



c16-c-403

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BOARD DIPLOMA EXAMINATION, (C-16)

SEPTEMBER/OCTOBER - 2020

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. What is the necessity of specifications?
2. State the difference between detailed estimate and abstract estimate.
3. The internal dimensions of a room are 6.25 m×4.25 m. Find the quantity of sand filling in the basement. The height and thickness of basement are 750 mm and 450 mm respectively. The wall thickness of room is 230 mm.

- * 4. From the simple truss shown in Fig. 1, find the steel required for the following :

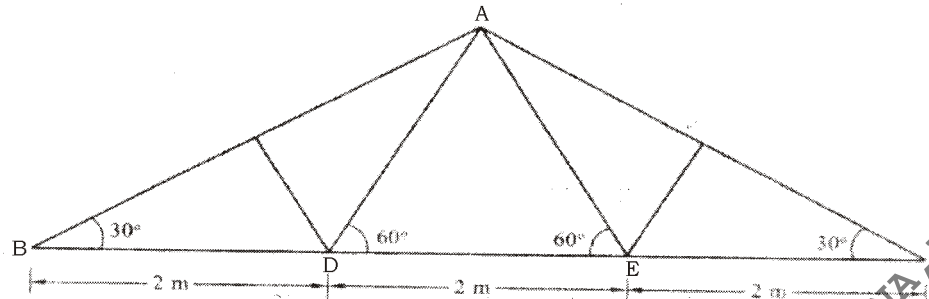


Fig. 1

- (a) Principal rafter $AB @ 0.108 \text{ kN/m}$
 (b) Tie $AD @ 0.054 \text{ kN/m}$
5. Calculate the quantities of ingredients for 10 cu.m of CC (1:2:4) proportion.
6. The size of the RCC beam is $230 \text{ mm} \times 500 \text{ mm}$ with all covers 25 mm. Calculate the length of the stirrup of 8 mm dia.
7. Find the lead and lift of the following from Fig. 2 :

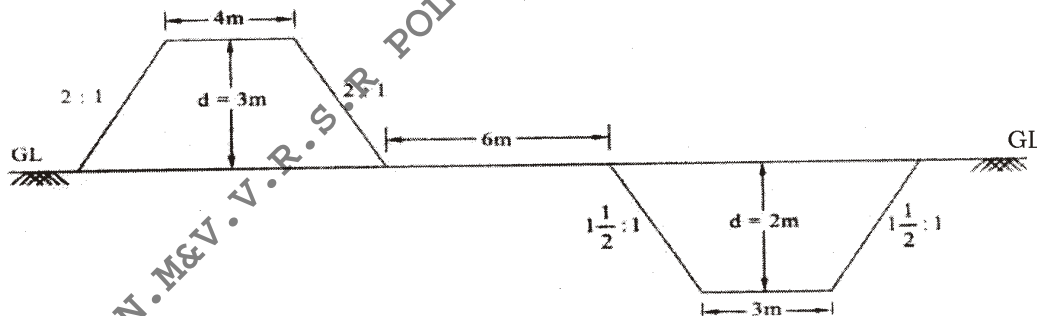


Fig. 2

8. Calculate the quantity of gravel to be collected for granular shoulders on either side of WBM road having length 800 m. The width of shoulder is 1.0 m. The compacted thickness 100 mm (loose thickness 120 mm).
9. Define the following :
- (a) Scrap value
 (b) Depreciation

- * 10. State any three types of outgoing to be considered during fixation of rent.

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. From Fig. 3, calculate the quantities of the following items of work :

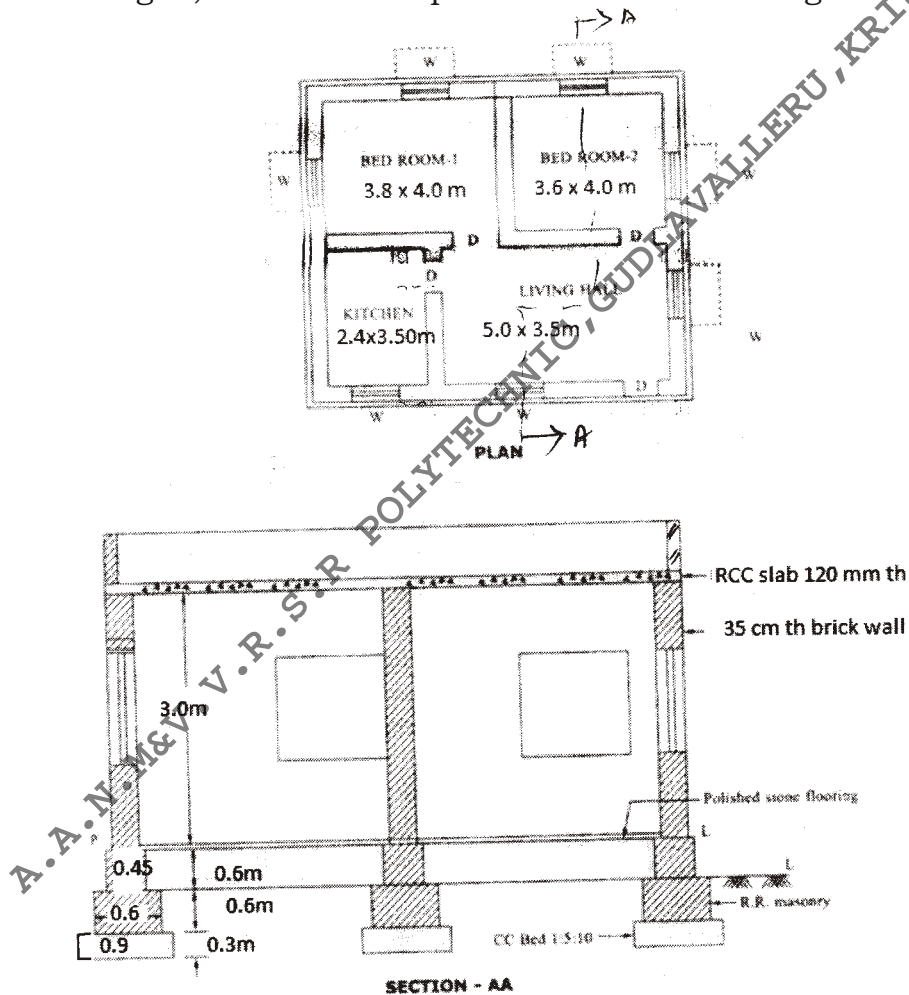


Fig. 3

- (a) RR masonry in CM (1 : 6) for footing
 (b) RCC roof slab (1 : 2 : 4) 120 mm thick
 (c) Flooring with polished stones

12. From Fig. 4, calculate the quantities of the following items of work :

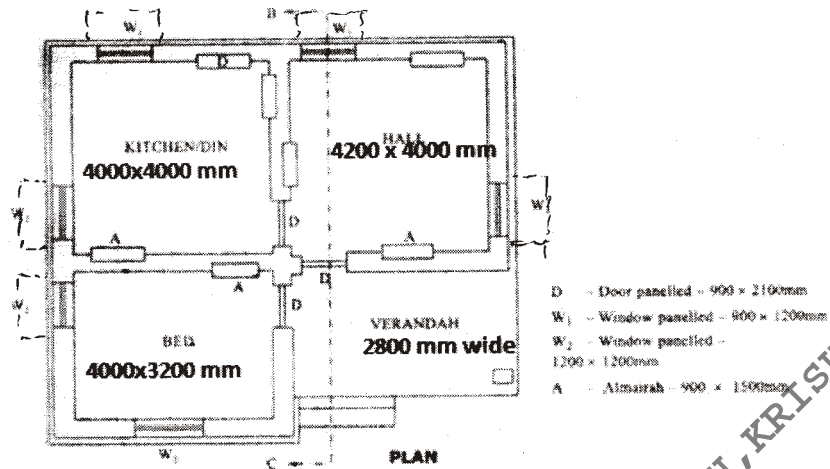


Fig. 4

- (a) Earthwork excavation for foundation
- (b) Brick masonry in CM (1 : 6) for footing and basement
- (c) RCC M15 grade for roof slab and lintels

13. Prepare a data sheet and calculate the cost of the items given below :

- (a) Cement concrete (1 : 4 : 8) using 40 mm HBG metal— 1 m^3
- (b) RR masonry in CM (1 : 6)— 1 m^3

*

Materials and labour required for :

<u>Cement concrete (1 : 4 : 8)—1 m³</u>	<u>RR masonry in CM (1 : 6)—1 m³</u>
0.92 m ³ —HBG metal	1.10 m ³ —Rough stone
0.46 m ³ —Sand	0.34 m ³ —CM (1 : 6)
0.115 m ³ —Cement	1.80 nos.—Mason
0.20 nos.—Mason	2.80 nos.—Mazdoors
3.20 nos.—Mazdoors	LS sundries
LS sundries	

Lead statement of materials :

Sl. No.	Materials	Rate (₹)	Per	Lead	Conveyance charges
1	40 mm size HBG metal	650	1 m ³	10 km	₹ 12 per 1 km
2	Sand	400	1 m ³	8 km	₹ 12 per 1 km
3	Rough stone	210	1 m ³	5 km	₹ 9 per 1 km
4	Cement	6,000	1 ton	At site	

Labour charges per day :

1. Mason I class = ₹ 420
2. Mason II class = ₹ 380
3. Mazdoor = ₹ 350
4. Hand mixing charges for CM per m³ = ₹ 40

14. Prepare a data sheet and calculate the cost of the items given below :

- (a) Flooring with 25 mm thick polished Shahabad stone of I quality of size not exceeding 400 mm×40 mm, laid over set CM (1 : 10) 16 mm thick base coat—10 sq.m
- (b) Painting with white cement paint I quality two coats to walls after surface is thoroughly cleaned including cost and conveyance of materials to site, etc.—10 sq.m

* **Materials and labour required for :**

25 mm thick polished Shahabad stone—10 sq.m	Painting with cement paint—10 sq.m
10·10 sq.m—Polished stone	3·5 kg—White cement paint
0·12 cu.m—CM (1 : 10)	0·15 nos.—Mason I class
0·96 nos.—Mason I class	0·35 nos.—Mason II class
2·24 nos.—Mason II class	0·50 nos.—Man mazdoors
2·20 nos.—Man mazdoors	1·00 nos.—Women mazdoors
1·10 nos.—Women mazdoors	LS sundries
LS sundries	

Lead statement of materials :

Sl. No.	Materials	Rate (₹)	Per	Lead	Conveyance charges
1	Polished stone	1,650	sq.m	8 km	₹ 10 per 10 sq.m
2	Sand	250	1 m ³	20 km	₹ 160 for 20 km/1cu.m
3	Cement	3,400	MT	4 km	₹ 3 per bag
4	White cement paint	15	kg	At site	

Labour charges per day :

1. Mason I class = ₹ 160
2. Mason II class = ₹ 140
3. Man mazdoor = ₹ 110
4. Woman mazdoor = ₹ 110
5. Hand mixing charges for CM per m³ = ₹ 20

15. A road in embankment has the following data :

Chainage (in m)	0	30	60	90	120
RL of ground (in m)	30.80	31.25	31.85	32.25	33.00

Formation level at chainage zero is 33.00 and having a rising gradient of 1 in 120. Top width of formation is 10 m and side slope 2H : 1V. Assuming that the transverse slope of the ground is in level, calculate the volume of earth by—

- (a) trapezoidal formula;
- (b) prismoidal formula.

16. Prepare the detailed estimate for the cement road of 1.5 km length for the following items of work as shown in Fig. 5 :

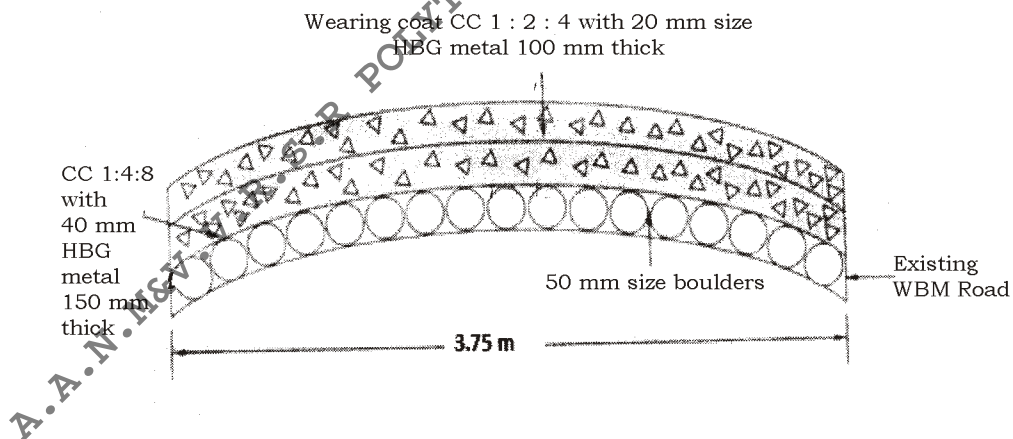


Fig. 5

- (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
- (c) Spreading of 50 mm size of boulders of 150 mm thick

- * 17. Calculate the following quantities for an overhead tank as shown in Fig. 6 :

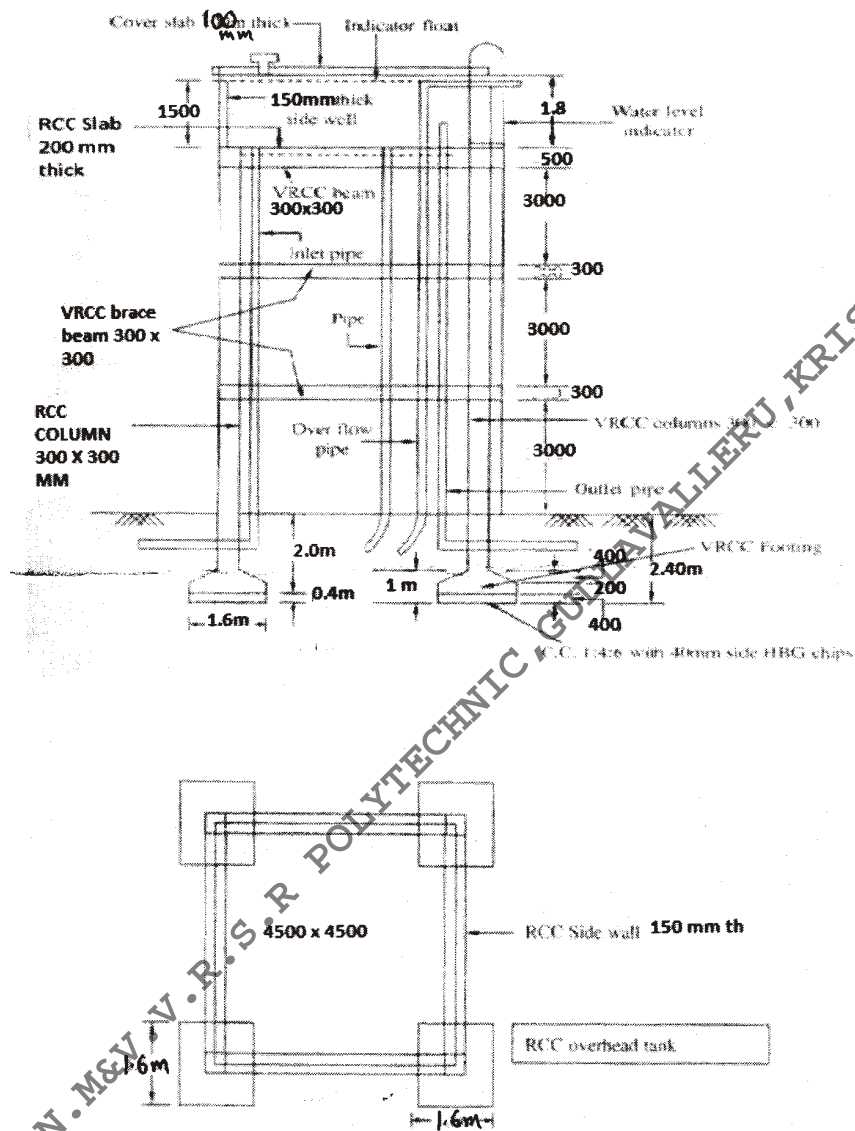


Fig. 6

- (a) Earthwork excavation for column foundations
 (b) RCC (1:2:4) for cover slab, bottom slab and side walls
- * 18. A Hero Honda Splender Plus was purchased for ₹ 52,000 in 2004. The salvage value of the Splender Plus is ₹ 26,000 in 2009. Calculate the depreciation for each year by constant percentage method.
