C16-C–403

6426

BOARD DIPLOMA EXAMINATION, (C-16)

MAY/JUNE—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. State the need for quantity surveying.

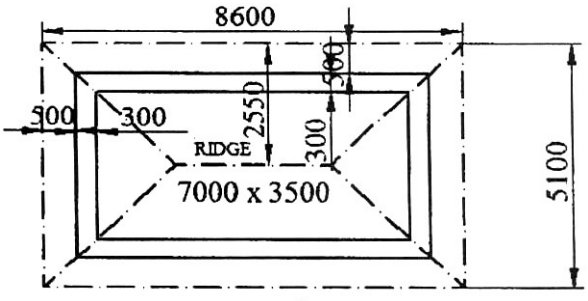
2. Prepare an approximate estimate of a hospital building for 50 beds. The cost of the construction altogether for each bed is ₹60,000. Determine the total cost of the hospital building.

3. The internal dimensions of a room are 6·25 m × 4·25 m with 230 mm wall thickness. Find the quantity of sand filling in basement, if the height and width of basement are 750 mm and 450 mm respectively.

4. For the hipped roof shown in the sketch below, calculate—

(a) length of hip rafter

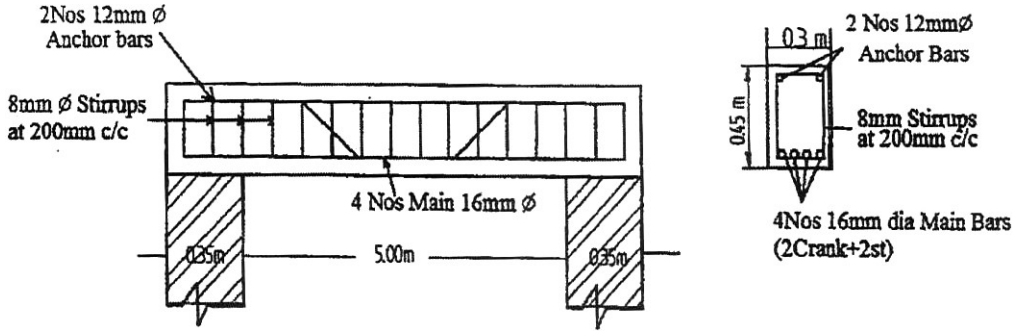
(b) ridge piece length



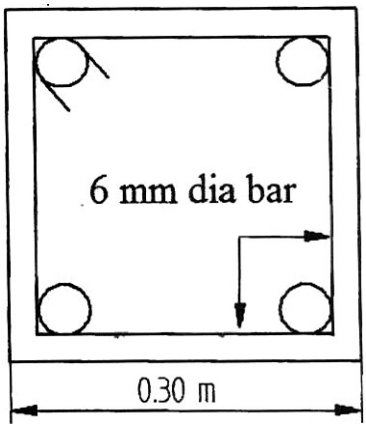
RISE OF ROOF $\frac{1}{3}$ SPAN

Note: All dimensions are in mm.

5. Calculate the quantity of steel required for main straight bars shown in fig. Assume top and bottom clear cover as 40 mm, end cover as 25 mm, weight of 16 mm dia bar is 1·58 kg/m.



6. Find the length of 6 mm diameter bar as shown in the figure below, if the size of column is 300 mm × 300 mm. Assume 40 mm clear cover for main reinforcement :



7. Find the volume of earth work in an embankment of length 1.5 km, top width of road is 3.75 m and depth is 2 m, side slope 1.5 : 1.

8. A cement-concrete pavement 150 mm thick and 6·20 m wide is laid over a base course 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. Write a short note on calculation of standard rent.

PART—B

10×5=50

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

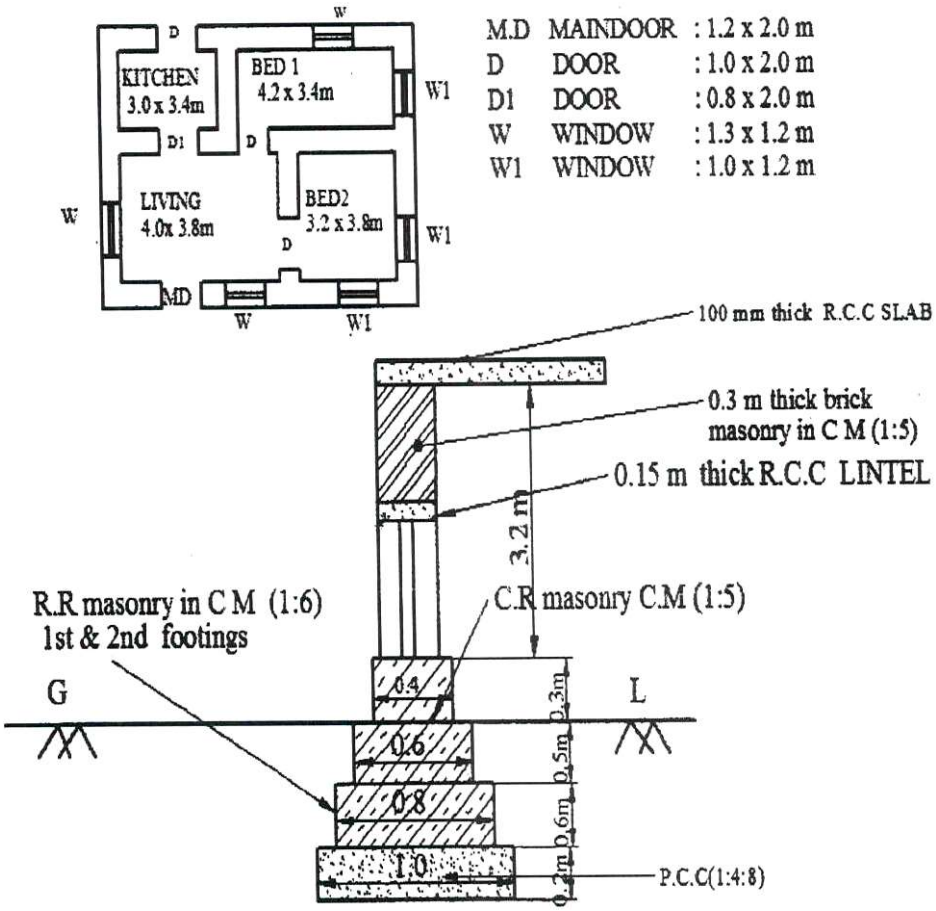
(2) Each question carries **ten** marks.

(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 for the building shown in the figure below :

(a) Earthwork in excavation for foundation

(b) RR masonry for 1st and 2nd footing

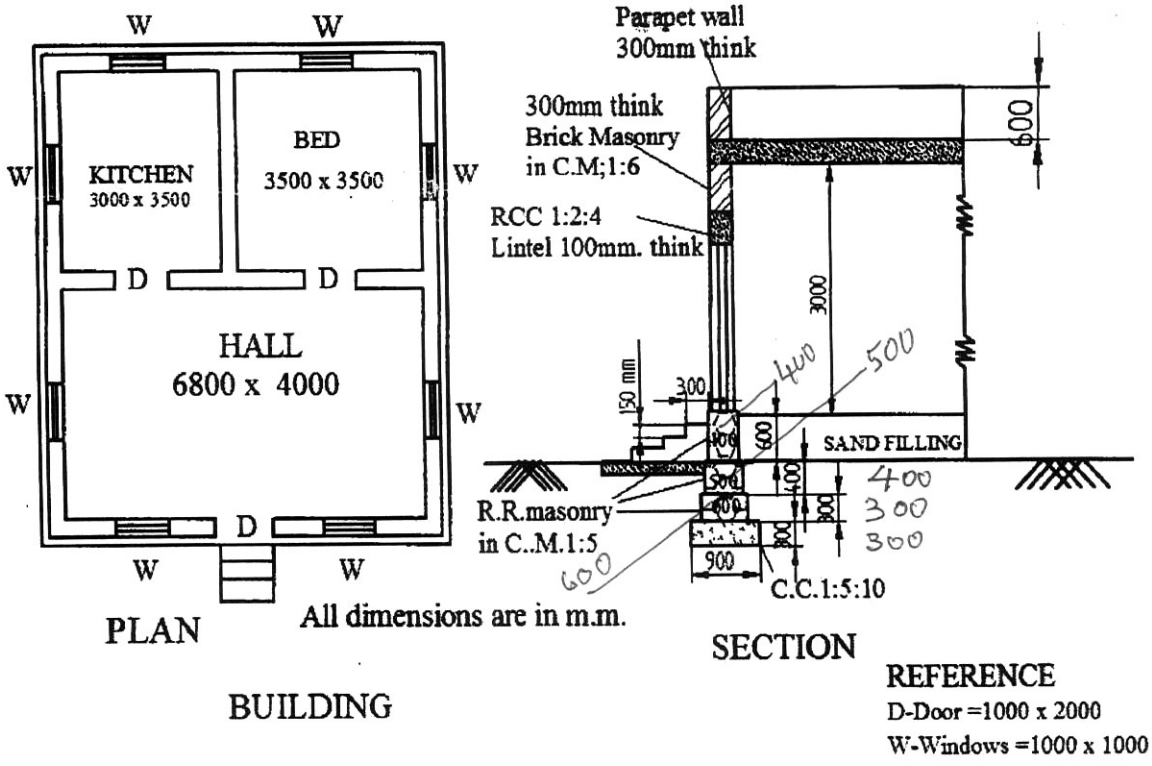


12. Prepare the detailed estimate for the following items of work for the building shown in figure below :

(a) CC (1 : 5 : 10) bed for foundation

(b) Brick masonry in CM (1 : 6) for superstructure wall without deductions (excluding parapet wall)

(c) Plastering with CM (1 : 5) 12 mm thick for inside the building without deductions



13. Prepare the data sheet and calculate the cost for the following items of work :

(a) RR masonry with CM (1 : 8) unit : 1 m^3

105 m^3	Rough stone
0·34 m^3	CM (1 : 8)
1·8 No.	Mason
2·8 Nos.	Man Mazdoor
LS	Sundries

(b) Pointing of RR masonry in CM (1 : 5) unit : 10 m^2

0 09 m^3	CM (1 : 5)
2·28 Nos.	Mason
0·50 Nos.	Man Mazdoor
1·10 Nos.	Women Mazdoor
LS	Sundries

Lead statement of materials :

Sl.No.	Materials	Rate at sources (in ₹)	Lead (in km)	Conveyance charges/km
1	Rough stone	320·00/m^3	15 km	₹4·00/m^3
2	Sand	95·00/m^3	10 km	₹3·00/m^3
3	Cement	2500·00/10 kN (1 tonne)	At site	

Labour charges :

Mason	₹225·00/day
Man Mazdoor	₹180·00/day
Woman Mazdoor	₹180·00/day
Mixing Charges for CM	₹40·00/m^3

14. Calculate the cost of the following items of work using the lead statement given below :

CC for foundations (1 : 5 : 10) using 40 mm HBG metal unit : 1 m^3

0·92 m^3	40 mm HBG metal
____ cu.m	Sand
____ cu.m	Cement
0·2 Nos.	Mason
3·2 Nos.	Mazdoor
LS	Sundries

First class brickwork in CM (1 : 8) unit : 1 m^3

500 Nos.	First class bricks
0·38 cu.m	CM (1 : 8)
1·40 Nos.	Brick layers
2·80 Nos.	Mazdoor
LS	Sundries

Labour charges :

Mason/Brick layer	₹70·00/day
Mazdoor	₹40 00/day
Mixing charges of cement mortar	₹10 00/cu.m

Lead statement :

Sl.No.	Materials	Rate at sources (in ₹)	Lead (in km)	Conveyance charges
1.	40 mm HBG metal	250·00/cu.m	12 km MT + 10 km CT	₹6·00/km/cu.m
2.	Sand	75·00/cu.m	6 km MT + 5 km ST	₹4·00/km/cu.m
3.	Bricks	900/1000 nos.	6 km MT	₹5·00/km/1000 nos.
4.	Cement	2,500 per ton	At site	₹34·00

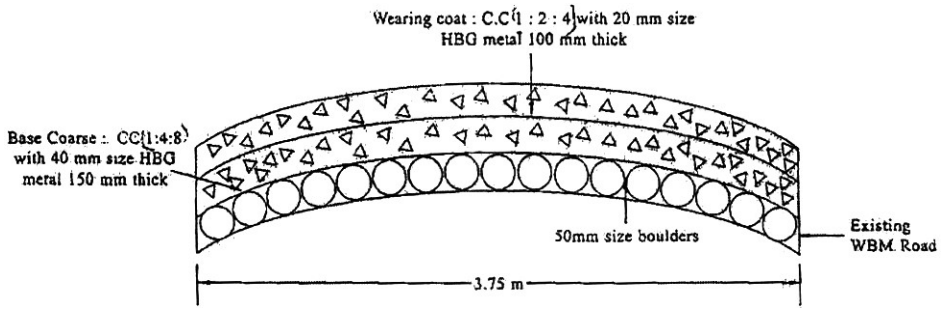
15. The contour areas of a reservoir are given below. Calculate the dead and live storage capacity of the reservoir by prismoidal rule.

Levels (in m)	Areas (in sq.m)
10·0	10500 bed level
11·0	13200
12·0	20600 sill level
13·0	35000
14·0	40200
15·0	60700
16·0	72400
17·0	90300 FTL
18·0	99300 MWL

16. Prepare the detailed estimate for the cement concrete road of 1.50 km length for the following items of work as shown in the figure below :

(a) Wearing coat of CC (1 : 2 : 4) with 20 mm size HBG metal 100 mm thick.

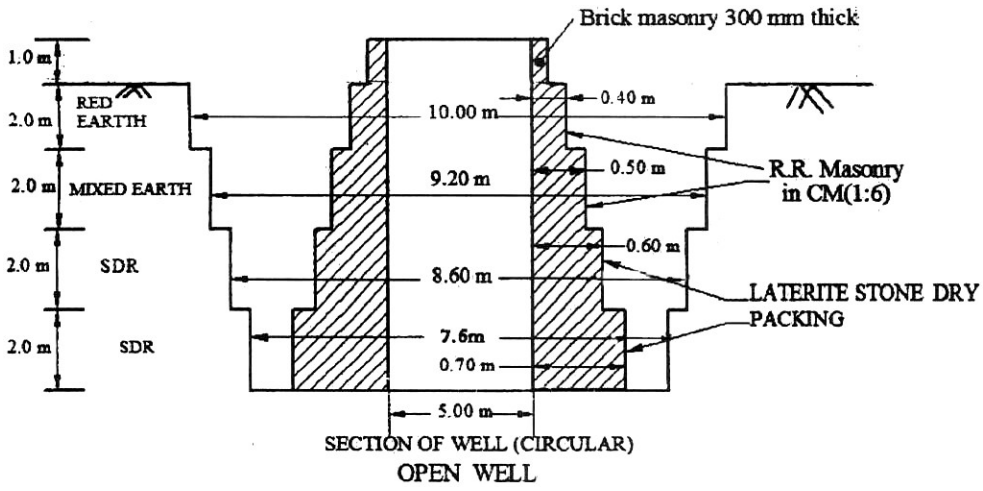
(b) Base coarse of CC (1 : 4 : 8) with 40 mm size HBG metal 150 mm thick.



17. Prepare the detailed estimate for the following items of work for an open well shown in the figure :

(a) Earthwork excavation in different types of soils

(b) RR masonry in CM 1 : 6



18. The total cost of the newly constructed building is ₹15 lacs. Find the depreciation cost of building after 25 years by *(a)* straight line method and *(b)* constant percentage method if the scrap value of the building is ₹1,20,000. Assume the life of building as 80 years.

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