* 3425 *

C09–C–404

# 3425

## BOARD DIPLOMA EXAMINATION, (C–09)

## OCT/NOV—2017

## DCE—FOURTH SEMESTER EXAMINATION

QUANTITY SURVEYING

*Time* : 3 hours ] [ *Total Marks* : 80

**PART—A** 3×10=30

***Instructions*** : (1) Answer **all** questions.

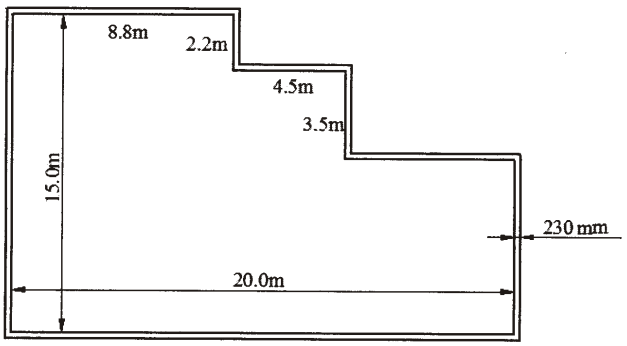
(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

**1.** List any four duties of quantity surveyor.

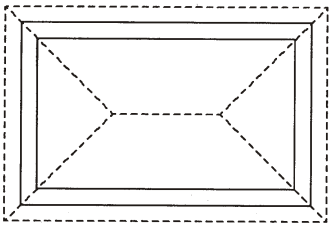
**2.** Prepare an approximate estimate of a hospital building for 50 beds. The cost of the construction altogether for each bed is ₹ 60,000. Determine the total cost of the hospital building.

**3.** The plan of compound wall is shown in the figure below. Calculate its centre line length :



**4.** Calculate the length of common rafter and number of common rafters spaces at 0·5 m c/c of 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

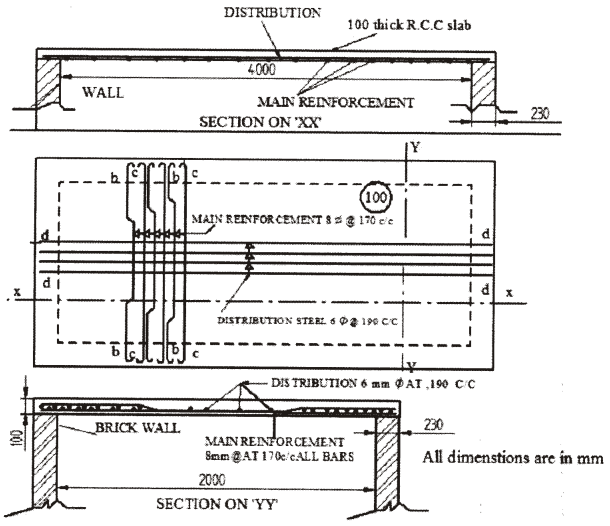


**5.** Find the cost of materials at site for the following :

| *Sl. No.* | *Materials* | *Rate at source* (in ₹) | *Leads* (in km) | *Conveyance charges* (in ₹) |
|---|---|---|---|---|
| 1 | 20 mm size HBG metal | 450·00/$m^3$ | 30 | 9·0 per cum/km |
| 2 | Cement | 3400/1 tonne | 8 | 80/1 tonne/km |

**6.** From the following figure calculate the quantity of distribution steel 6 mm @ 190 mm c/c required for bottom mat :

Top cover (clear) = 25 mm
Side clear cover = 25 mm
Bottom cover (clear) = 15 mm
6 mm dia bars 0·22 kg/m

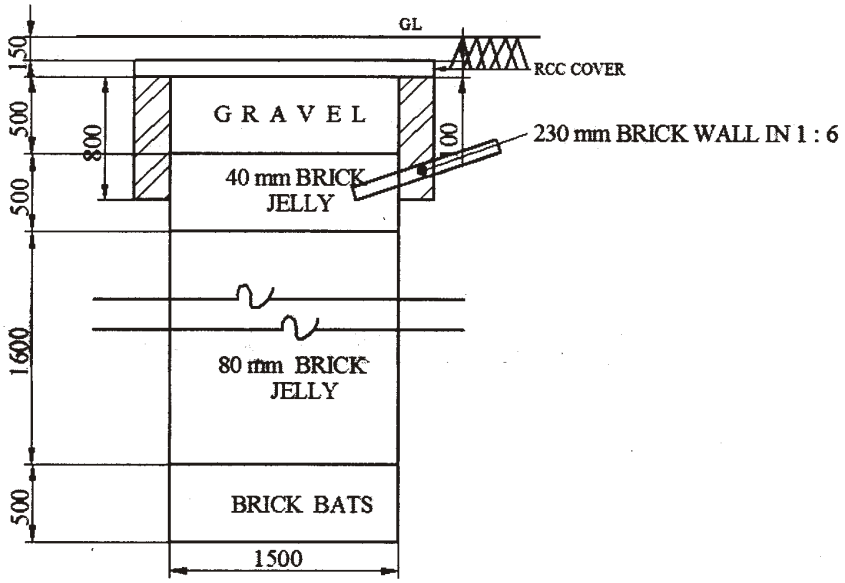


**7.** Find the volume of the earthwork in an embankment of length 100·0 m, top width 7·0 m and depth 3·5 m. The side slopes are 1(1/2) : 1.

**8.** The cross-section of a circular dispersion trench 1·5 m dia is shown in the figure below. Calculate the quantity of—

*(a)* brick bats;

*(b)* RCC cover.




**9.** Write a short note on book value.

**10.** 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 ₹ 5,000. Find the gross rent of property per month.

## PART—B

10×5=50

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

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

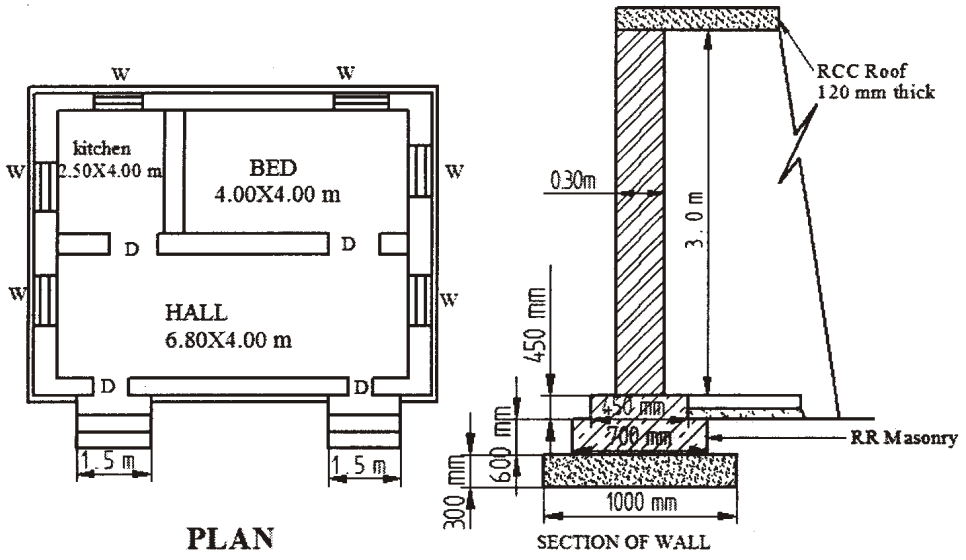
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

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

(1) CC (1 : 5 : 10) for foundation bed

(2) Brick masonry for super structure walls without deduction

(3) RCC 1 : 2 : 4 for roof slab




REFERNCE:

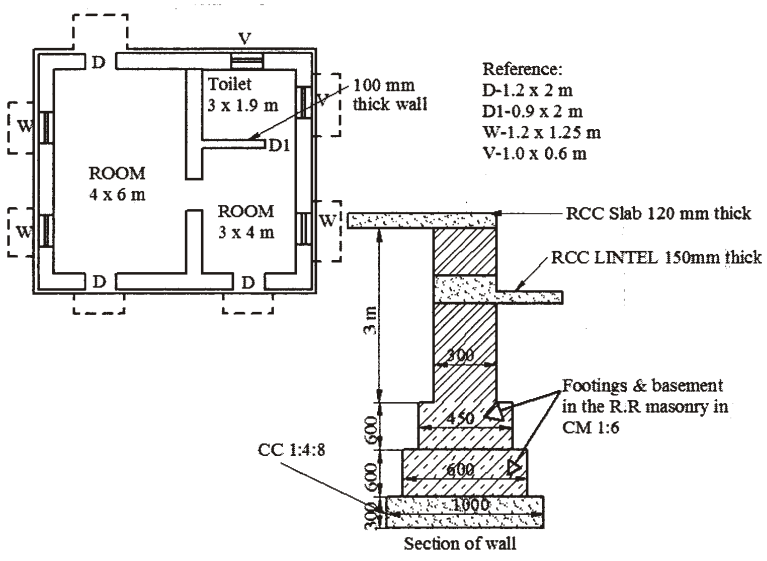
| | |
|---|---|
| DOOR | D 1000 X 2000 |
| WINDOW | W 1000 X 1250 |

**12.** From the following drawing, calculate the quantities for the following items of the work :

*(a)* Earthwork excavation for foundation

*(b)* Brick masonry in CM (1 : 6) for superstructure wall without deductions

*(c)* Plastering to ceiling with CM (1 : 3)




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

(1) Cement concrete 1 : 4 : 8 of foundation using 40 mm broken stone, unit—1 $m^3$

(2) Plastering with CM 1 : 4—12 mm, thick unit—10 $m^2$

*(a)* Quantities for CC 1 : 4 : 8 for 1 $m^3$

| | |
|---|---|
| 0·92 $m^3$ | 40 mm size broken stone |
| 0·46 cum | Sand |
| 0·115 $m^3$ | Cement |
| 0·2 Nos. | Mason |
| 1·80 Nos. | Man mazdoor |
| 1·40 Nos. | Women mazdoor |
| LS | Sundries |

*(b)* Quantities for plastering with CM (1 : 4)—12 mm, thick—10 $m^2$

| | |
|---|---|
| 0·15 cum | CM (1 : 4) |
| 1·1 Nos. | Brick layer |
| 0·5 Nos. | Man mazdoor |
| 1·1 Nos. | Women mazdoor |
| LS | Sundries |

Lead statement :

| *Sl. No.* | *Materials* | *Rate at source* (in ₹) | *Leads* (in km) | *Conveyance charges* (in ₹) |
|---|---|---|---|---|
| 1 | 40 mm size broken stone | 400·0 one 1 $m^3$ | 12 km MT | 3·00/1 $m^3$/km |
| 2 | Sand | 95·00 per 1 $m^3$ | 35 km MT | 3·00/1 $m^3$/km |
| 3 | Cement | 2400·00 per 10 kN or 1 tonne | At site | |

Labour charges :

| | |
|---|---|
| Mason or brick layer | ₹ 300/day |
| Men and women mazdoors | ₹ 180/day |
| Mixing charges | ₹ 27·50/cum |

**14.** 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 cum

| | |
|---|---|
| 0·92 $m^3$ | 40 mm HBG metal |
| — | Sand |
| — | Cement |
| 0·06 Nos. | Mason 1st class |
| 0·14 Nos. | Mason 2nd class |
| 1·80 Nos. | Men mazdoor |
| 1·40 Nos. | Women mazdoor |
| LS | Sundries |

*(b)* RR Masonry in CM (1 : 6) unit—1 cum

| | |
|---|---|
| 1·10 cum | Rough stone |
| 0·34 cum | CM (1 : 6) |
| 0·54 Nos. | Masons 1st class |
| 1·26 Nos. | Masons 2nd class |
| 1·40 Nos. | Man mazdoors |
| 1·40 Nos. | Women mazdoors |
| LS | Sundries |

Lead statement of materials :

| *Sl. No.* | *Materials* | *Rate at source* (in ₹) | *Leads* (in km) | *Conveyance charges* (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 :

*(a)* Mason 1st class ₹ 250/each/day

*(b)* Mason 2nd class ₹ 240/each/day

*(c)* Men mazdoors ₹ 230/each/day

*(d)* Women mazdoors ₹ 225/each/day

*(e)* Mixing charges of CM ₹ 40/cum

**15.** For an embankment 60 m long having uniform gradient with the height of bank 3·0 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 2 : 1. Estimate the quantity of earthwork by—

*(a)* prismoidal rule;

*(b)* mid sectional method;

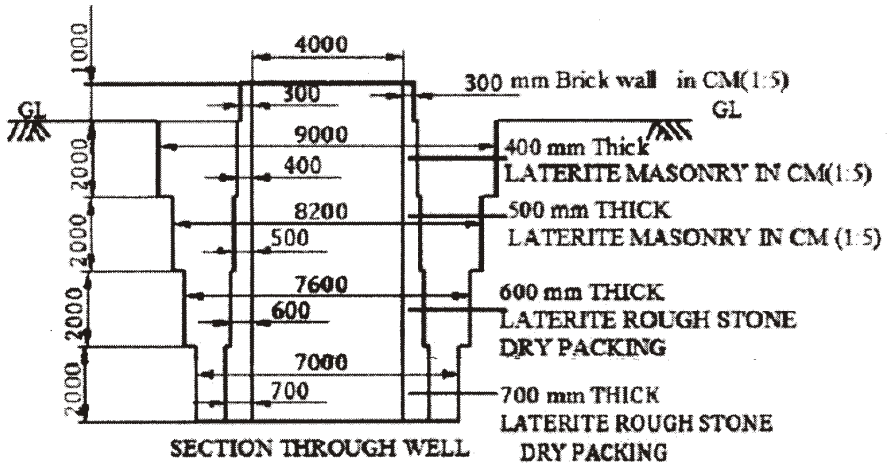
*(c)* mean sectional method.

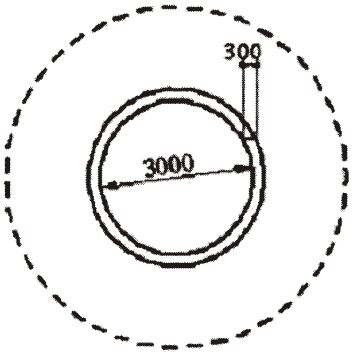
The longitudinal and transverse gradient of the ground is nil.

**16.** Calculate the quantities for the following items of work for an open well shown in the figure below :

*(a)* Refilling with excavated earth around the well staining

*(b)* Laterite rough stone dry packing for well staining.



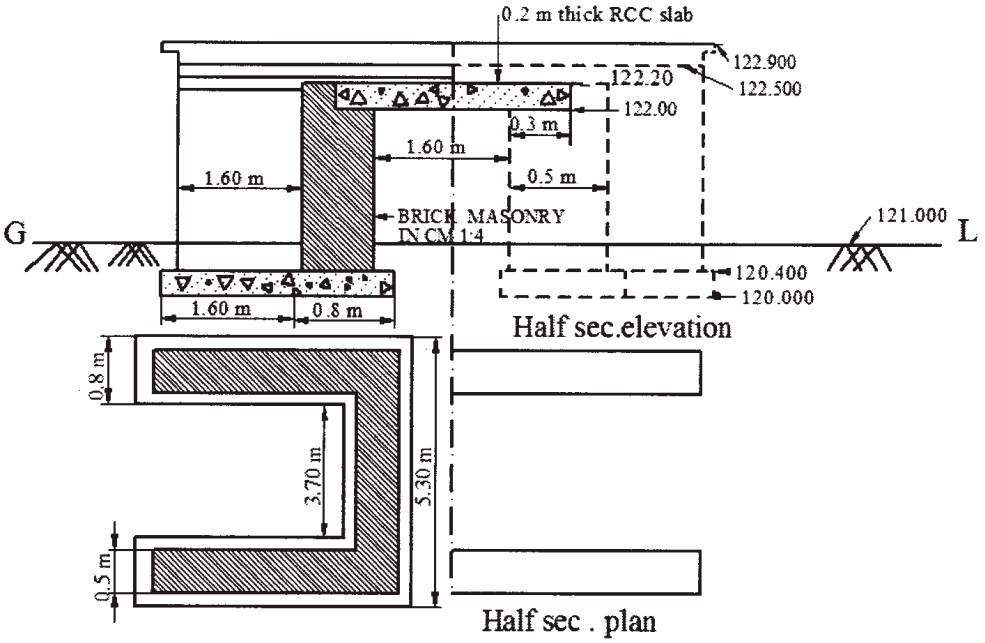

PLAN AT TOP
(MASONRY WELL)

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

*(a)* CC (1 : 4 : 8) for abutment and wing walls

*(b)* Brick masonry in CM (1 : 4) for abutment and wing walls up to bottom deck slab

*(c)* RCC for deck slab




**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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