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C09–C–404

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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2017

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. Write the units of measurement of the following items of work :

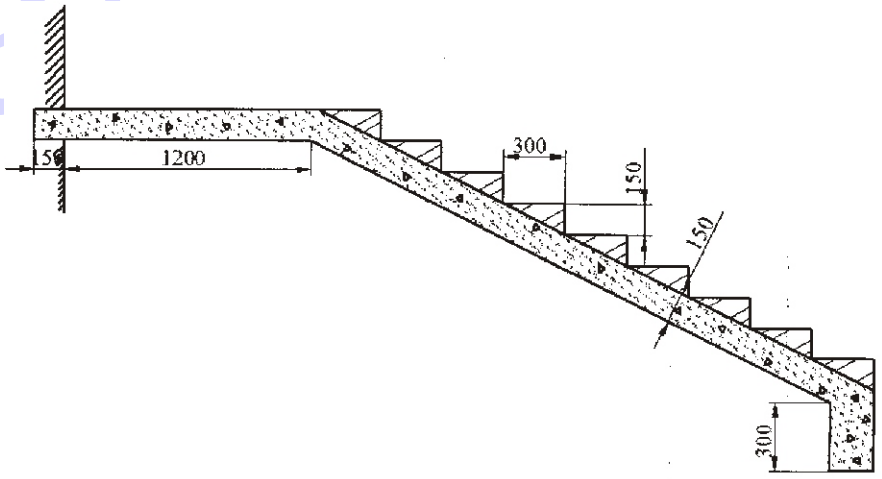
(a) Flooring

(b) Brick masonry

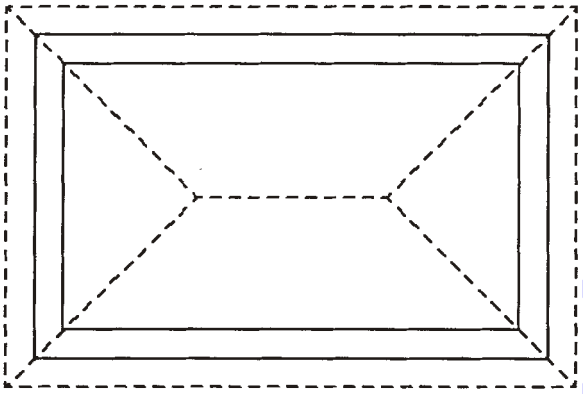
(c) AC sheet roofing

2. A room as 3·0 m × 6·0 m internal dimension with 300 mm wall thickness. Calculate *(a)* plinth area and *(b)* centre line length.

3. For the given staircase of width 1·2 m, calculate the total quantity of RCC :



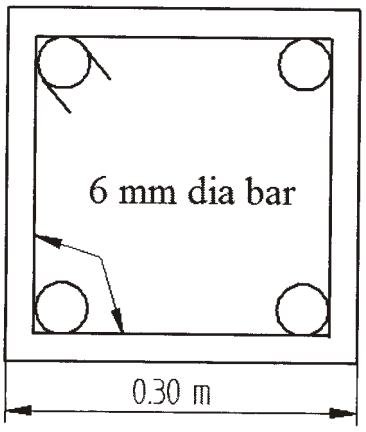
4. Calculate the length of common rafter and number of common rafters spaced at 0·5 m c/c for the hipped roof shown below :



Room size	=	6·0 m ×4·0 m
Wall thickness	=	300 mm
Slope of roof	=	$\frac{1}{3}$ of span
Eaves projection	=	500 mm

5. Calculate the quantity of cement required in bags for the item of work—CRS masonry in CM 1 : 6 for 20 m^3 of work, if 0·34 cu.m of cement mortar is required for 1·0 cu.m of CRS masonry.

6. Find the length of 6 mm diameter bar as shown in the figure below, if the size of column is 300 mm × 300 mm. Assume 40 mm clear cover for main reinforcement :



7. The details of a 120 m long canal *PQ* are given below :

(a) Depth of cutting at $P = 2{\cdot}8$ m

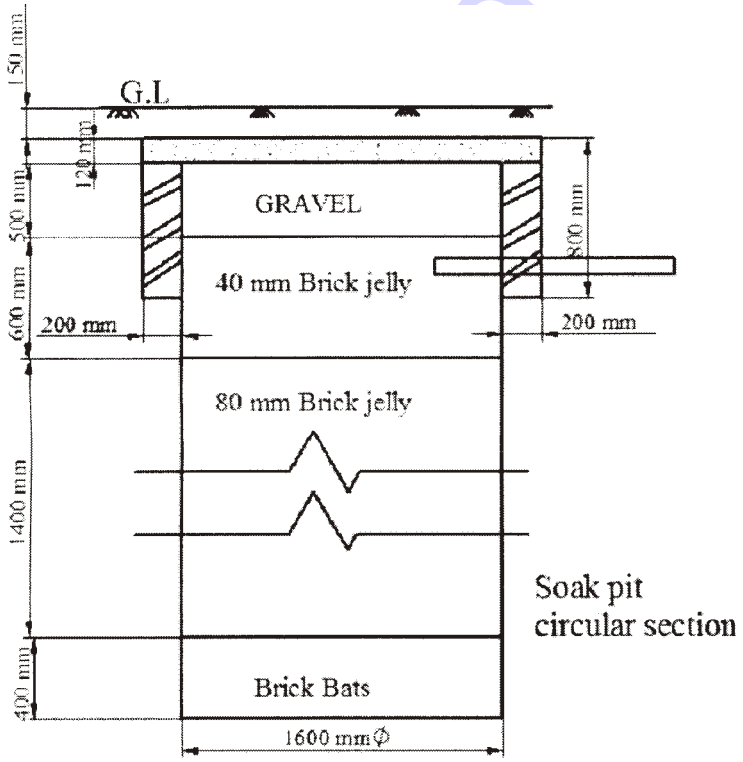
(b) Depth of cutting at $Q = 4{\cdot}0$ m

(c) Side slope of canal = 2 : 1

(d) Width of canal at bottom = 6 m

Calculate the volume of the earthwork by mid ordinate method.

8. From the accompanying figure of a circular soak pit, calculate the quantity of *(a)* loose packing of brick jelly 40 mm size and *(b)* RCC 1 : 2 : 4 roof over soak pit :



9. Write a short note on depreciation.

10. State any four types of outgoings to be considered during fixation of rent.

PART—B

10×5=50

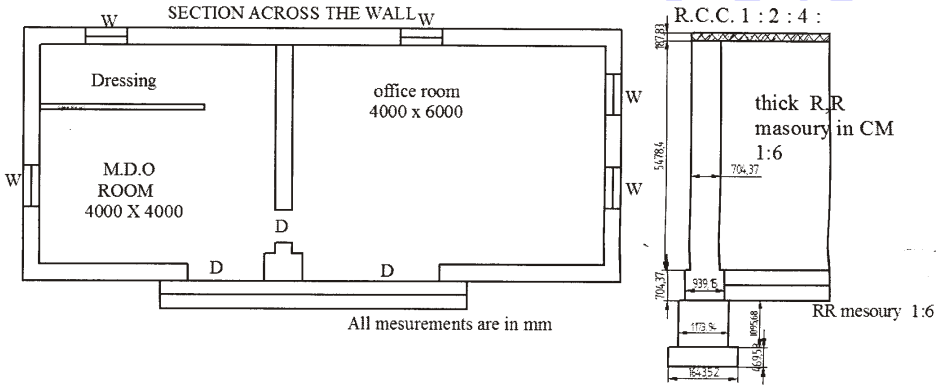
Instructions : (1) Answer *any* **five** questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Calculate the quantities for the following items of work for the building shown in the figure :

(a) Earthwork excavation for foundation

(b) RR masonry in CM 1 : 6 in basement and footings

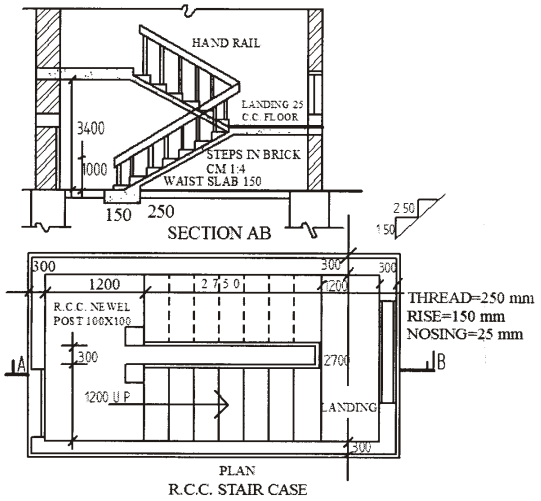
(c) CC 1 : 5 : 10 for flooring bed, 100 mm thick



12. For an RCC staircase shown in the figure, calculate the following quantities :

(a) RCC (1 : 2 : 4) for base beam, waist slab, top and intermediate landings

(b) Brickwork in CM (1 : 4) for steps



13. Calculate the cost of the following items of work using the lead statement given below :

(a) CC for foundations (1 : 5 : 10) using 40 mm HBG metal unit $1\,m^3$

$0{\cdot}92\ m^3$	40 mm HBG metal
—— cu.m	Sand
—— cu.m	Cement
0·2 Nos.	Mason
3·2 Nos.	Mazdoor
LS	Sundries

(b) First class brickwork in CM (1 : 8) unit 1 cu.m

500 Nos.	First class bricks
0·38 cu.m	CM (1 : 8)
1·40 Nos.	Brick layers
2·80 Nos.	Mazdoor
LS	Sundries

Labour charges :

(i) Mason/Brick layer ₹ 70·00/day

(ii) Mazdoor ₹ 40·00/day

(iii) Mixing charges of cement mortar ₹10·00/cu.m

Lead statement :

Sl.No.	*Materials*	*Rate at sources* (in ₹)	*Leads* (in km)	*Conveyance charges*
1.	40 mm HBG metal	250·00/cu.m	12 km MT + 10 km CT	₹ 6·00/km/cu.m
2.	Sand	75·00/cu.m	6 km MT + 5 km ST	₹ 4·00/km/cu.m
3.	Bricks	900/1000 nos.	6 km MT	₹ 5·00/km/1000 nos.
4.	Cement	2500 per ton	at site	

14. 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 :

CC (1 : 4 : 8) using 40 mm HBG metal—1 cu.m.

0·92 m^3	HBG metal
0·46 m^3	Sand
0·115 m^3	Cement
0·2 Nos.	Mason
3·2 Nos.	Mazdoors
LS	Sundries

RR masonry in CM (1 : 6)—1 cu.m

1·1 m^3	Rough stone
0·34 m^3	CM 1 : 6
1·8 Nos.	Mason
2·8 Nos.	Mazdoor
LS	Sundries

Lead statement of materials :

Sl.No.	*Materials*	*Rate at sources* (in ₹)	*Leads* (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 :

(i) Mason first class ₹ 223·00 per day

(ii) Mason second class ₹ 217·00 per day

(iii) Mazdoor ₹ 212·50 per day

(iv) Hand mixing charges of cement mortar per m^3 ₹34·00

15. The contour areas of a reservoir are given below. Calculate the dead and effective capacity of the reservoir :

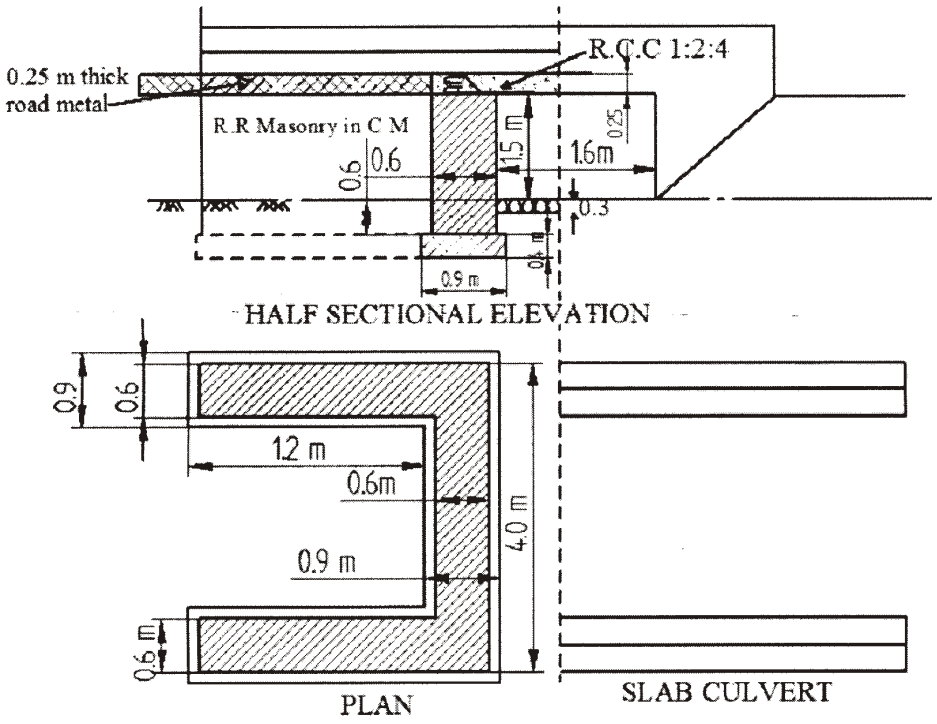
Levels (in m)	*Areas* (in sq.m)	
10·0	10500	bed level
11·0	13200	
12·0	20600	sill level
13·0	35000	
14·0	40200	
15·0	60700	
16·0	72400	
17·0	90300	FTL
18·0	99300	MWL

16. Prepare the detailed estimate for the following items of work for a slab culvert shown in figure :

(a) Earthwork excavation for foundation for abutments and returns

(b) CC (1 : 4 : 8) for abutment and returns

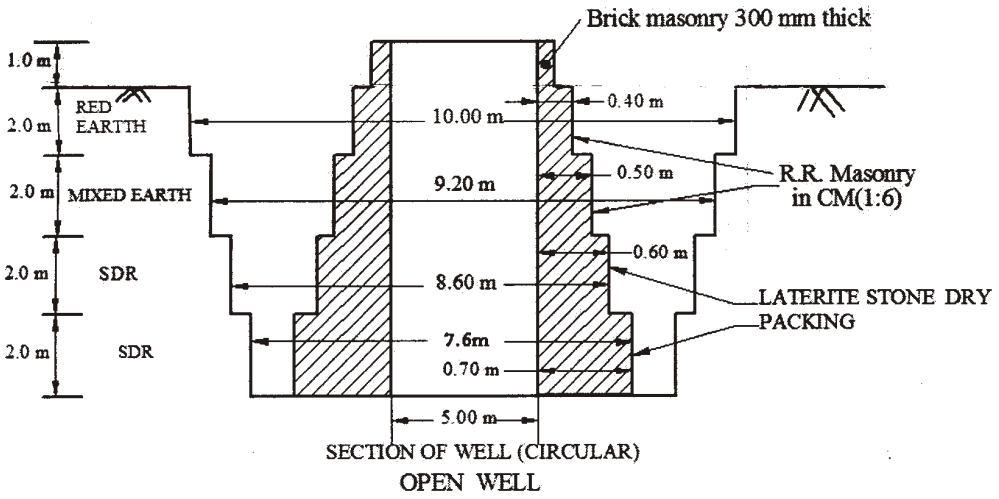
(c) RCC (1 : 2 : 4) for deck slab



17. Prepare the detailed estimate for the following items of work for an open well shown in the figure :

(a) Earthwork excavation in different types of soils

(b) RR masonry in CM 1 : 6



18. Residential building constructed 12 years ago is situated on a plot whose total area is 400 m^2. The plinth area of the building is 240 m^2. The present cost of construction of the building is ₹ 1,30,000 and the cost of the land is ₹ 180/m^2. The rate of depreciation for the value of the building is 1%. Calculate the total value of the property.

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