



c09-c-404

3425

BOARD DIPLOMA EXAMINATION, (C-09)
MARCH/APRIL—2014
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 :

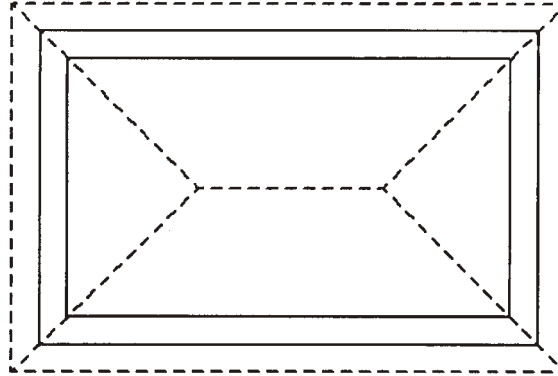
- (a) Plastering
(b) Steel reinforcement in RCC
(c) Filling basement with sand

2. Write a short note on plinth area method for approximate estimate.

3. A room has 6.0 m × 3.5 m internal dimensions with 300 mm wall thickness. The basement has a cross-section of 400 mm width and 600 mm height. Calculate—

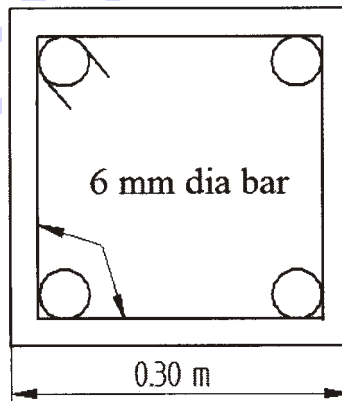
- (a) plinth area;
(b) brickwork in CM (1:8) in basement.

- * 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

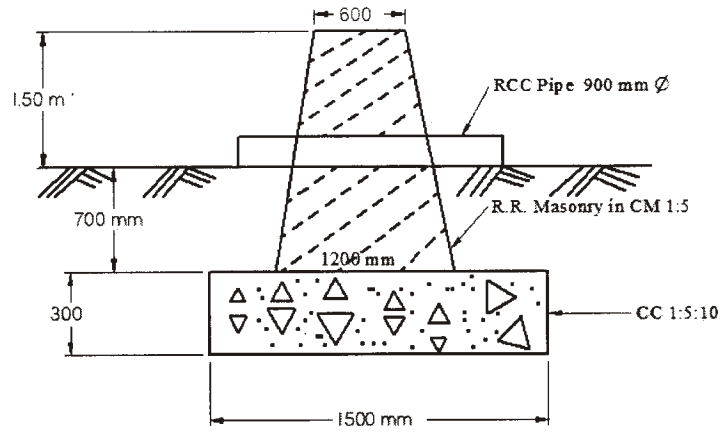
5. Explain briefly the analysis of rates and standard data book.
6. Find the length of 6 mm diameter bar as shown in the figure, if the size of column is 300 mm × 300 mm. Assume 40 mm clear cover for main reinforcement :



- * 7. Define the terms lead and lift.

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8. The cross-section of head wall for a pipe culvert is given below. Calculate the quantity of RR masonry in CM 1:5, if the length of the head wall is 7.50 m, and without deductions.

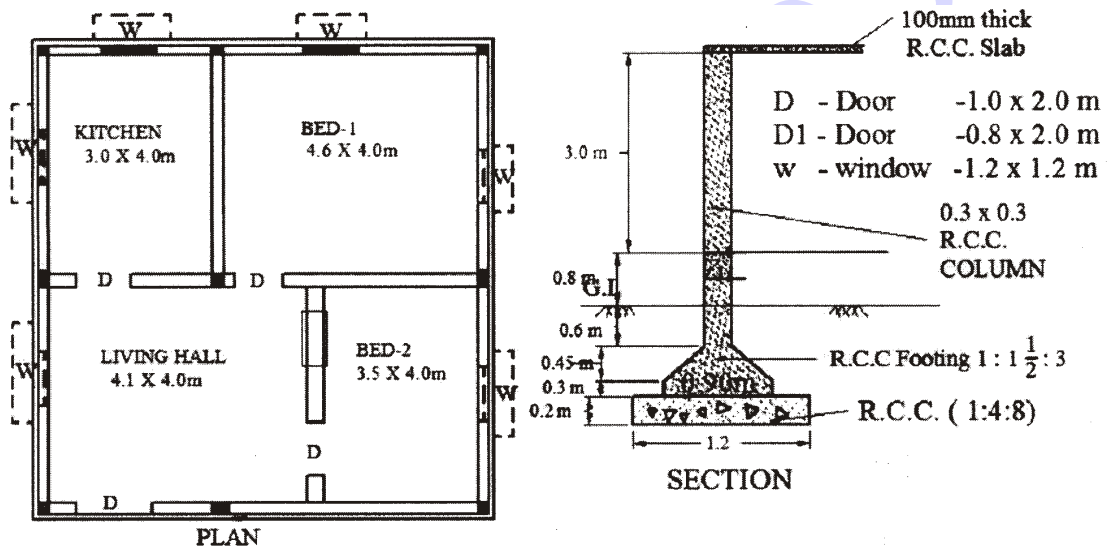


9. Write a short note on scrap value.
10. State any four types of outgoing to be considered during fixation of rent.

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- 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.

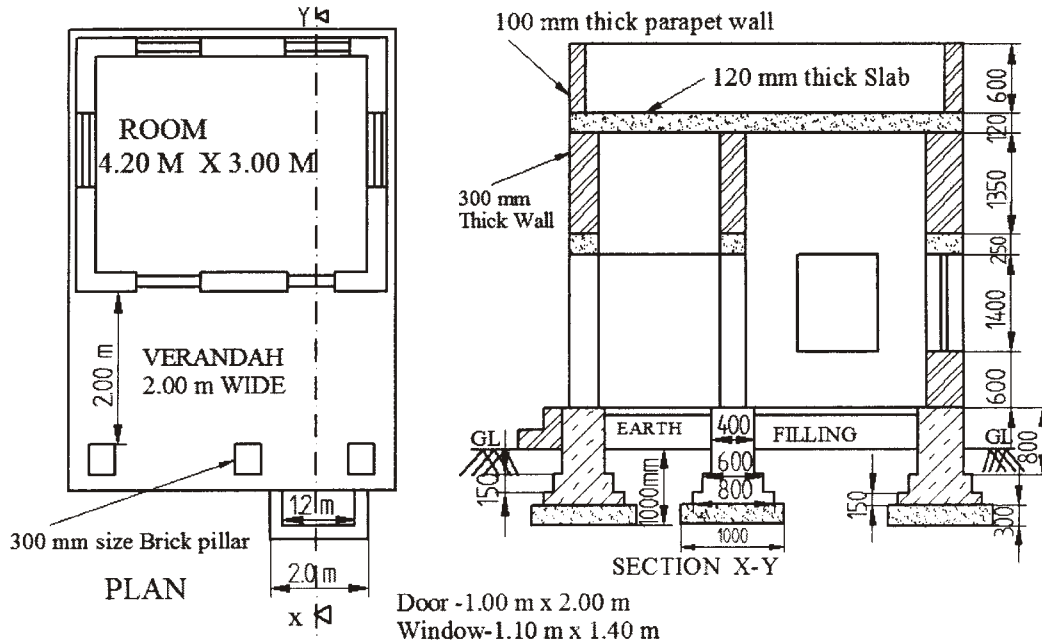
11. Prepare the detailed estimate for the following items of work for the building as shown in the figure :



(a) RCC 1:1½:3 in columns up to GL only including footings

(b) RCC 1:2:4 in slab

- * 12. Prepare the detailed estimate for the following items of work for the building as shown in the figure :



- (a) Earthwork excavation for foundation in hard gravelly soils
(b) RR masonry in CM 1:6 for footing and basement

13. Prepare the data sheet and calculate the cost of the items given below, using the lead statement of materials :

- (a) Cement-concrete 1:3:6 using 40 mm HBG metal, unit—1 cu m
- | | |
|---------------------|------------------|
| 0.92 m ² | 40 mm HBG metal |
| — | Sand |
| — | Cement |
| 0.06 No. | Masons 1st class |
| 0.14 No. | Masons 2nd class |
| 1.80 Nos. | Men Mazdoors |
| 1.40 Nos. | Women Mazdoors |
| LS | Sundries |

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(b) RR Masonry in CM (1:6)—Unit 1 cu m.

| | |
|------------|------------------|
| 1.10 cu m. | Rough stone |
| 0.34 cu m. | CM. (1:6) |
| 0.54 No. | Masons 1st class |
| 1.26 Nos. | Masons 2nd class |
| 1.40 Nos. | Men Mazdoors |
| 1.40 Nos. | Women Mazdoors |
| LS | Sundries |

Lead statement of materials :

| Sl. No. | Materials | Rate at source ₹ | Lead | Conveyance charges per km in ₹ |
|---------|-----------------|------------------------|-------|--------------------------------|
| 1 | 40 mm HBG metal | 300 per m ³ | 10 km | 15/m ³ |
| 2 | Sand | 75 per m ³ | 20 km | 10/m ³ |
| 3 | Cement | 1800 per tonne | — | At site |
| 4 | Rough stone | 250 per m ³ | 8 km | 12/m ³ |

Labour :

| | |
|----------------------|----------------|
| Masons 1st class | ₹ 250 each/day |
| Masons 2nd class | ₹ 240 each/day |
| Men mazdoors | ₹ 230 each/day |
| Women mazdoors | ₹ 225 each/day |
| Mixing charges of CM | ₹ 40 per cum |

14. Prepare the data sheet and find the cost of the following items of works :

(a) Quantities for BM in CM 1:6 using country bricks—unit 1 m³

| | |
|----------|----------------|
| 600 Nos. | Country bricks |
| 0.38 cum | CM (1:6) |
| 1.4 Nos. | Bricklayer |
| 0.7 No. | Men Mazdoors |
| 2.1 Nos. | Women Mazdoors |
| LS | Sundries |

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(b) Quantities for CM 1:3 flush pointing unit 10 m²

| | |
|----------|---------------|
| 0.06 cum | CM (1:3) |
| 1.6 Nos. | Bricklayer |
| 0.5 No. | Men mazdoor |
| 1.1 Nos. | Women mazdoor |
| LS | Sundries |

Lead statement :

| Sl. No. | Materials | Rate at source ₹ | Leads in km | Conveyance charges per km |
|---------|-------------------------|--------------------------|-------------|---------------------------|
| 1 | 40 mm size broken stone | 380.0/m ³ | 12 km MT | 3.00/1 m ³ |
| 2 | Sand | 75.00/m ³ | 35 km MT | 3.00/1 m ³ |
| 3 | Country bricks | 1500.00 per 1000 Nos. | At site | |
| 4 | Cement | 2400.00/10 kN or 1 tonne | At site | |

Labour charges :

| | |
|-----------------------|-----------|
| Masons or bricklayers | ₹ 260/day |
| Men & women mazdoors | ₹ 180/day |
| Mixing charges | ₹ 30/cum |

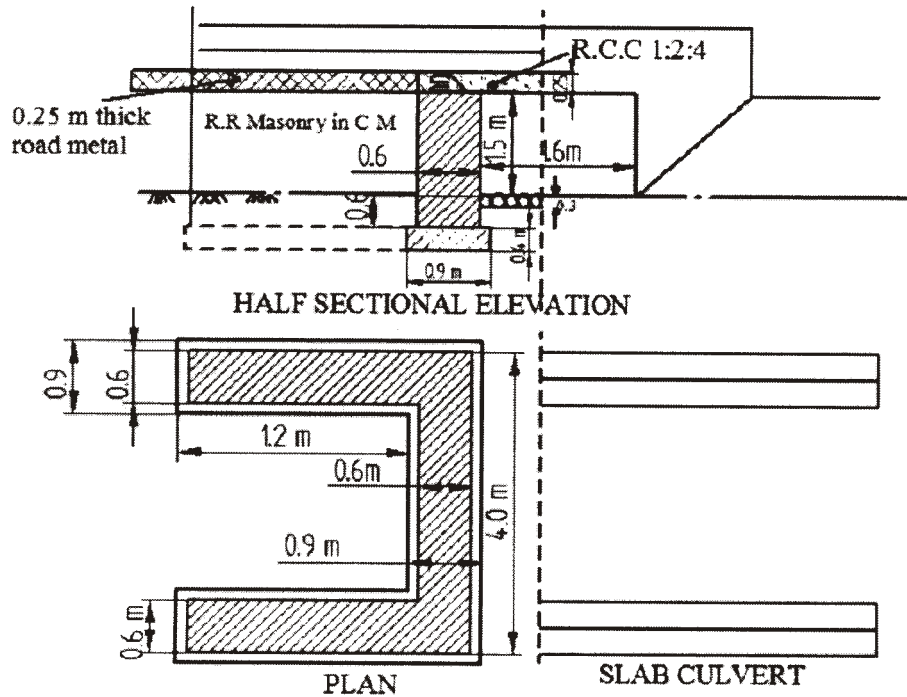
15. A road in embankment has the following data :

| | | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|-------|
| Change in m | 0 | 30 | 60 | 90 | 120 | 150 | 180 |
| RL of ground in m | 49.60 | 50.20 | 50.90 | 51.35 | 51.90 | 52.30 | 52.80 |

The formation level at zero chainage is 52.00 and having a rising gradient of 1 in 100. The top width is 12.0 m and side slopes 2 horizontal to 1 vertical. Assuming ground is level in transverse direction, calculate the quantity of earthwork.

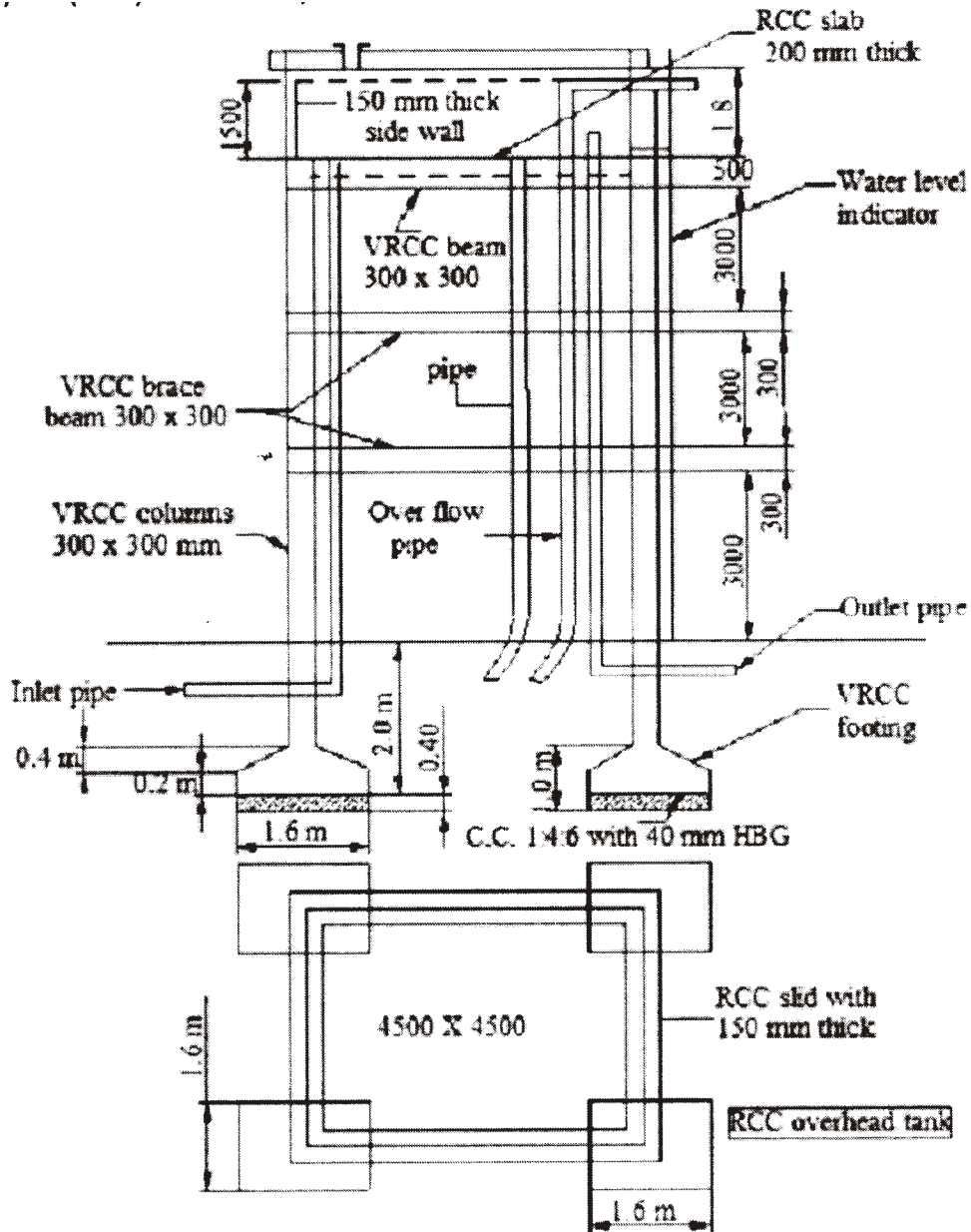
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- * 16. Calculate the quantities for the following items of work of an RCC slab culvert as shown in the figure :



- (a) Earthwork excavation for foundation for abutments and return walls
 (b) RR masonry in CM 1:3 for abutments and returns up to bottom of deck slab.

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



(a) Earthwork excavation for column foundation

(b) RCC (1:2:4) for cover slab, bottom slab and side walls

- * 18. A machine was purchased for ₹ 55,000 in 2005. The salvage value of the machine is ₹ 21,000 in 2010. Calculate the depreciation and book value for each year by constant percentage method.
