6426

BOARD DIPLOMA EXAMINATION, (C–16)
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) Any missing data may be assumed suitably.

1. Write the units for the following :
   (a) Plastering
   (b) RCC
   (c) Sand Filling

2. List various approximate methods and state their purpose.

3. The internal dimensions of a room are 6·25 m × 4·25 m. Find the quantity of sand filling in 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 accompanying sketch. Calculate the following :
   (a) Length of ridge piece
   (b) Length of common rafters
   (c) No. of common rafters

Slope of roof — 1/3 span

4000 × 3000

300

450
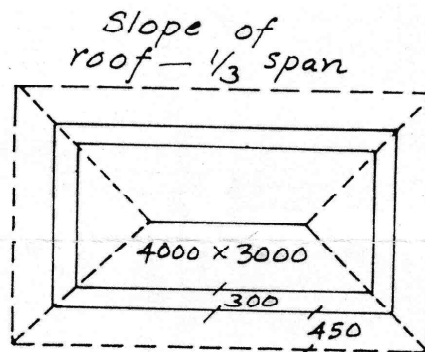
**5.** Calculate the quantity of cement required in bags for the following items of work :

(a) CRS Masonry in CM (1 : 6) using granite stone for 15 cum of work if 0·32 cum CM is required for 1 cum Masonry.

(b) Plastering with CM (1 : 4), 12 mm thick for 100 sqm of work if 0·15 cum of CM is required for 10 sqm of plastering.

6. Calculate the weight of steel bars as shown in figure for 12 mm dia at 3·89 N/m and crank depth is 300 mm.

3.65 m
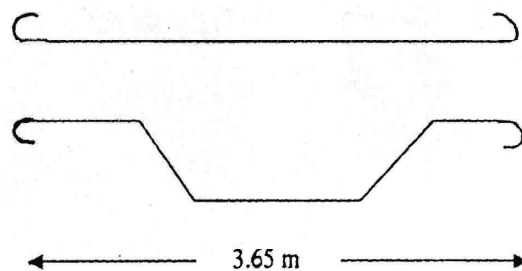
7. Find the volume of earthwork in road embankment of length 100 m top width is 7·0 m, depth 3·5 m and side slopes 2 : 1.

8. The cross-section of a circular dispersion trench 1·5 m dia. is shown in figure. Prepare detailed estimate for (a) brick bats and (b) RC cover.
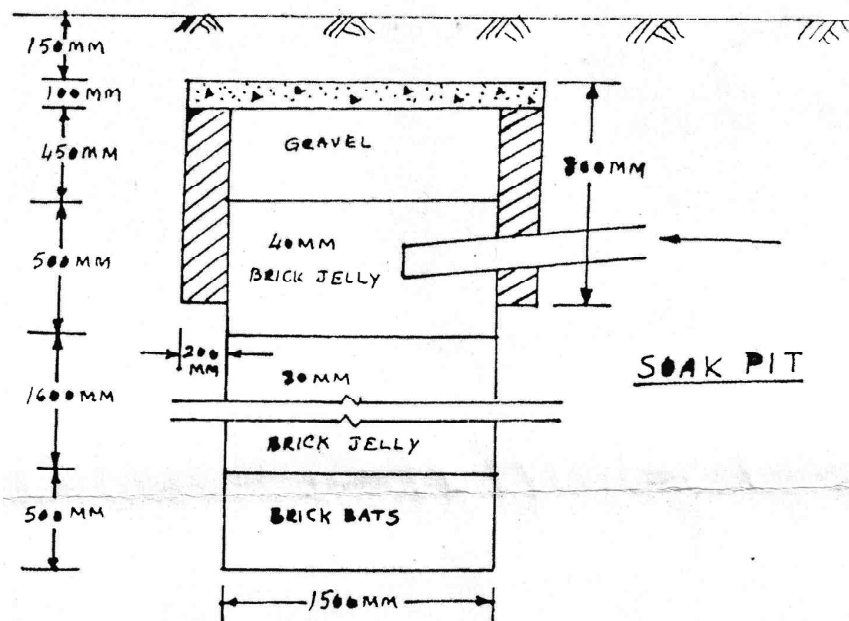
9. The cost of a building including cost of land is ₹ 1,00,000 the owner expects 10% return. If the expenditure on all outgoings including sinking fund is Rs 5,000. Find the grow rent of property per month.

10. Explain the terms *(a)* depreciation, *(b)* sinking fund.
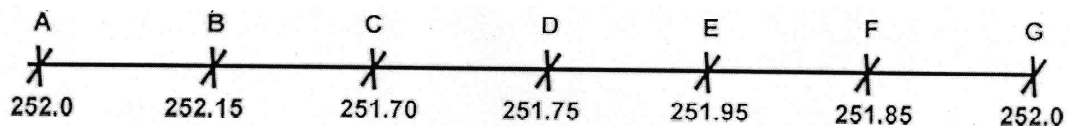
<div align="center">PART—B</div> 10×5=50

Instructions : (1) Answer *any* **five** questions.
         (2) Each question carries **ten** marks.
         (3) Any missing data may be assumed suitably.

11. The ground levels along the ridge of proposed canal area as shown below. The bed of the canal is 4·0 m wide and sloped at 1 in 100 in longitudinal direction. The side slopes are 1½ : 1

A	B	C	D	E	F	G
252.0	252.15	251.70	251.75	251.95	251.85	252.0

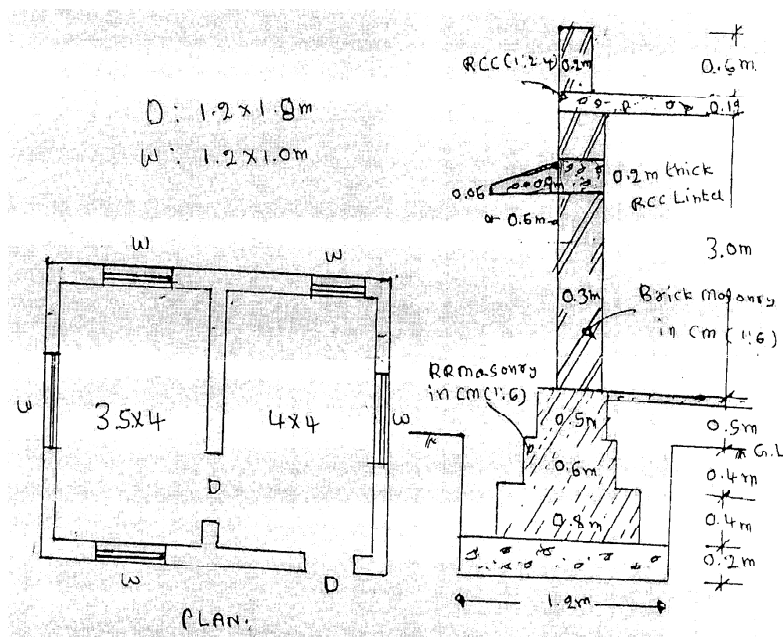Determine the volume of the earthwork in cutting by

(a) Trapezoidal formula

(b) Prismoidal formula

12. Prepare the detailed estimate for the following items of work for the given building :

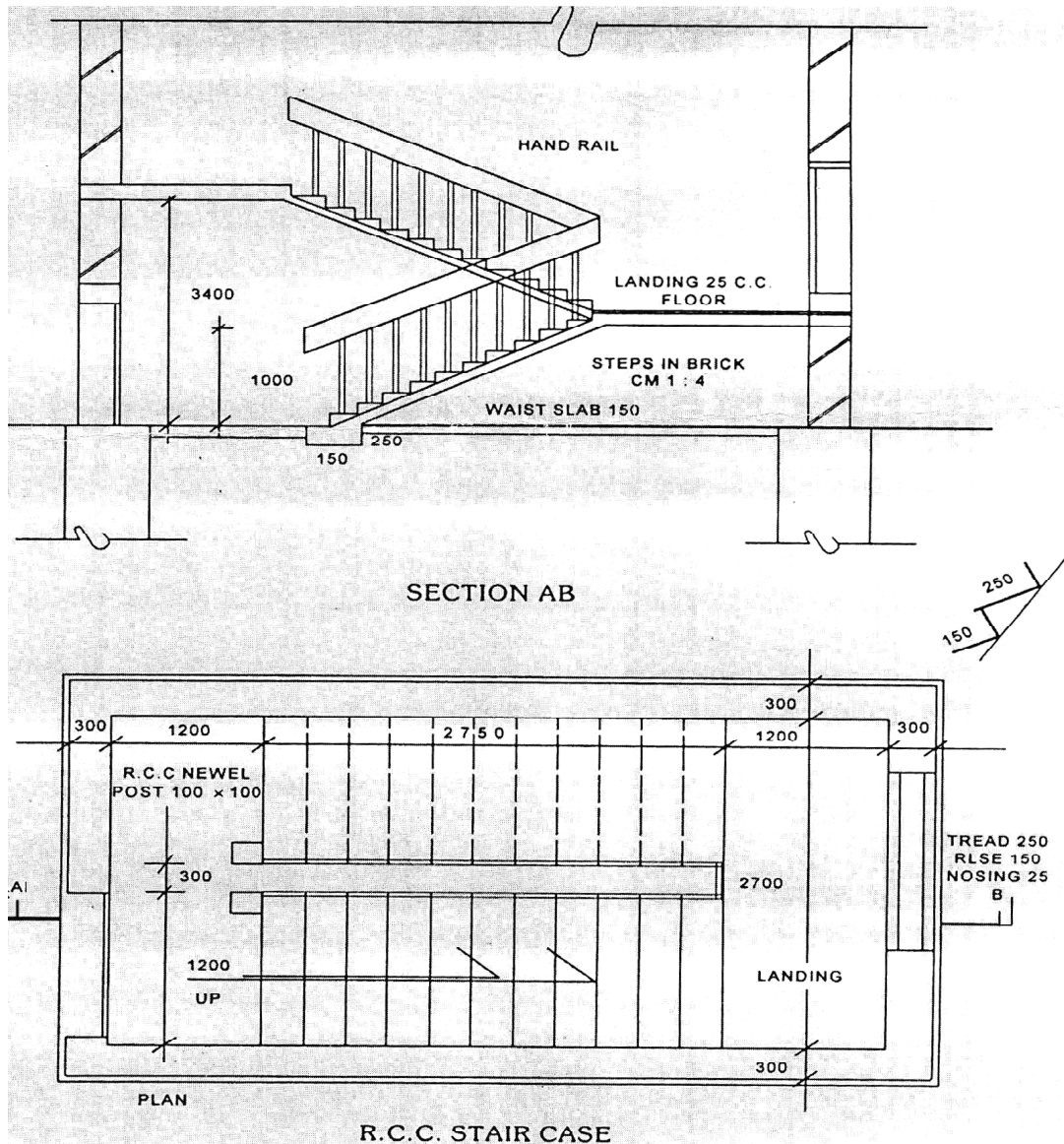*(a)* Plastering in CM (1 : 6) with deductions

(b) RCC for roof slab and lintels

PLAN.

/6426   3   [*Contd....*

13. For an RCC staircase shown in figure below, calculate the following contents :

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

(b) Brick work in CM (1 : 4) for steps

SECTION AB

PLAN

R.C.C. STAIR CASE

14. (a) What is the lead statement? Explain briefly method of finding unit rate of items.

(b) Prepare data sheet and calculate the cost of brickwork in CM (1 : 6) using country bricks—1 cum

Cost of materials at site
- *(i)* Sand   ₹ 750 per cum
- *(ii)* Brick   ₹ 5,300 per 1000 Nos.
- *(iii)* Cement   ₹ 6,200/MT

Materials and required unit—1 cum

600 Nos.	Bricks
0·38 cum	CM (1 : 6)
1·4 Nos.	Masons
2·8 Nos.	Mazdoors
LS	Sundries

Labour charges :

Mason	₹ 420 per day
Mazdoor	₹ 350 per day
Mixing charges	₹ 40 per cum

15. Prepare a lead statement, sheets and calculate the rates for the following items of work

(a) CC 1 : 4 : 8 using 40 mm HBG metal

(b) II class brick masonry in CM 1 : 6

CC 1 : 4 : 8 Unit-1 m³   **Brick masonry in CM 1 : 6 Unit—1m³**

0·92 m³	— HBG metal	600 Nos.	— Bricks (II class)
0·46 m³	— Sand	0·32 m³	— CM 1 : 60
_ _ _ _	— Cement	1·40 Nos.	— Mason
0·20 Nos.	— Mason	2·8 Nos.	— Mazdoor
3·20 Nos.	— Mazdoor	LS	— Sundries
LS	— Sundries		

Sl. No.	Materials	Rate	Per	Lead	Conveyance Charges per m³
1.	40 mm HBG Metal	920·0	m³	15 km	₹ 6·00 km
2.	Sand	775·0	m³	10 km	₹ 5·00 km
3.	Cement	6000·0	10 kN		(Local)
4.	Rough Stone	370·0	m³	6 km	₹ 5·00 km
5.	Bricks	5500·0	1000 Nos.		(Local)

Labour charges :

Mason	₹ 480·0 per day
Mazdoor	₹ 340·0 per day
Mixing charges	₹ 45·0 m^3

16. For an open well shown in the sketch, calculate—
   (a) quantity of earth work excavation;
   (b) quantity of brickwork above GL.
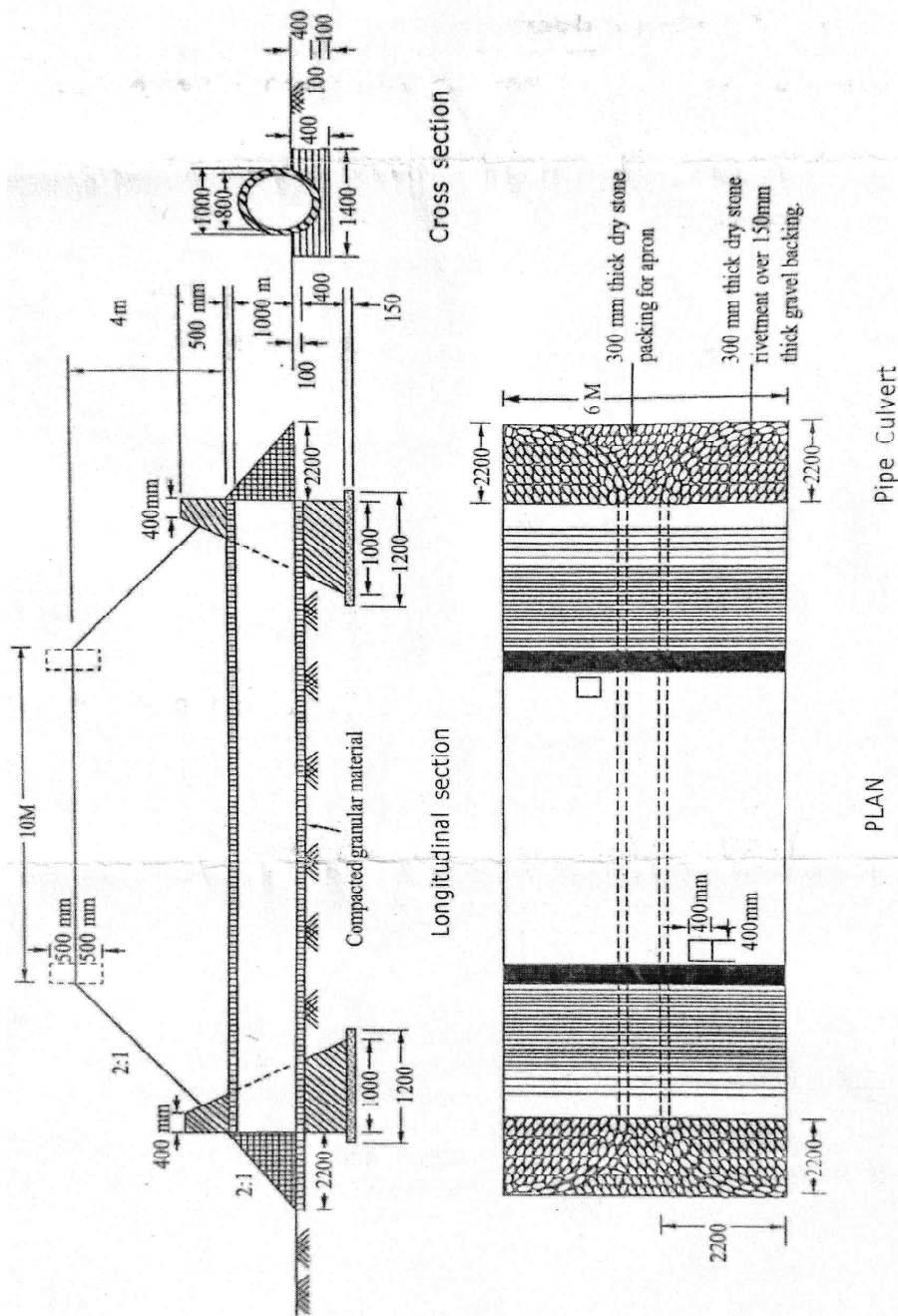

OPEN CIRCULAR WELL
SKETCH NO 4
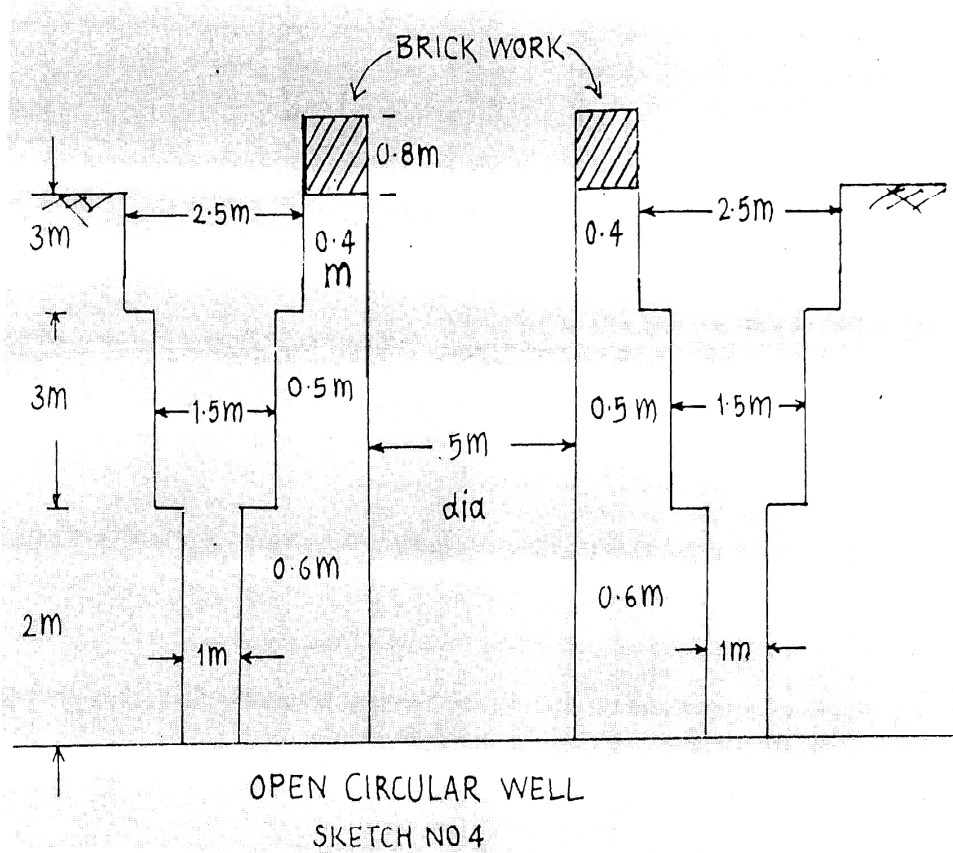
17. A building has an estimated life period of 70 years and the rent from the building is ₹ 720 per month. Calculate the capitalized value of the property with the given data :

(a)	Tax and insurance charges	=	30%
(b)	Management charges	=	2%
(c)	Repairs and miscellaneous	=	3%
(d)	Replacement value of the building	=	₹ 1,80,000
(e)	Sinking fund to be provided at interest	=	4%
(f)	Provide net yield	=	6%

6   [*Contd....*

18. Prepare the detailed estimate of following items of work from figure of pipe culvert :

(a) Earth work in excavation for foundation under head walls

(b) CC 1 : 4 : 8 under pipe

(c) Brick masonry in CM 1 : 6 for head walls

Cross section

Longitudinal section

Compacted granular material

300 mm thick dry stone packing for apron

300 mm thick dry stone rivetment over 150mm thick gravel backing.

PLAN

Pipe Culvert

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