonry in CM (1 : 6) for steps in plan shown below. Rise of step is 150 mm.



4. A single roomed building has internal dimensions of 6200 mm × 4500 mm with super structure, wall thickness of 300 mm and height 3050 mm. It has a basement of 500 mm height and 450 mm width. Calculate the quantity of masonry for superstructure without deductions.
5. Explain the terms lead and lift.
6. Briefly explain about Standard Schedule of Rates and Standard Data Book.
7. Find the length of 6 mm dia bar as shown in the following figure, the size of column is 300mm × 300 mm :



8. Prepare the detailed estimate of gravel layer of compacted thickness of 150 mm over the already formed earthen road. The width of gravel layer is 4.00 m. Length of gravel is 600.00 m. (225 mm thick loose on compaction forms 150 mm thick compacted).
9. State the purpose of valuation of buildings.
10. Write any four rules for calculation of standard rent.

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PART—B

10×5=50

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

(2) Each question carries ten marks.

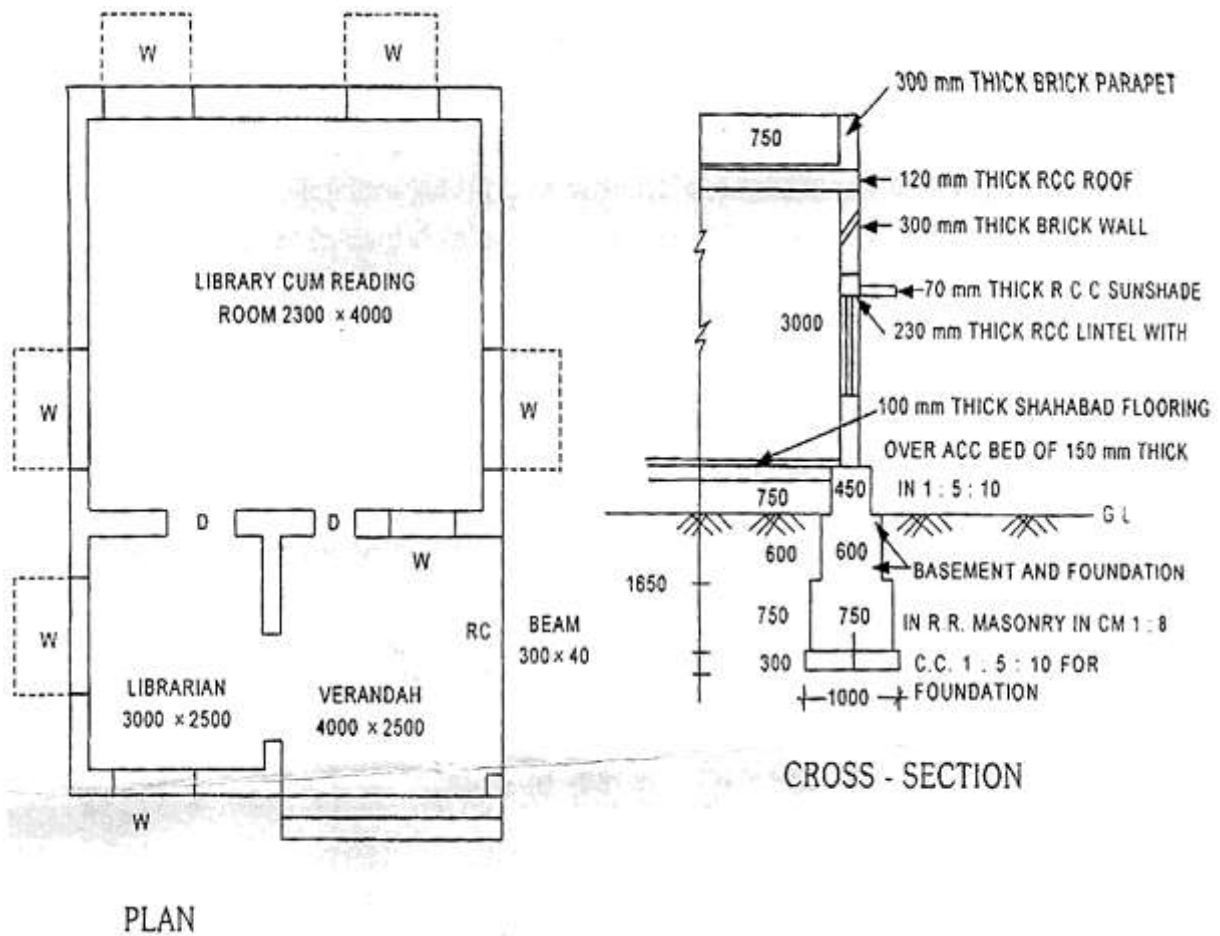
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Prepare the detailed estimate for the following items of work for a building shown in figure :

(a) R.R masonry in CM 1 : 6 for footings and basement

(b) Brick work in CM 1 : 6 for super structure

(c) Plastering to ceiling with CM 1 : 3

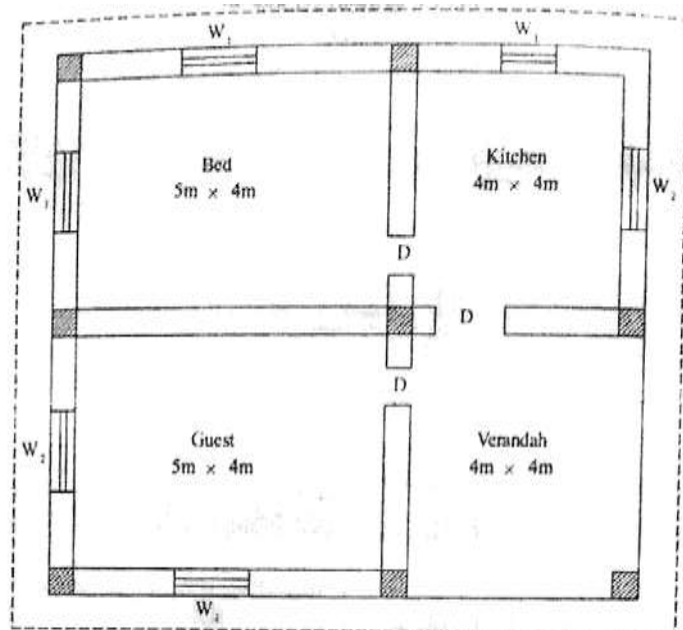


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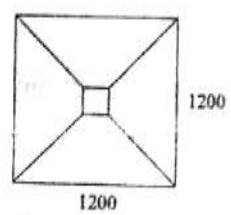
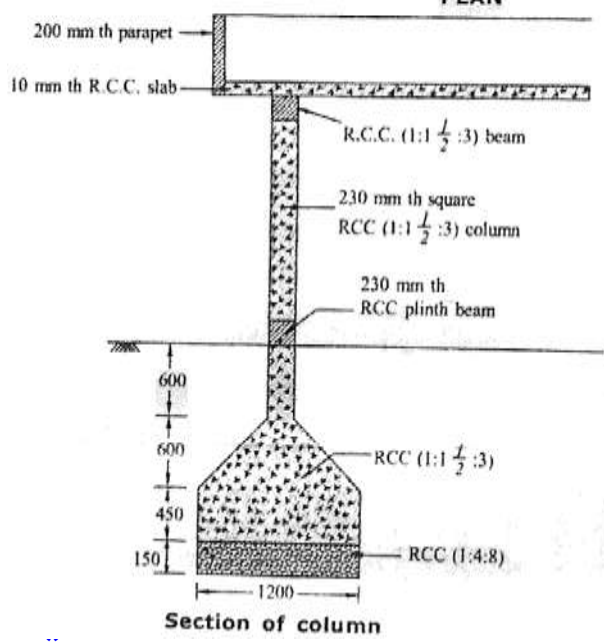
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12. Calculate the*quantities of the following items for the drawing given below :

- (a) Earth work excavation for all column footings
- (b) PCC (1 : 4 : 8) using 40 mm HBG metal for foundations (under columns only)
- (c) RCC (1 : 11/2 : 3) using HBG metal for all column footings



PLAN



Plan of column

Section of column

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13. Prepare the data sheet and calculate the cost of the item given below, using the lead statement of materials.

(a) Cement concrete 1 : 3 : 6 using 40 mm HBG metal, unit-1 cu.m.

0.90 m ³	40 mm size HBG metal
_____	Sand
_____	Cement
0.06 Nos.	Mason 1st class
0.14 Nos.	Mason 2nd class
1.80 Nos.	Man Mazdoors
1.40 Nos.	Woman Mazdoors
LS	Sundries

(b) RR masonry in CM (1 : 6) – Unit 1 cu.m.

1.10 cu.m.	Rough stone
0.34 cu.m.	CM (1 : 6)
0.54 Nos.	Mason 1st class
1.26 Nos.	Mason 2nd class
1.40 Nos.	Man Mazdoors
1.40 Nos.	Woman Mazdoors
LS	Sundries

LEAD STATEMENT OF MATERIALS

Sl. No.	Materials	Rate at source	Lead	Conveyance charges per km in `
1	40 mm HBG Metal	` 500/m ²	10 km	15/m ³
2	Sand	` 375/m ³	20 km	10/m ³
3	Cement	` 5500/tonne	3 km	1 bag
4	Rough stone	` 350/m ²	8 km	12/m ³

Labour :

(a) Mason 1st class	` 450	each/day
(b) Mason 2nd class	` 350	each/day
(c) Man Mazdoors	` 300	each/day
(d) Women Mazdoors	` 300	each/day
(e) Mixing charges of CM	` 90	Cum

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

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

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

(i) Materials and labour required for flooring with 25 mm thick polished Shahabad stone – 10 sq.m.

10.10 sq.m. Polished stone

0.12 cu.m. CM (1 : 10)

————— cu.m. Sand

————— cu.m. Cement

0.96 Nos. Mason 1st class

2.24 Nos. Mason 2nd class

2.20 Nos. Man Mazdoors

1.10 Nos. Woman Mazdoors

(ii) Painting with white cement paint – 10 sq.m.

3.5 kg White cement paint

0.15 Nos. Mason 1st class

1.35 Nos. Mason 2nd class

0.50 Nos. Man Mazdoors

1.0 Nos. Woman Mazdoors

Lead Statement :

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Sl. No.	Materials	Rate at source	Lead in km	Conveyance charges
1	Polished stone	2650 per 10 sq.m.	8	15/10 sq.m.
2	Sand	750 cum	20	1600.00/for 20 km/1 cu.m.
3	Cement	6400/MT	4	3 bag
4	White cement paint	25/kg		

Labour charges :

1st class Mason ` 450.00/day

2nd class Mason ` 350.00/day

Man Mazdoors ` 300.00/day

Woman Mazdoors ` 300.00/day

Mixing charges of CM `

90.00/m³

15. Calculate the quantity of earthwork excavation and cutting for a portion of a road from the following data :

Formation width of road is 10 m, side slope 2 : 1 in banking, 1(1/2) : 1 in cutting

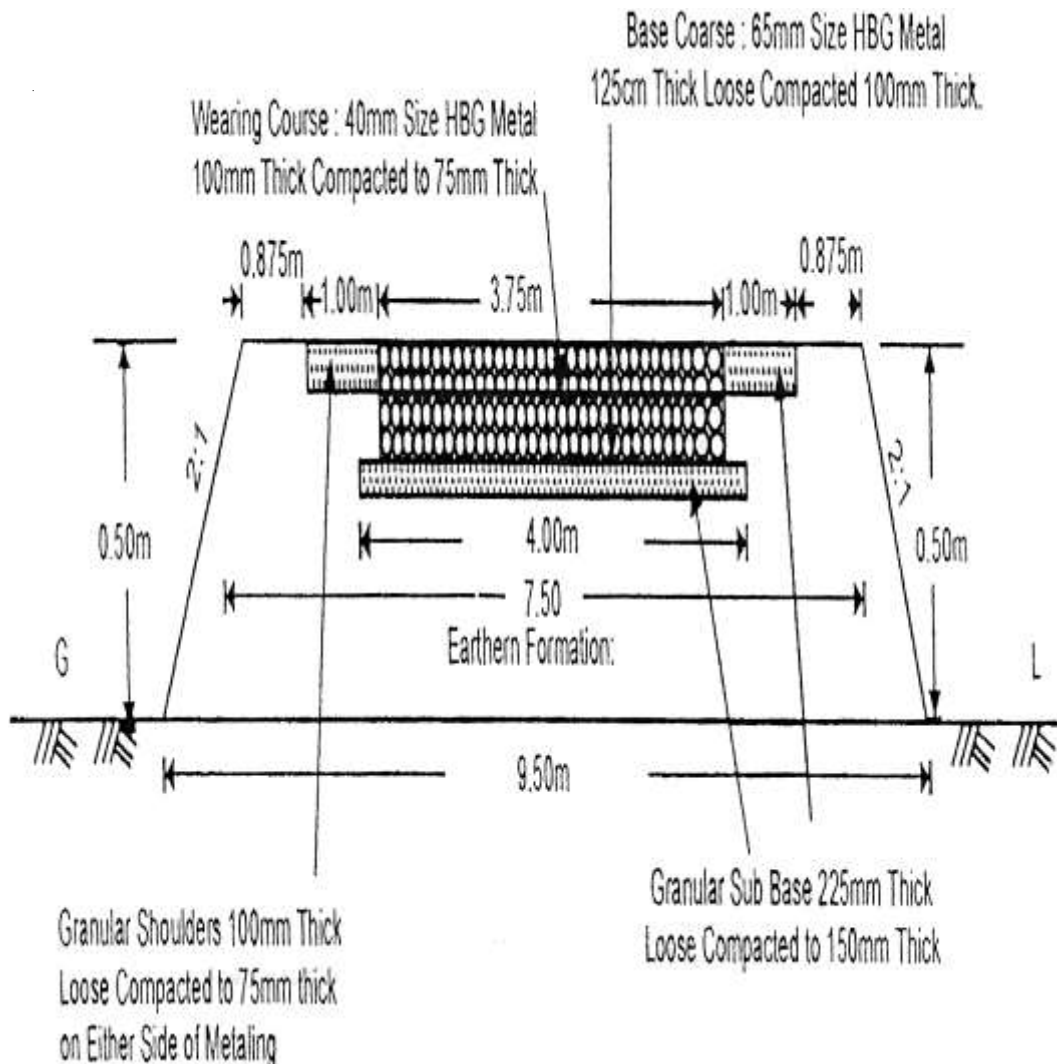
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Distance in meters	200	210	220	230	240	250	260	270	280	290	300	310	320
RL of ground	202.60	202.35	202.95	202.60	203.00	202.70	203.60	203.80	204.25	203.75	204.05	203.50	203.50
RL of formation	←———— Upward 1 in 100 ⁷ —————→							←———— Down ward 1 in 100 —————→					

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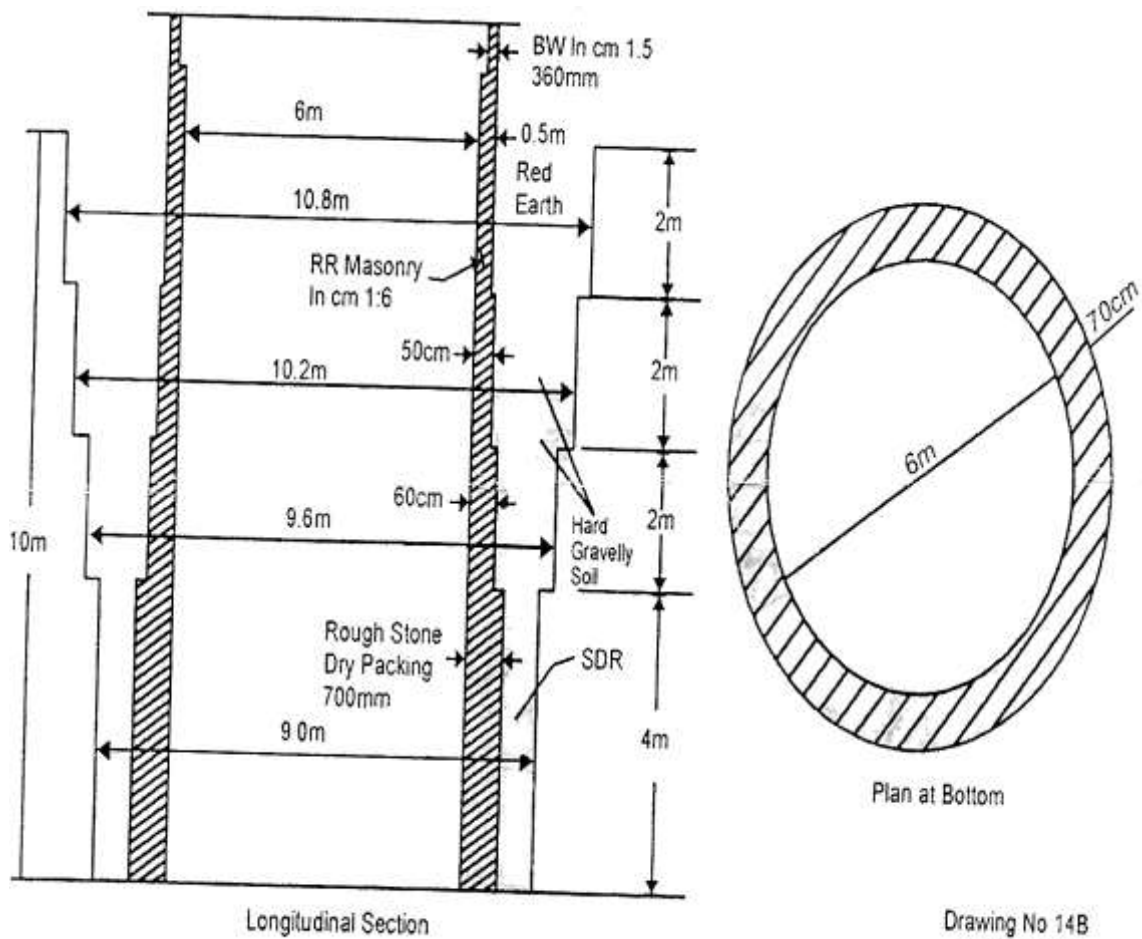
16. Prepare the detailed estimate of water bound macadam road of length 1.00 km with the details shown in figure. Treat that the ground level is uniform, there are no difference level and the dips potholes and ruts do not exits.

- (a) Collection and supply of 65 mm HBG metal;
- (b) Collection and supply of gravel for base course;
- (c) Spreading of 40 mm HBG metal;
- (d) Spreading of gravel for base course and shoulders.



17. Prepare the detailed estimate of the figure in which plan cross-section of an open well :

- (a) Earth-work excavation in different types of soils
- (b) RR masonry in CM (1 : 6)
- (c) Brick Masonry in CM (1 : 5)



Drawing No 14B
an Open Well
Scale 1 100

18. Residential building constructed 12 years ago is situated on a plot whose total area is 400 m^2 . The plinth area of the building is 240 m^2 . The present cost of construction of the building is ₹ 1,30,000 and the cost of the land is ₹ 180/ m^2 . The rate of depreciation for the value of the building is 1% per annum. Calculate the total value of the property.

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