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C14–C–403

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BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2016

DCE—FOURTH SEMESTER EXAMINATION

QUANTITY SURVEYING—I

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Assume any missing data suitably.

1. What is quantity surveying? State two objects of preparing quantity surveying.

2. State the units of measurements of the following items of work :

(a) RR/Brick masonry for foundation

(b) Filling basement with sand

(c) AC sheet roofing/tiled roofing

3. Explain the terms lead and lift for the formation of roads and give the values of initial lead and initial lift.

4. State the method of calculating quantity of earthwork by at least two methods available.

5. The depths at two ends of an embankment of a road of length 80 m are 2·5 m and 3·4 m. The formation width and side slopes are 12 m and 2 : 1 respectively. Estimate the quantity of earthwork by—

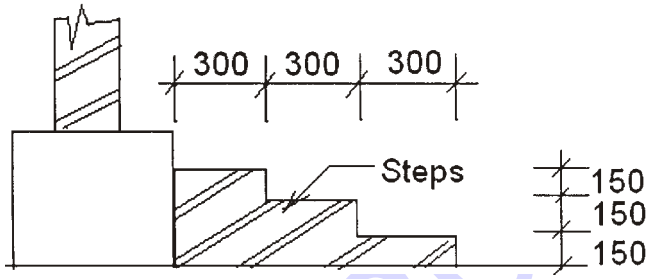
(a) mid sectional area method;

(b) mean sectional area method.

6. State the difference between detailed estimate and abstract estimate.

7. What is an approximate estimate? How is it prepared?

8. 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 :



9. The internal dimension of a room is 5 5 m 3 5 m. Find the quantity of sand filling in the basement, if the height and thickness of the basement are 0·80 m and 0·45 m respectively. [The thickness of wall is 0·30 m]

10. From the Fig. 2, calculate the following :

(a) Length of each common rafter

(b) The total number of common rafters

The slope of the roof is 1/3 span, spacing of common rafters is 400 mm :

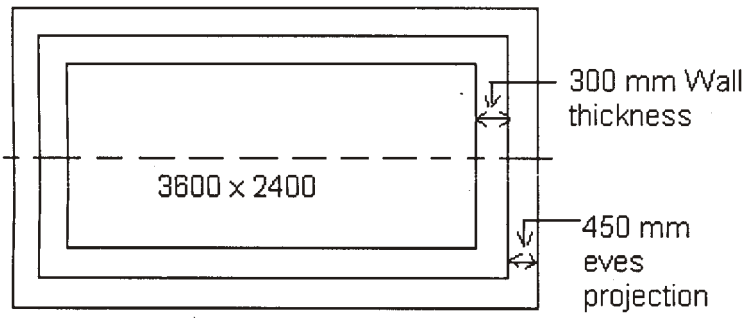


Fig. 2

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. Explain briefly the long-wall and short-wall method and central line method mentioning the advantages of each one.

12. The road has the following data :

Chainage (in m)	0	30	60	90	120	150	180	210	240
GL (m)	30·80	31·35	31·85	32·25	33·00	33·65	34·50	34·85	35·00

The formation level at chainage zero is 33·00 m and having a rising gradient of 1 in 120. The top width is 10 m and the side slope is 2 : 1. Assuming the transverse slope of the ground is level, calculate the volume of earthwork by prismoidal rule and trapezoidal rule.

13. Calculate the volume of earthwork by trapezoidal formula for a portion of a road from the following data :

Chainage (in m)	200	220	240	260	280	300	320
GL (m)	149·5	149·3	150	149·7	149·9	149·5	150·6
RL of Formation	150	Rising gradient 1 in 200					

340	360	380	400	420	440
150·9	151·4	150·7	151·1	151	150·6
Falling gradient 1 in 400					

The formation of road is 10 m; side slopes both for cutting and embankment are 1·5 : 1.

14. Prepare a rough estimate for a proposed commercial complex for a municipal corporation for the following data :

Plinth area ₹ 500 per sq m/floor

Height of each floor 3 m

No. of stories Ground floor 2

Cubical content rate ₹ 1000 per cu m

Provisions are given below :

(a) Water supply and sanitation 8% of building cost

(b) Electrification 6% of building cost

(c) Fluctuation of rates 5% of building cost

(d) Contractors margin 10% of total cost

(e) Pretty supervision and contingencies 3% of total cost

15. Explain the methods of preparing approximate estimates.

16. Calculate the length of members *AB*, *DF*, *EG*, *AD*, *DE* and *EC* of north light roof truss shown in the accompanying Fig. 3 :

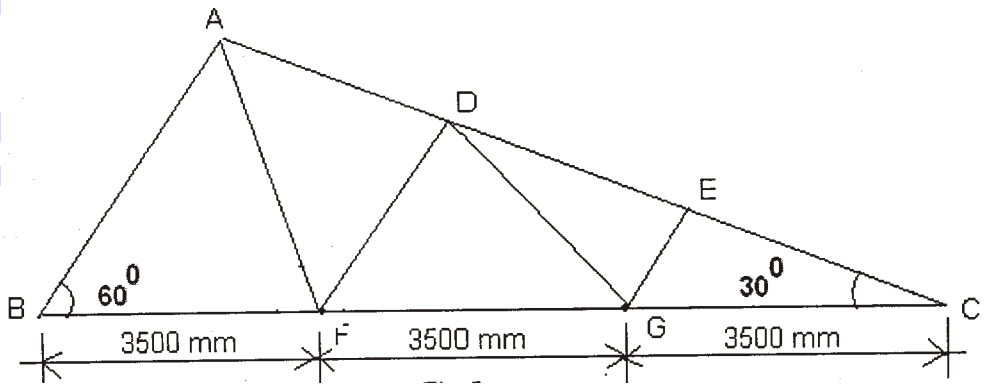


Fig. 3

17. Prepare the detailed estimate for the following items of work for the building shown in Fig. 4 :

(a) Earthwork excavation for foundation in hard gravelly soils

(b) RR masonry in CM (1 : 6) for footing and basement

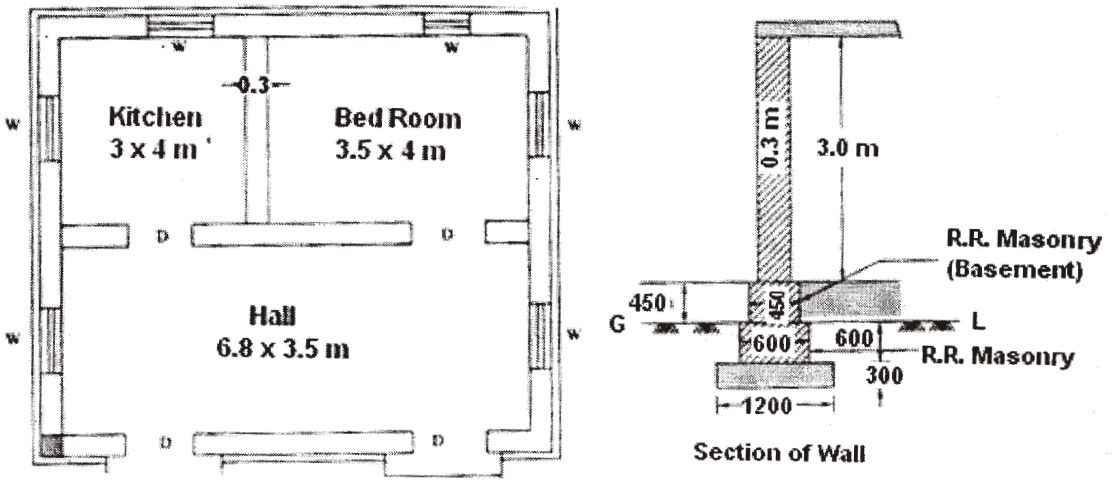


Fig. 4

18. Prepare the detailed estimate for the following items of work for the building shown in Fig. 5 (in Page No. 6) :

(a) Earthwork excavation in foundation

(b) Plastering with CM (1 : 5) 12 mm thickness for external surface including parapet

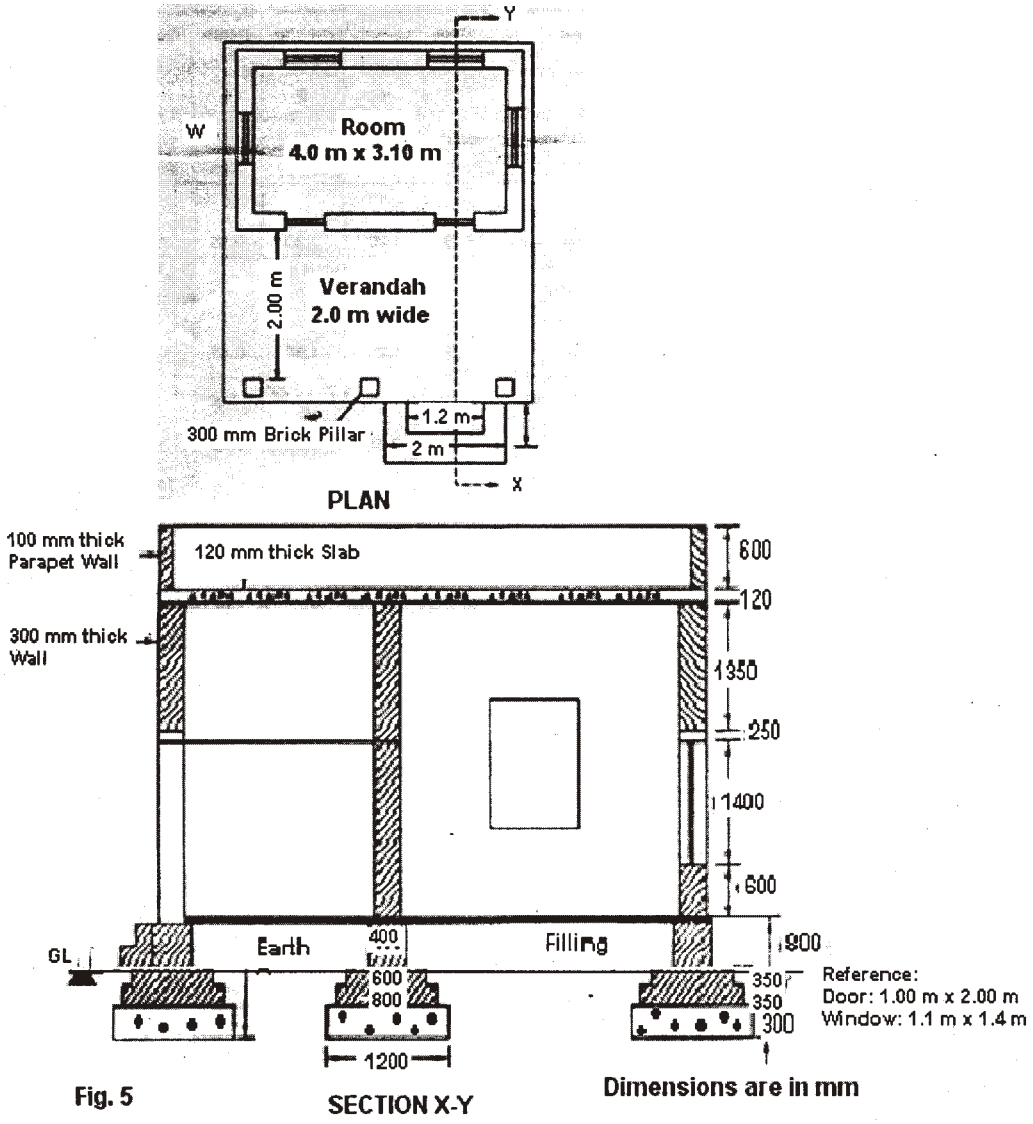

Y
W
Room
4.0 m x 3.10 m
Verandah
2.0 m wide
2.00 m
1.2 m
2 m
300 mm Brick Pillar
X
PLAN
100 mm thick
Parapet Wall
120 mm thick Slab
300 mm thick
Wall
600
120
1350
250
1400
600
GL
Earth
400
Filling
900
600
800
1200
350
350
300
Reference:
Door: 1.00 m x 2.00 m
Window: 1.1 m x 1.4 m
Fig. 5
SECTION X-Y
Dimensions are in mm

Fig. 5

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