



C14-C-403

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BOARD DIPLOMA EXAMINATION, (C-14)  
OCT/NOV—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) 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. State the painting coefficients for the following items as per IS : 12-1987 (Part-15) :
  - (a) Flush doors
  - (b) Fully glazed doors and windows (Wood)
  - (c) Fully panelled door
3. Define the terms 'lead' and 'lift'.
4. A canal is proposed to be formed as shown in Fig. 1. Calculate the lead and lift :

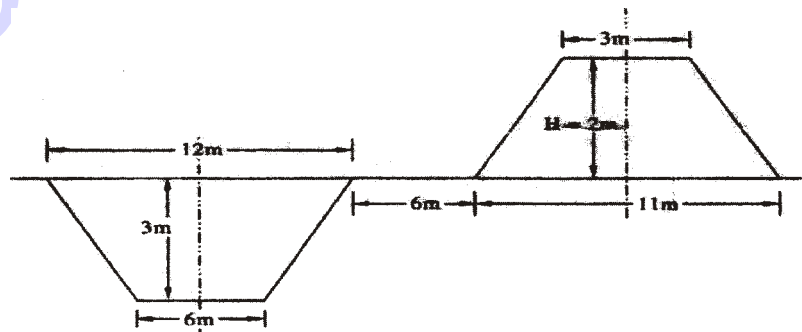


Fig. 1

- \* 5. A canal is proposed to be excavated between two points A and B which are 500 m apart. If the bed width is 8 m, side slopes are 2 : 1 and depth of cutting is 1.6 m at A and 2.1 m at B, calculate the quantity of earthwork by mid-sectional area method.
6. Tabulate the formats neatly of detailed estimate and abstract estimate separately.
7. Prepare the total cost of the building by plinth area method with the following data :
- (i) Plinth area of the building = 200 m<sup>2</sup>
  - (ii) Plinth area rate = ₹ 10,000 per m<sup>2</sup>
  - (iii) 25% of the building cost is allowed for different provisions of water supply, sanitary, electrical installations, architectural features, P.S. and contingencies etc. put together.
8. Plan and section of steps in front of a residential building are shown in Fig. 2. Calculate the quantity of brick masonry required for the steps :

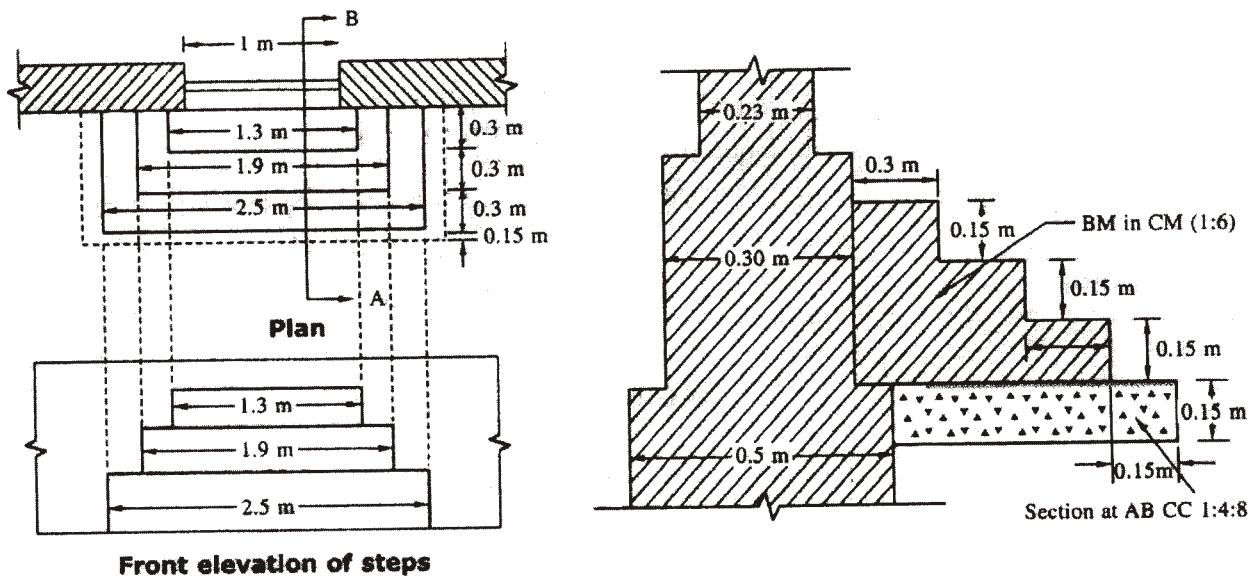
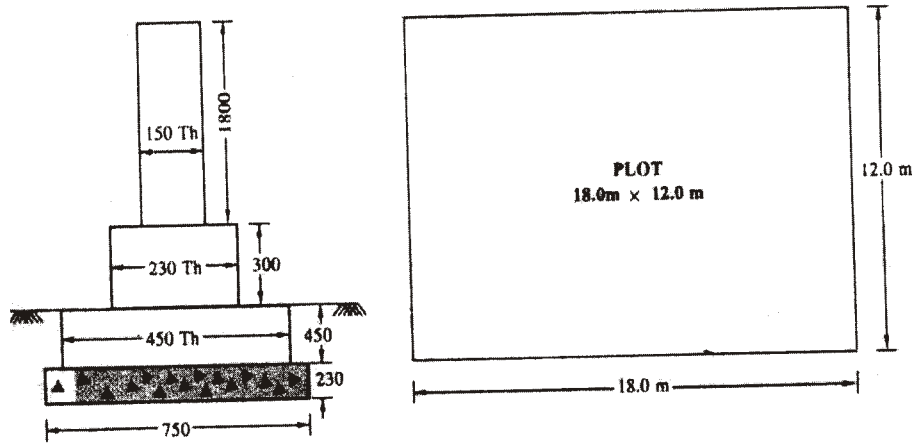


Fig. 2

9. Fig. 3 shows the plan and section of a part of a compound wall :



All dimensions on section are in mm remaining are in metres

Fig. 3

Calculate the quantity of earthwork excavation for foundation.

10. From the simple truss shown in Fig. 4, find the steel required for the following :

(a) Principal rafter (AB)—@ 0.108 kN/m

(b) Tie (AD)—@ 0.054 kN/m

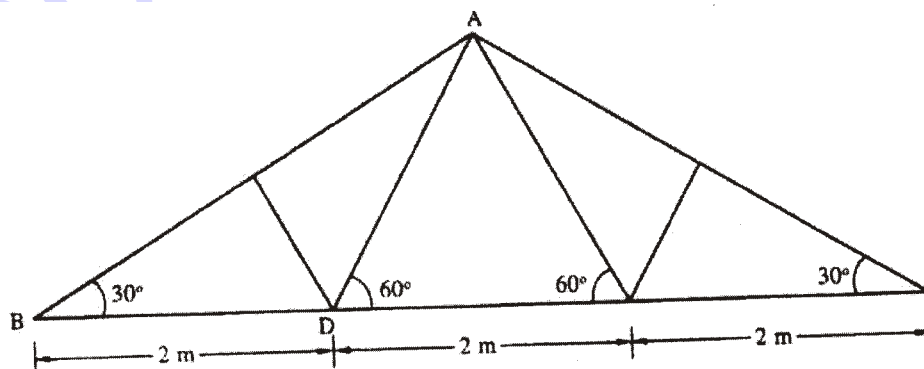


Fig. 4

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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 the criterion for valuation is the content but not the length of the answer.

- 11.** (a) Mention the duties of a quantity surveyor.  
(b) Explain the preparation with standard proformas of—  
(i) detailed estimate;  
(ii) abstract estimate.
- 12.** (a) What are different formulae used for calculation of volumes? Explain each method mentioning its utility.  
(b) Calculate the volume of the earthwork by any two methods for the details given below :  
(i) Width of formations—5·0 m  
(ii) Side slopes—1½ : 1  
(iii) Constant (common interval)—10 m  
(iv) Heights of filling @ 10 m interval—1·8 m, 2·1 m, 1·65 m, 1·9 m and 0·75 m
- 13.** 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

\*

- \* **14.** Prepare a preliminary estimate of a building project with total plinth area  $600 \text{ m}^2$ . From the following data, calculate the total cost of the project :

- (i) Plinth area rate—₹ 12,000 per  $\text{m}^2$
- (ii) Add for water supply and sanitary fittings—@  $12\frac{1}{2}\%$  of cost of the building
- (iii) Add for electrification—@  $7\frac{1}{2}\%$  of cost of the building
- (iv) Add for architectural features—@ 1% of cost of the building
- (v) Add for unforeseen items—@ 3% of cost of the building
- (vi) Add for roads and lawns—@ 5% of cost of the building
- (vii) Add for petty supervision charges—@ 4% of cost of the building

- 15.** Prepare a rough estimate for a proposed commercial complex for a corporation for the following data :

Plinth area =  $400 \text{ m}^2$

Height of each floor = 3 m

No. of stories = Ground floor + 2

Cubical content rate = ₹ 3,000 per  $\text{m}^3$

Provisions are given below :

- (i) Water supply and sanitary fittings—@ 8% of building cost
- (ii) Electrification—@ 6% of building cost
- (iii) Fluctuation of rates—@ 5% of building cost

\* Provide the following provisions as percentage of total building cost :

- (iv) Contractor's margin—@ 10% of total cost
- (v) Petty supervision charges—@ 3% of total cost

\* 16. From Fig. 5 given below, calculate the quantities of the following items of work :

- (a) Earthwork excavation for foundation
- (b) Brick masonry in CM (1 : 6) for superstructure without deductions
- (c) Plastering to ceiling with CM (1 : 3)

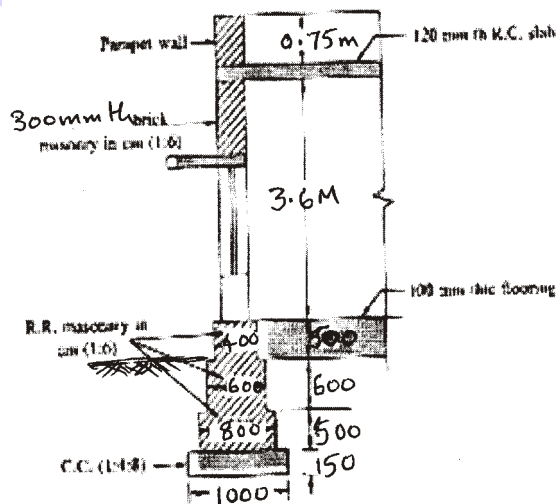
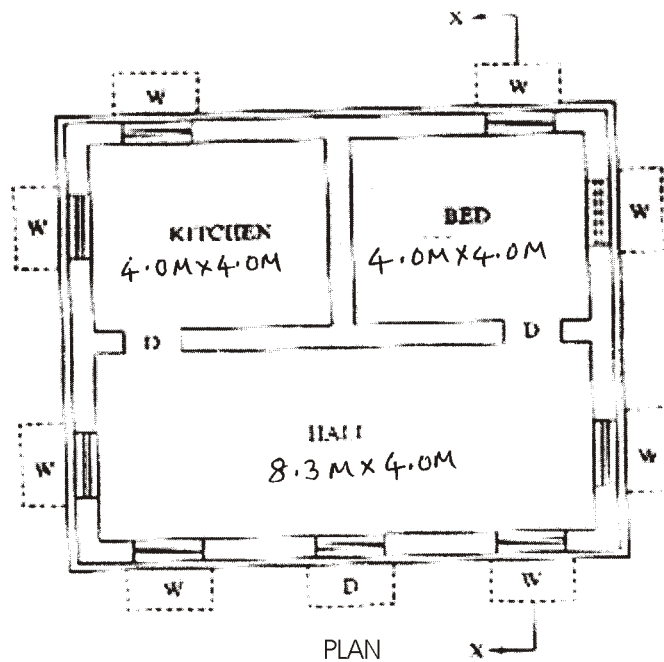


Fig. 5

17. Prepare the detailed estimate for the following items of work from Fig. 6 given below :

- (a) Brick masonry for superstructure without deductions
- (b) RR masonry in CM (1 : 6) for footings and basement
- (c) RCC M15 grade for roof slab

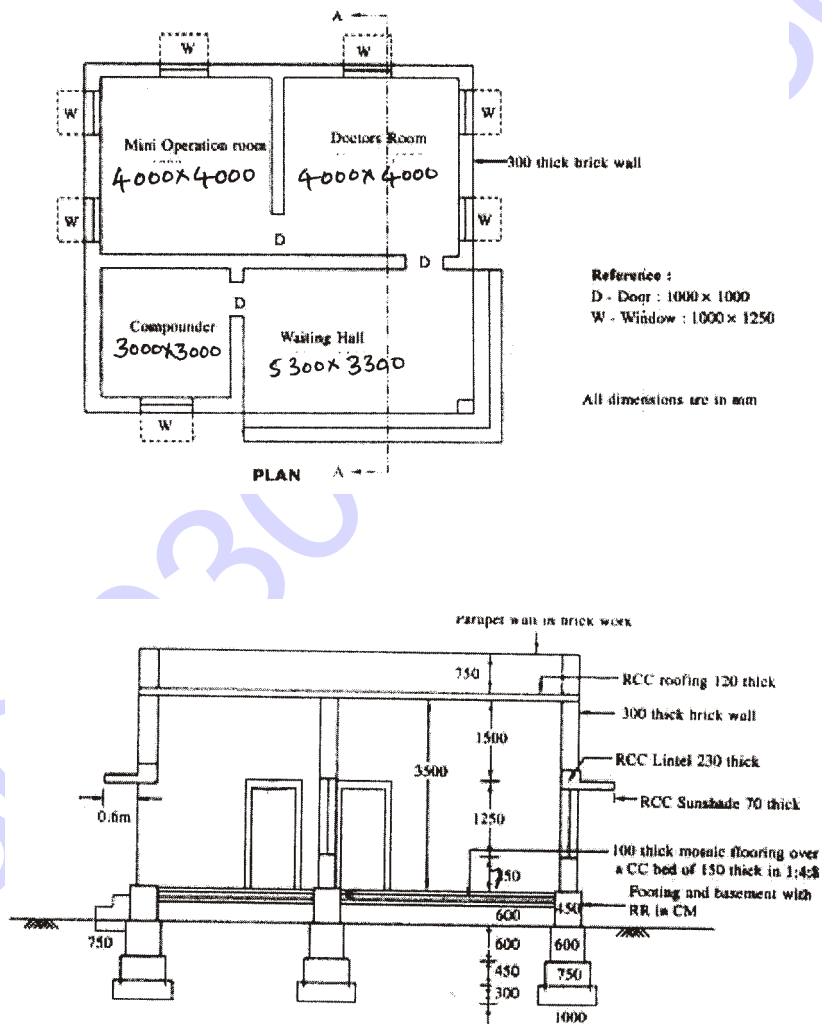


Fig. 6

18. Prepare the detailed estimate for the following items of work from Fig. 7 given below :

- (a) Earthwork excavation for foundation
- (b) RCC roof slab (1 : 2 : 4) 120 mm thick
- (c) Flooring with polished stones

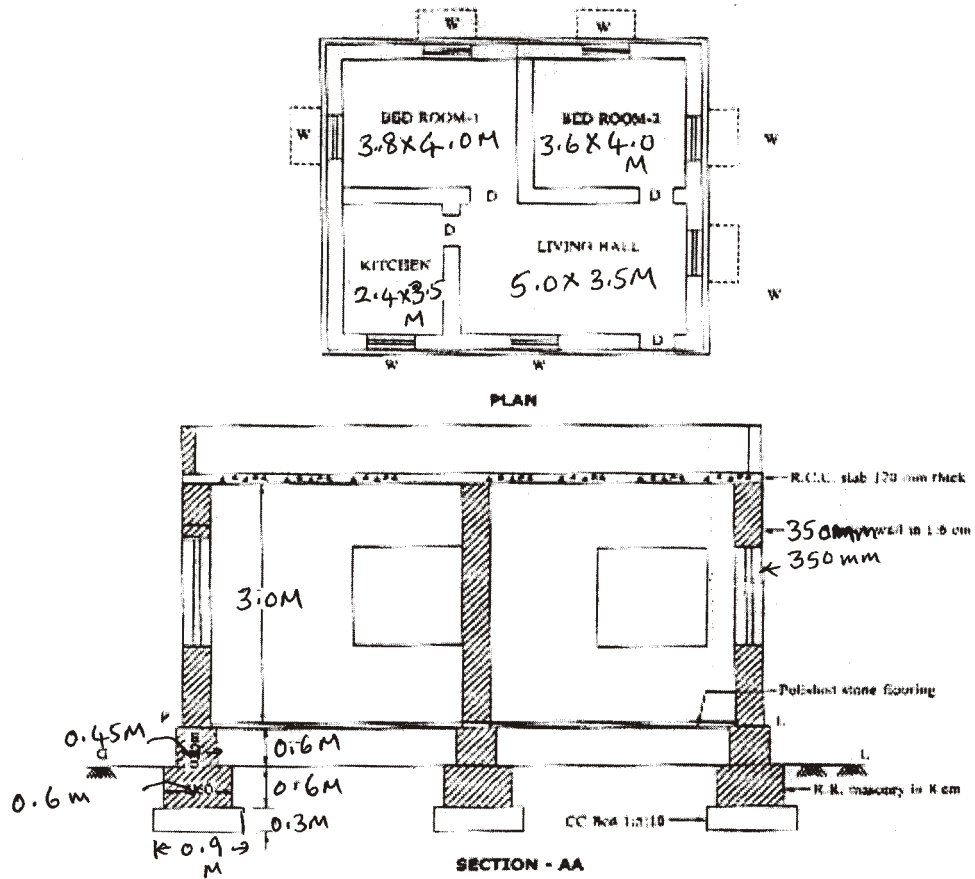


Fig. 7

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