4426

BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2018
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. State the units of measurements of the following items :

(a) Plain Cement Concrete for foundation

(b) Weather proof course

(c) Sand filling

2. List any three duties of Quantity Surveyor.

3. Calculate the volume of earth work involved in cutting open trench of the following size:

length = 500m, Side slope 2:1, Depth of trench = 3m, Width of the trench at bottom=1.5.

4. A canal is proposed to be formed as shown in Fig.1. Calculate the Lead and Lift.
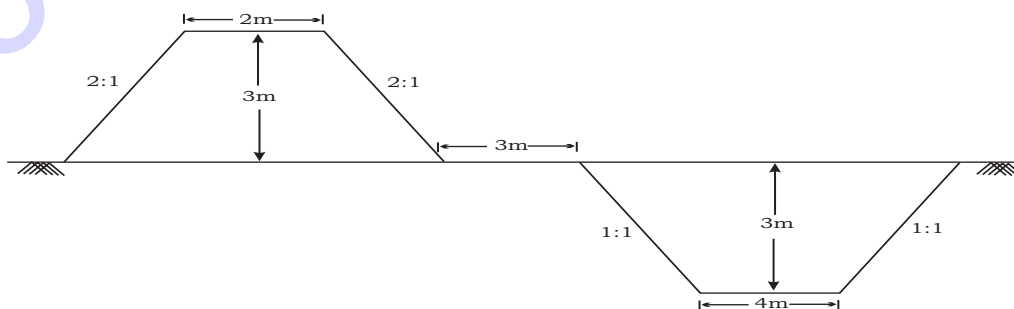

Fig. 1

5. A plot of 20m ×30m, calculate the quantity of earth work by using spot levels as shown in Fig.2. For general leveling of 90m R.L.
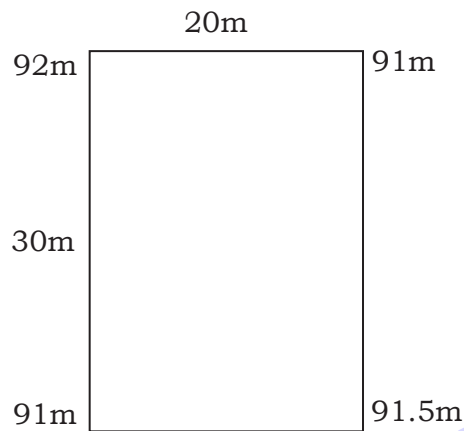

Fig. 2

6. State the purpose of approximate estimate and give the different methods adopted.

7. Prepare an approximate estimate of the hostel for 250 students if the area allowed per student is 10m². The plinth area rate is Rs. 3500/- per m².

8. Plan and section of steps in front of a residential building is shown in Fig.3. Calculate the quantity of brick masonry required for steps.
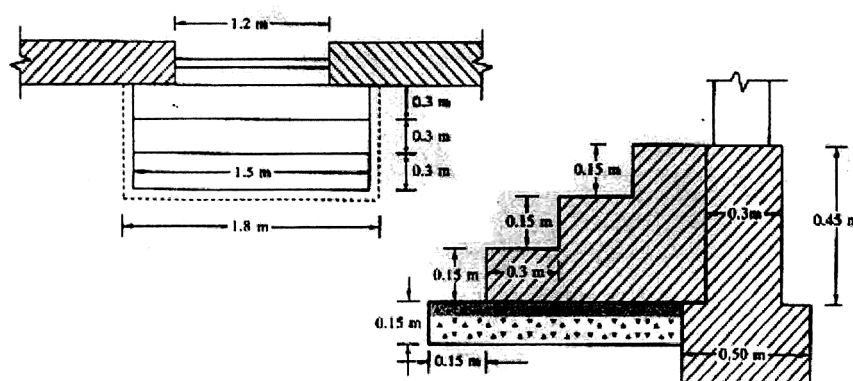

Fig. 3

9. Fig. 4 shows the plan and the section of a part of a compound wall. Calculate the quantity of Brick masonry required for footing and wall.
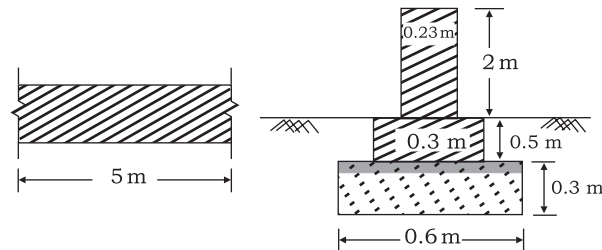

Fig. 4

10. The Plan showing gabled end is shown in Fig. 5. Calculate–

(a) Length of Ridge Piece
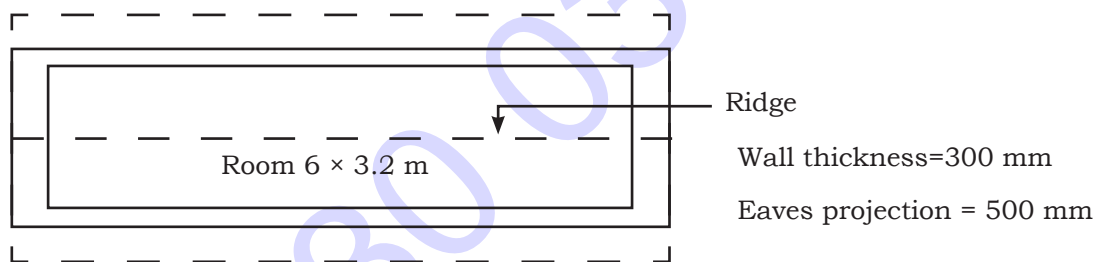
(b) No. of Common Rafters spaced @ 500mm C/C.

Ridge

Wall thickness=300 mm

Eaves projection = 500 mm

Room 6 × 3.2 m

Fig. 5

PART–B   5×10=50

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

(2) Each questions carries **ten** marks

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

11. Write the General specifications for the following items of work:

(a) Earth work Excavation

(b) Floor finishes with ceramic tiles and Marbles

12. For an embankment 60 m long of uniform gradient the height of bank is 3 m at one end and 1.8 m at the other. The width of embankment at top is 6 m and its side slopes are 1.5:1. Estimate the quantity of earthwork by

(a) Mid Sectional Method;

(b) Mean Sectional area method;

(c) Prismoidal formula.

13. From the particulars of a reservoir given below, calculate the capacity of a reservoir between the Sill level and M.W.L of the reservoir by (a) Trapezoidal rule (b) prismoidal rule.

S.No.	Level in-m	Area in-Sqm	Particulars
1	40.00	1,500	Bed Level
2	42.00	2,800	–
3	44.00	4,200	Sill Level
4	46.00	6,500	–
5	48.00	9,500	–
6	50.00	12,000	F.T.L
7	52.00	15,000	M.W.L

14. Prepare a preliminary estimate of a proposed building having plinth area 350 m^2. From the following data calculate the total cost of the building:

(a) Plinth area rate Rs. 1500/- per m^2

(b) Add for water supply and sanitary fittings @ 12½%

(c) Add for electrification @ 7½%

(d) Add for architectural features @ 2%

(e) Add for unforeseen items @ 3%

(f) Add for fluctuation of rates @ 5%

(g) Add for petty supervision charges @ 3%

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

Plinth area = 500m^2.

Height of each floor = 3m.

No. of stories = Ground floor + 2

Cubical Content rate = Rs. 1000/- per m^3.

Provisions are given below :

(a) water supply and sanitary fittings @ 8% of building cost.

(b) Electrification @ 6% of building cost.

(c) fluctuation of rates @ 5% of building cost

Provide the following provisions as percentage of total building cost:

(d) Contractor's margin @ 10% of total cost

(e) Petty supervision charges @ 3% of total cost

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

(a) Earthwork Excavation for foundation

(b) Brick Masonry in CM (1:5) without deductions

(c) R.R. Masonry in C.M. (1:6) for Basement
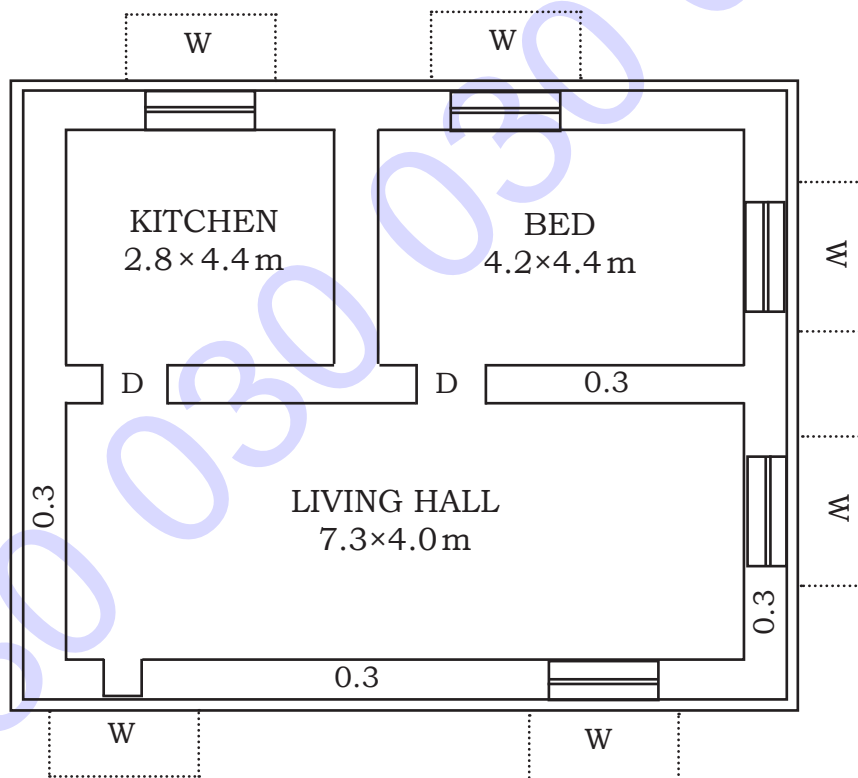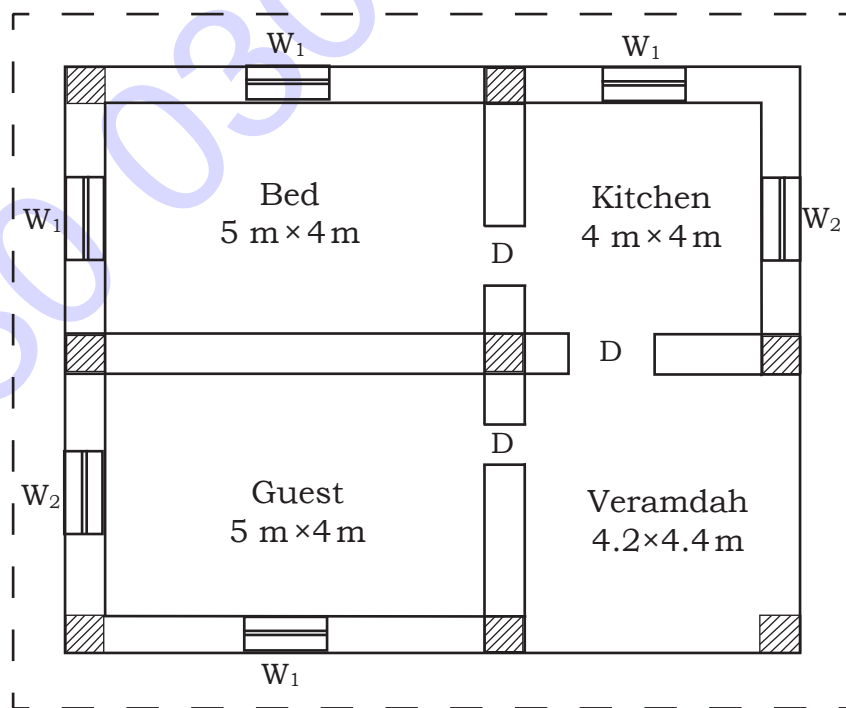

PLAN

Fig. 6
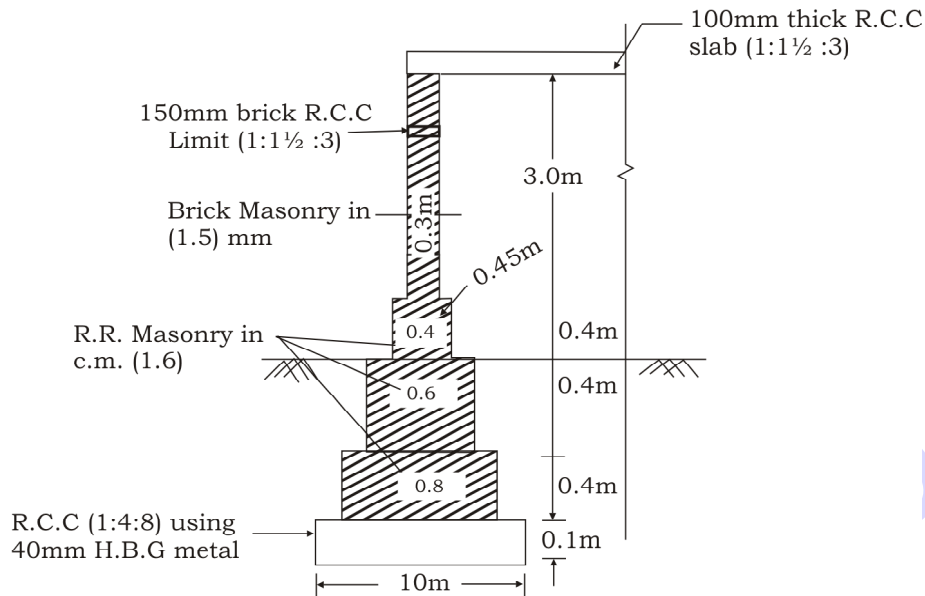
SECTION

Fig. 6

17. For enclosed Fig. 7 Calculate the quantities of the following items of work:

(a) Earth work excavation for all column footings

(b) P.C.C. (1:4:8) using 40mm H.B.G metal for foundations (under Columns only)

(c) R.C.C (1:1.5:3) using H.B.G metal for all column footings
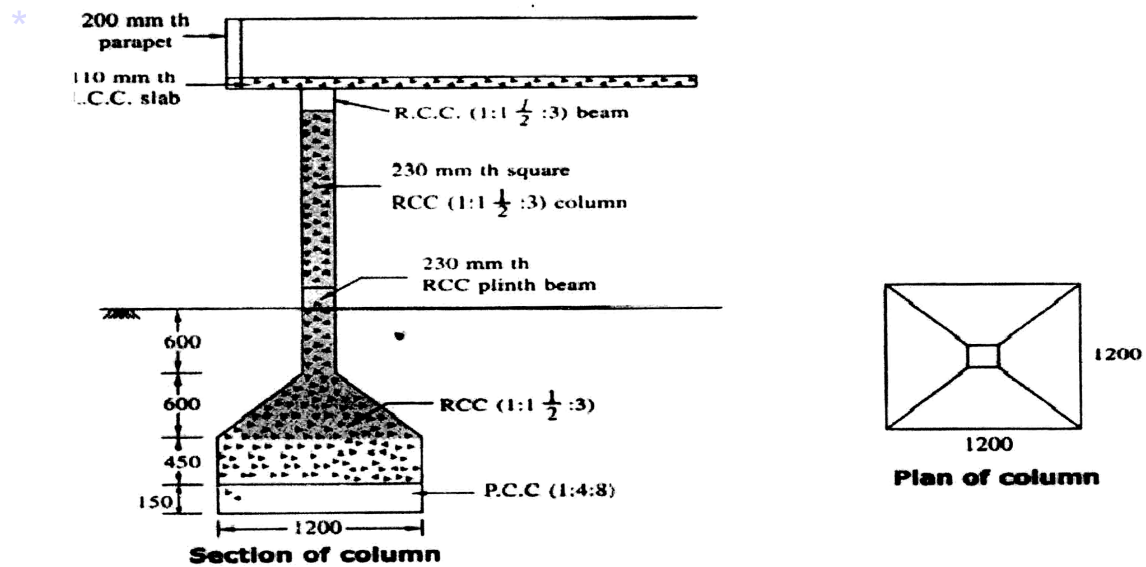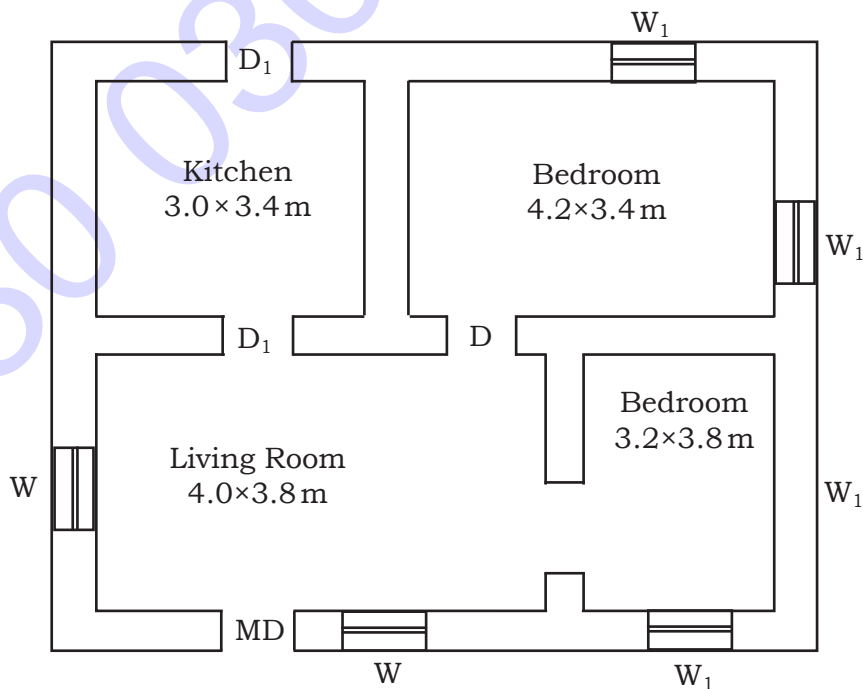

PLAN

200 mm th parapet

110 mm th L.C.C. slab

R.C.C. $(1:1\frac{1}{2}:3)$ beam

230 mm th square RCC $(1:1\frac{1}{2}:3)$ column

230 mm th RCC plinth beam

600

600

RCC $(1:1\frac{1}{2}:3)$

450

150

P.C.C $(1:4:8)$

1200

Section of column

1200

1200

Plan of column

Fig. 7

18. Prepare the detailed estimate for the following items of work from the given Fig. 8:

(a) R.R Masonry in footings

(b) Brick Masonry in CM (1:6) for super structure excluding parapet and without deductions for doors, windows and lintels
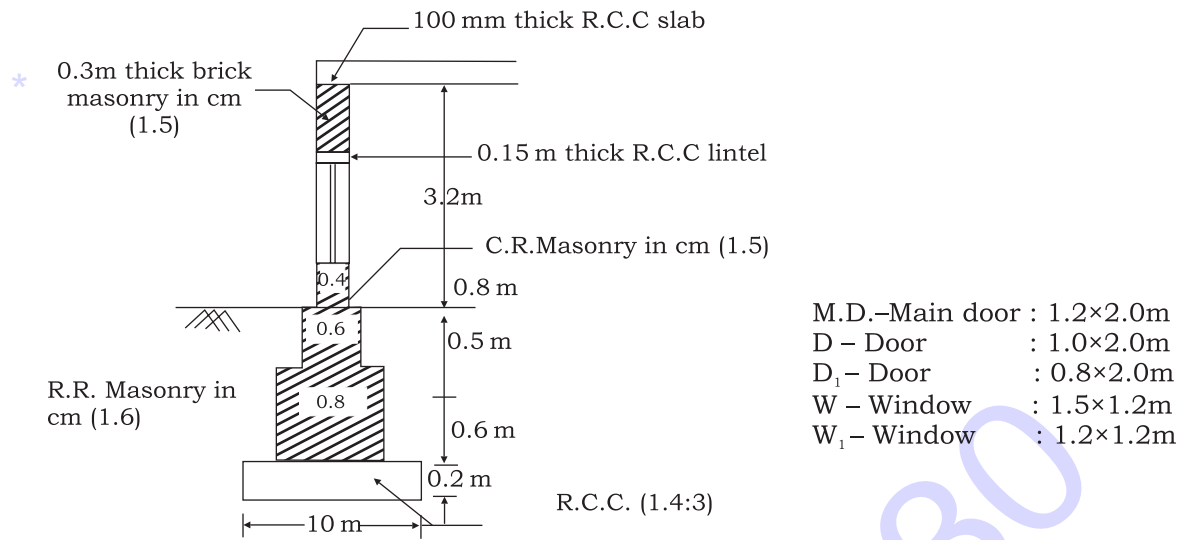
(c) R.C.C roof slab (1:2:4) 100 mm thick

W_1

D_1

Kitchen
3.0 × 3.4 m

Bedroom
4.2×3.4 m

W_1

D_1

D

Bedroom
3.2×3.8 m

W

Living Room
4.0×3.8 m

W_1

MD

W

W_1

100 mm thick R.C.C slab

0.3m thick brick masonry in cm (1.5)

0.15 m thick R.C.C lintel

3.2m

C.R.Masonry in cm (1.5)

0.4

0.8 m

0.6

0.5 m

R.R. Masonry in cm (1.6)

0.8

0.6 m

0.2 m

10 m

R.C.C. (1.4:3)

M.D.–Main door : 1.2×2.0m
D – Door : 1.0×2.0m
D_1– Door : 0.8×2.0m
W – Window : 1.5×1.2m
W_1– Window : 1.2×1.2m

Fig. 8