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C09–C–404

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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2018

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.

1. State the units of measurement for the following :

(a) Rainwater pipe

(b) Filling in basement with sand

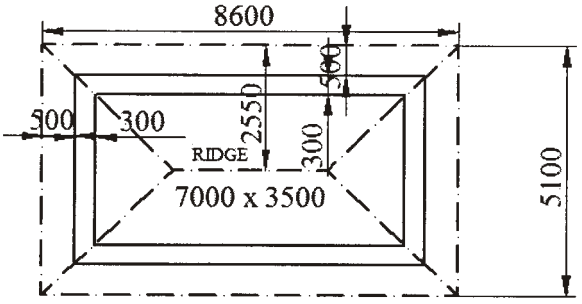
(c) Steel reinforcement in RCC

2. State different approximate methods of estimating civil engineering structures.

3. For the hipped roof shown in the sketch below, calculate—

(a) length of hip rafter;

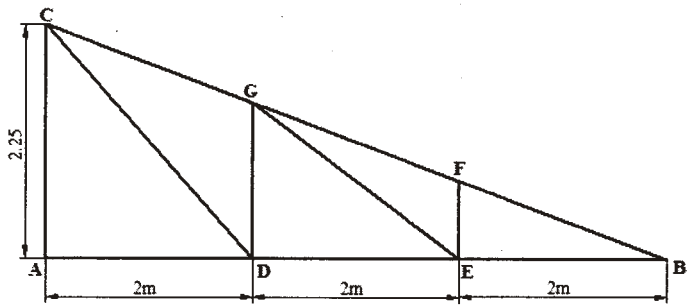
(b) ridge piece length.



RISE OF ROOF $\frac{1}{3}$ SPAN

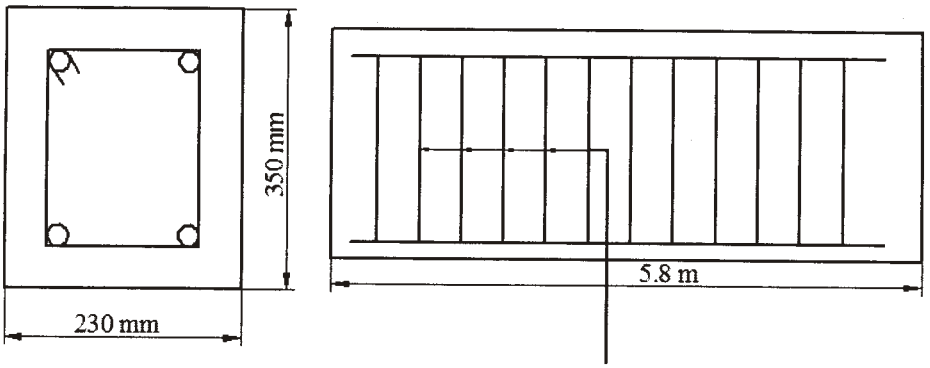
Note: All dimensions are in mm.

4. Calculate the length of the members DC, EG and DG for the truss shown in the figure below.



5. Calculate the quantities of cement, sand and coarse aggregate for preparing 5 cu.m of CC (1:2:4) using 20 mm HBG metal.

6. Calculate the total weight of stirrups of 8 mm dia for a simply supported beam shown in the figure below. Weight of rod is 0·41 kg/m. Assume the clear cover as 25 mm.



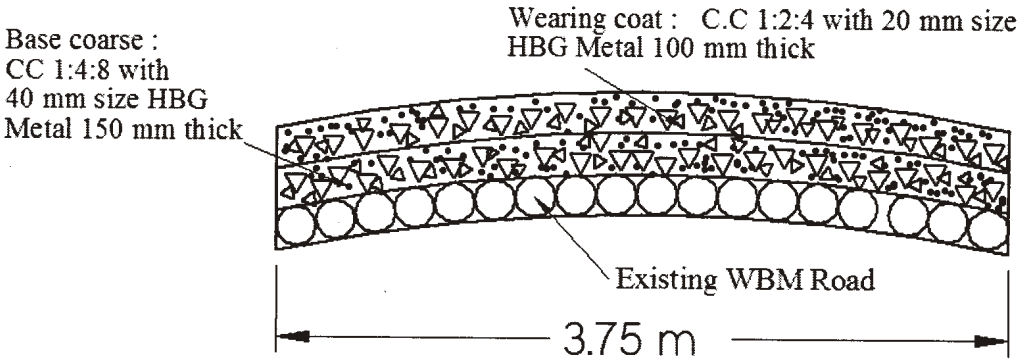
8 mm 200 mm c/c

7. Estimate the quantities of earthwork in part of an embankment 60 m long having uniform gradient, with the height of bank 3 m, at one end and 1·8 m at the other end. The width of embankment at top is 6 m and its side slopes are $1\frac{1}{2}$:1. Transverse slope of ground is level.

8. Prepare the detailed estimate for the cement concrete road of 1 km length for the following items of work, as shown in the figure below :

(a) Base coarse CC 1:4:8 with 40 mm size HBG metal 150 mm thick

(b) Wearing coat with CC 1:2:4 with 20 mm size HBG metal 100 mm thick



9. Write a short note on depreciation.

10. The cost of a newly constructed building including all provisions is ₹ 18,00,000. Calculate monthly rent, if the reasonable interest on capital is 8%.

PART—B

10×5=50

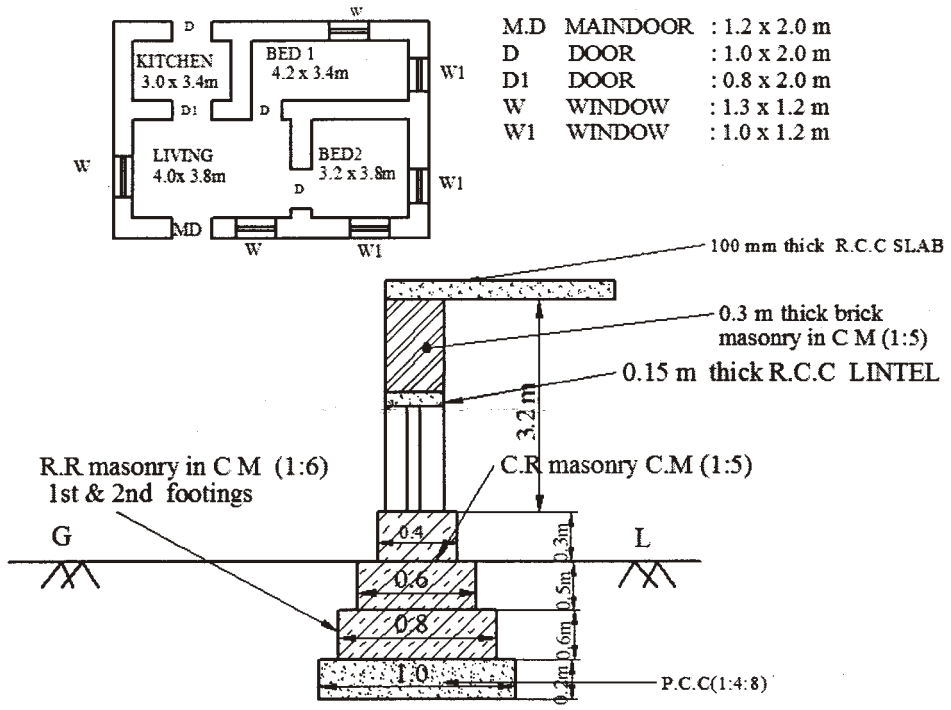
Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

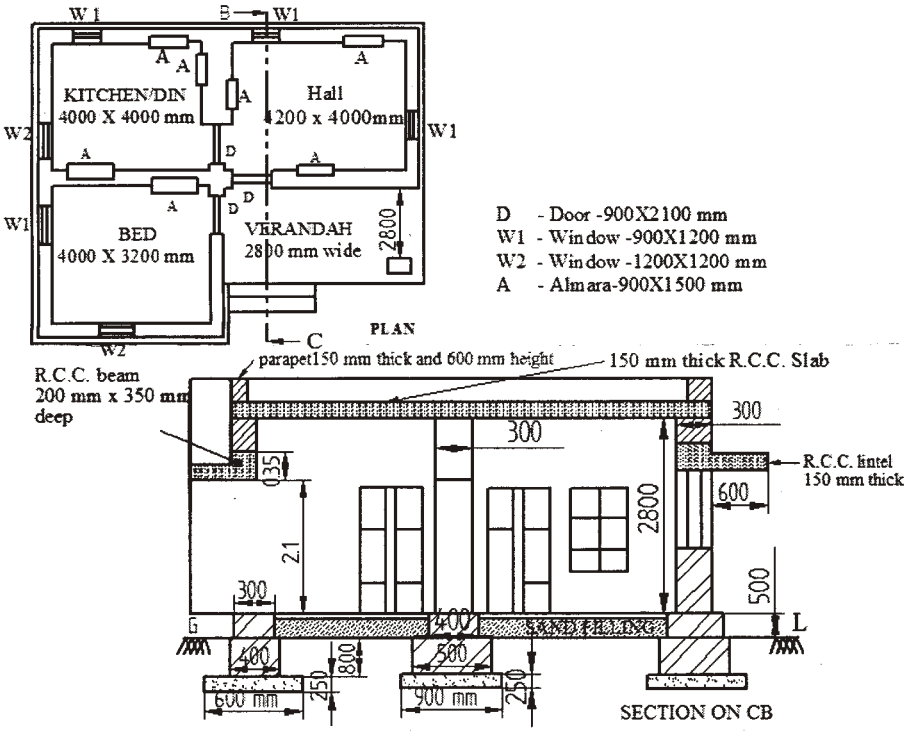
11. Prepare the detailed estimate for the following items of work for the building shown in the figure below :

(a) Earthwork in excavation for foundation

(b) RR masonry for 1st and 2nd footing



12. Prepare the detailed estimate for the following items of work for the building shown in the figure below.



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

(a) Cement concrete (1:4:8) using 40 mm HBG metal unit–1 m^3

(b) RR masonry in CM (1:6) unit–1 m^3

Materials and labour required for

CC (1:4:8) using 40 mm HBG metal-1 cu.m		RR Masonry in CM (1:6)-1 cu.m	
0·92 m^3	HBG metal	1·1 m^3	Rough stone
0·46 m^3	Sand	0·38 m^3	CM 1:6
0·115 m^3	Cement	1·8 No.	Mason
0·2 No.	Mason	2·8 No.	Mazdoor
3·2 No.	Mazdoors	L.S.	Sundries
L.S.	Sundries		

Lead statement of materials :

S. No.	Material	Rate at source	Lead in km	Conveyance per cu.m
1	40 mm HBG metal	₹ 400 per m^3	10 KM MR	₹ 2 per Km
2	Sand	₹ 90 per m^3	8 KM MR	₹ 2 per Km
3	Rough stone	₹ 150 per m^3	5 KM MR	₹ 3 per Km
4	Cement	₹ 2200 per tonne	At site	

Labour charges :

(a) Mason 1st class ₹ 223.00 per day

(b) Mason 2nd class ₹ 217.00 per day

(c) Mazdoor ₹ 212.50 per day

(d) Hand mixing charges of cement mortar per m^3 ₹ 34.00

14. Prepare the data sheet and calculate the cost for the following items of work :

(a) RR masonry with CM (1:8) unit-1 m^3

1·05 m^3	Rough stone
0·34 m^3	CM (1:8)
1·8 No.	Mason
2·8 Nos.	Man Mazdoor
LS	Sundries

(b) Pointing to RR masonry in CM (1:5) unit– 10 m^3

0·09 m^3	CM (1:5)
2·28 Nos.	Mason
0·5 Nos.	Man Mazdoor
1·1 Nos.	Women Mazdoor
LS	Sundries

Lead statement of materials :

S. No.	Materials	Rate at source ₹	Leads in km	Conveyance charges/km
1	Rough stone	320.00/m^3	15 km	4·00/m^3
2	Sand	95·00/m^3	10 km	3·00/m^3
3	Cement	2500.00/10kN (1 tonne)	At site	

Labour charges :

Mason	₹ 225/day
Man Mazdoor	₹ 180/day
Woman Mazdoor	₹ 180/m^3
Mixiing charges for CM	₹ 40/m^3

15. The areas enclosed by contour lines for a soil heap are as follows :

Contour in meters	Area in Sq. m
200	1·0
199	4·0
198	15·0
197	47·0
196	120·0
195	180·0
194	260·0
193	340·0
192	430·0

Taking 192·0 as the general ground level and 200 as the crest point of heap, find the volume of earthwork by using

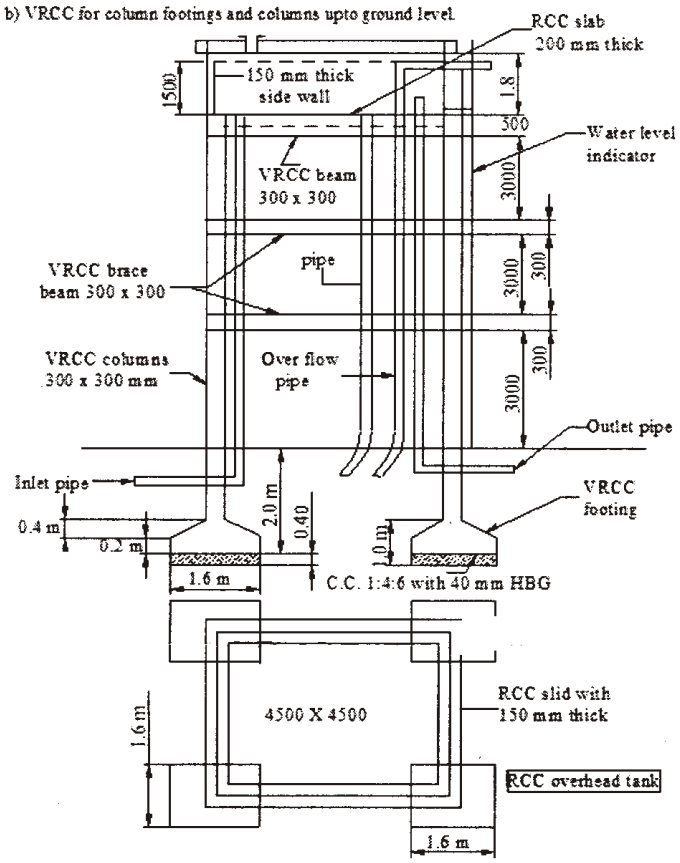
(a) Trapezoidal rule;

(b) Prismoidal rule.

16. Prepare the detailed estimate for following items for an overhead trank shown in the figure below.

(a) Earthwork excavation for column foundation

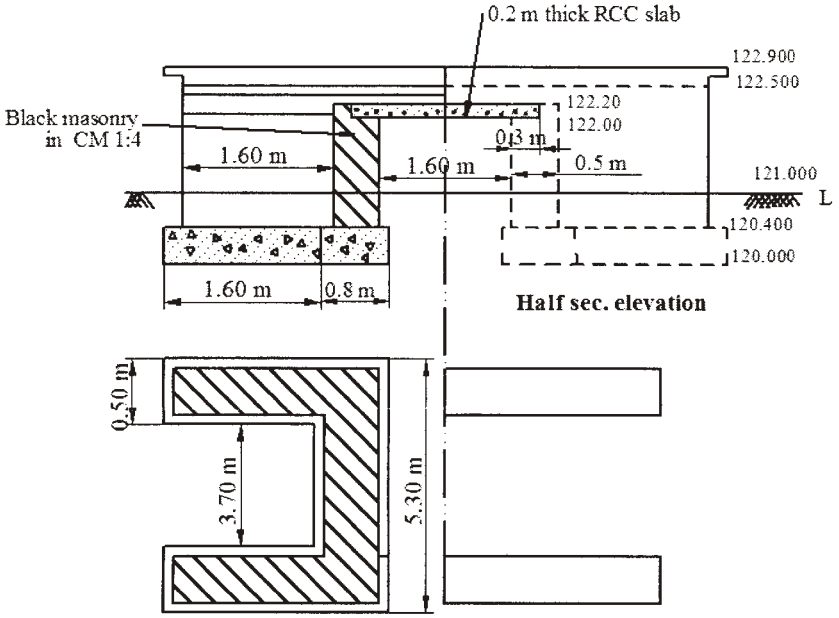
(b) VRCC for column footings and columns up to ground level



17. Calculate the quantities for the following item of work for a slab culvert shown in the figure below :

(a) Earthwork excavation for abutment and reuturns

(b) RCC (1:2:4) for deck slab.



18. The total cost of the newly constructed building is ₹ 15.00 lacks. Find the depreciation cost of building after 25 years by

(a) straight line method;

(b) constant percentage method if the scrap value of the building is ₹ 1,20,000. Assume the life of building as 80 years.

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