C14–C–**403**

4426

BOARD DIPLOMA EXAMINATION, (C–14)
OCT/NOV—2017
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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define specification and list the different types of specifications.

2. State the unis of the measurement for the following items :

½×6=3

(a) Roofing with AC sheets

(b) Wood work for doors, windows

(c) Spreading of gravel for road work

(d) Plastering of walls

(e) Steel reinforcement in RCC

(f) Sinking of wells

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3. Explain the terms :   1½+1½=3

    (a) Embankment

    (b) Cutting

4. Find the volume of earth work 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.

5. Write a short note on mid sectional area method and give its equation.

6. Differentiate between detailed estimate and abstract estimate.

7. Write a short note on service unit method with an example.

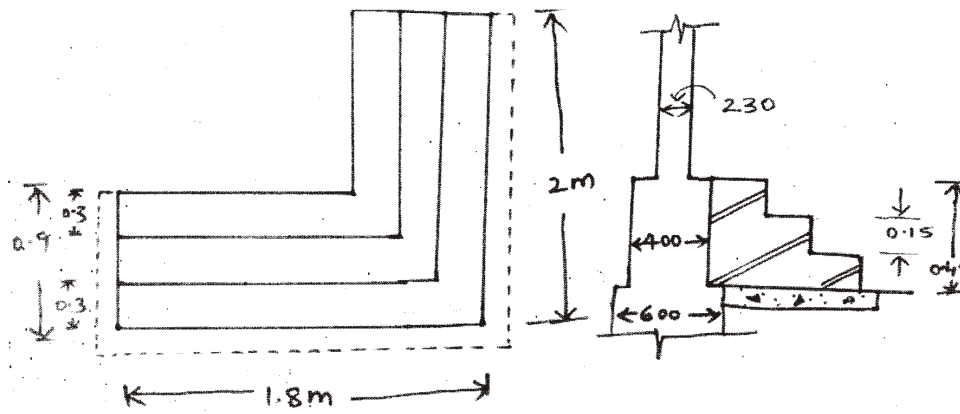**8.** Calculate the brick masonry required for the steps shown in Fig. 1 :

Fig. 1

9. Calculate the length of common rafter and No. of common rafters for the Fig. 2 with the following data :

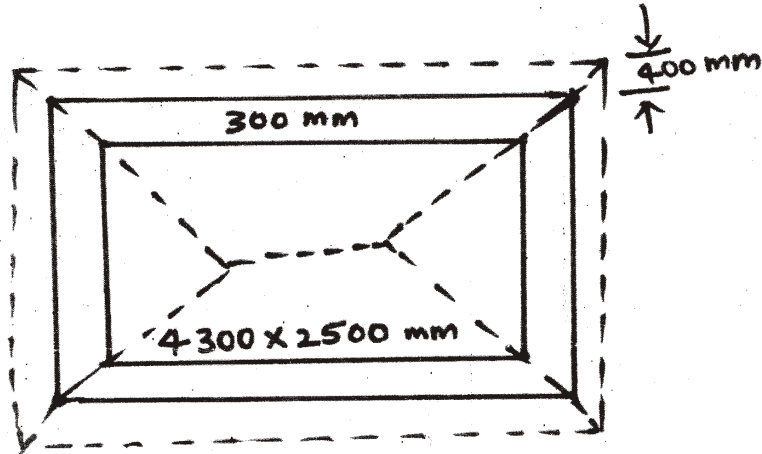- Slope of roof is $\frac{1}{3}$rd the span

- Spacing of common rafters 500 mm

Fig. 2

10. Calculate the quantity of sand required for filling in basement for the room of size 3·5 m × 3 m, if the height and thickness of the basement are 0·45 m and 0·45 m respectively. The thickness of the wall is 0·3 m.

<center>**PART—B**   10×5=50</center>

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. State and explain the methods of taking out quantities with examples and sketches. Mention the advantages of each method.   2+8

12. The road has the following data :

Chainage (in m)	200	220	240	260	280	300	320	340	360	380	400	420	440
RL (in m)	149·50	149·30	150·00	149·70	149·95	149·55	150·6	150·9	151·40	150·7	151·15	151·00	150·60
RL of formation	150·0				Rising 1 in 200						Falling 1 in 400		

The top width is 10 m and the side slope is 1·5 : 1. Assuming the transverse slope and of the ground is level. Calculate the volume of earthwork by trapezoidal rule.

13. The details of road of 2 km length *AB* are given below. Calculate the volume of earth work using *(a)* mid sectional method and *(b)* mean sectional method.

- Depth of embankment at *A*   1 m
- Depth of embankment at *B*   2 m
- Side slopes = 1 : 1 and top width of the road = 8 m   5+5

14. *(a)* Distinguish plinth area method and cubical content method in preparation of approximate estimate.

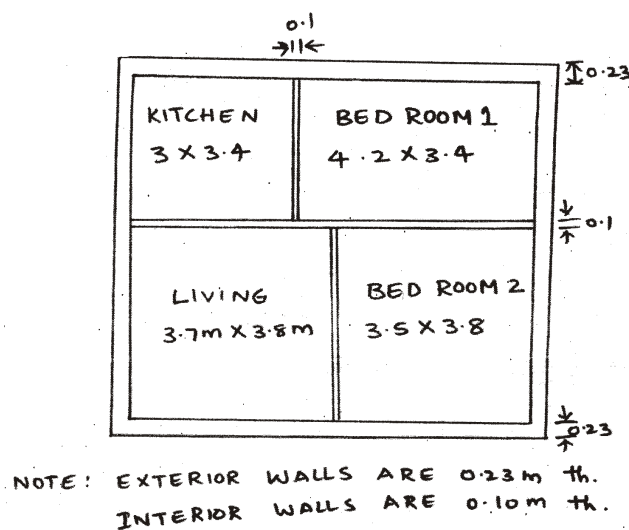*(b)* Find the plinth area of a building shown in the Fig. 3

NOTE: EXTERIOR WALLS ARE 0·23 m th.
INTERIOR WALLS ARE 0·10 m th.

Fig. 3   5+5

15. Answer the following :   7+3

(a) Preparation a rough estimate for the proposed commercial complex for a municipal corporation for the following data :

- Plinth area = 900 m^2/floor

- Height of each floor = 3·8 m

- No. of storey's = G+5

- Cubical content rate = ₹ 1,250/per m^3

- Water supply and sanitation = 9% of building cost

- Electrification = 7% of building cost

- Contractor's profit = 10% of building cost

- Fluctuation of rates = 4% of building cost

- P.S. and contingencies = 3% of building cost

(b) Prepare an approximate estimate of a polytechnic hostel for a capacity of 300 students. The cost of construction for each student is arrived at ₹ 50,000 by considering the recent hostel building construction.

16. Find the quantity of following items of the building shown in the Fig. 4 using centre to centre line method :

(a) Earth work excavation

(b) PCC (1 : 4 : 8) for foundation

(c) Brick masonry for the footings

(d) Bricks masonry for parapet wall

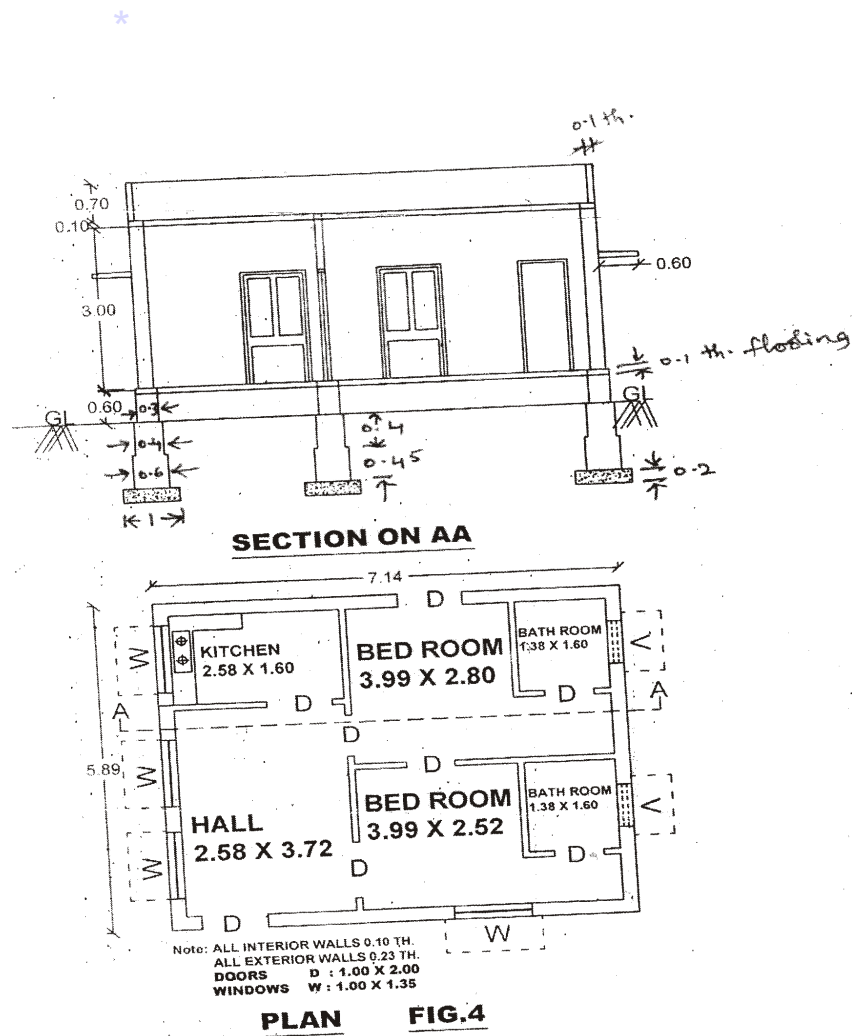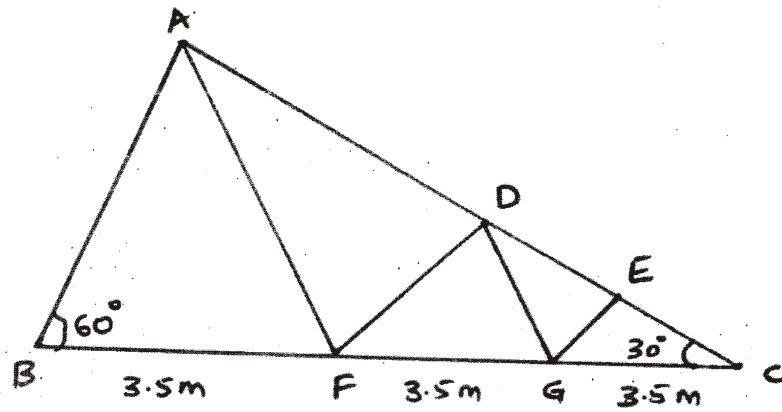**SECTION ON AA**

PLAN   **FIG.4**

Note: ALL INTERIOR WALLS 0.10 TH.
ALL EXTERIOR WALLS 0.23 TH.
DOORS   D : 1.00 X 2.00
WINDOWS   W : 1.00 X 1.35

Fig. 4

17. Find the quantity of following items of the building shown in the Fig. 4 using long wall and short wall method :

(a) Brick masonry for basement

(b) Filling of basement with sand

(c) Brick masonry in superstructure

18. Calculate the quantity of steel required for the steel truss shown in Fig. 5 :

All the members @ 25 kN/m

Fig. 5