3425

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

DCE - FOURTH SEMESTER EXAMINATION

QUANTITY SURVEYING

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

PART—A   4×5=20

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

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

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

1. Write the units of measurements for the following items of works :

   (a) Earth work excavation for road formation.

   (b) Roofing with AC sheets.

   (c) Windows.

2. State the different methods of taking out quantities.

3. Explain "Plinth area method" of approximate estimate.

4. A hospital building has to be constructed for 20 beds. The cost of construction all together for each bed is Rs 80,000. Determine the total cost of the hospital building.

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. Mention the approximate percentage of steel in RCC elements for :

(a) Lintels and beams

(b) Roof slab

7. Find the volume of the earthwork in an embankment of length 100·0 m, top width 8·0 m and depth 4·0 m. The side slopes are 2 : 1.

8. Prepare the detailed estimate for laying cement concrete pavement of 1 : 2 : 4 mix with 20 mm size HBG chips, 100 mm thick over the base course of CC 1 : 4 : 8 with 40 mm size HBG chips, 150 mm thick for a length of 500 m, if the width of the road is 3·75 m.

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 15×4=60

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

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

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

11. Prepare a preliminary estimate for the proposed construction of a Govt. building with a plinth area of 195·10 m² using the following data : 15

(a) Plinth area rate ` 950 per m².

(b) Cost of water supply @ 7·5 % of building cost.

(c) Cost of sanitary fittings and installation @ 5 % of building cost.

(d) Cost of electrification @ 6 % of building cost.

(e) Cost of Architectural features @ 0·5 % of building cost.

(f) Cost of roads and lawns @ 2 % of building cost.

12. Estimate the quantities of the following items of the building shown in Fig-1. (See **Annexure** page No. 4) :   15

   (a) Earthwork excavation for foundations.

   (b) RCC (1:2:4) for slab 120 mm thick.

13. Estimate the quantities of the following items of the building shown in Fig-1. (See **Annexure** page No. 4) :   15

   (a) RR masonry in CM (1 : 6) for foundations.

   (b) CC bed (1 : 5 : 10) using 40 mm HBG metal for foundations.

14. *(a)* Find the lead in equivalent distance on metalled road for the following items :   6

   (i) 20 mm HBG metal   :   100 km MR + 7 km CT.

   (ii) Sand   :   8 km MR + 4 km CT + 2 km ST.

   (iii) Bricks   :   8 km MR + 3 km CT.

   (b) Calculate the quantities of the following materials required for construction of 18 cu.m. of roof slab with RCC (1 : 2 : 4), if aggregate is 0·92 cu.m. in one cu.m. of RCC (1 : 2 : 4).   3+3+3=9

   (i) Cement in tons

   (ii) Sand

   (iii) Aggregates

15. Prepare the data sheet for painting with white cement paint— unit-1 m² :   15

3·7 kg	- White Cement	- ` 25.00 per kg.
0·18 Nos	- Mason I class	- ` 675 each per day.
1·40 Nos.	- Mason II class	- ` 525 each per day.
0·60 Nos.	- Man mazdoor	- ` 450 each per day.
1·10 Nos.	- Women mazdoor	- ` 375 each per day.
LS	- Sundries.	- Lumpsum.

16. Prepare the detailed estimate for the following items for a WBM road having length 800 m shown in the figure below : 5+5+5=15

Wearing Course:40 mm Size HBC Metal 100 mm Thick Compacted to 75 mm Thick   Base Coarse : 65mm Size HBC Metal 125 cm Thick Loose Compacted 100 mm Thick.

Granular shoulders 100mm thick loose compacted to 75mm thick on either side of metaling

Granular Sub Base 225mm Thick loose compacted to 150mm thick
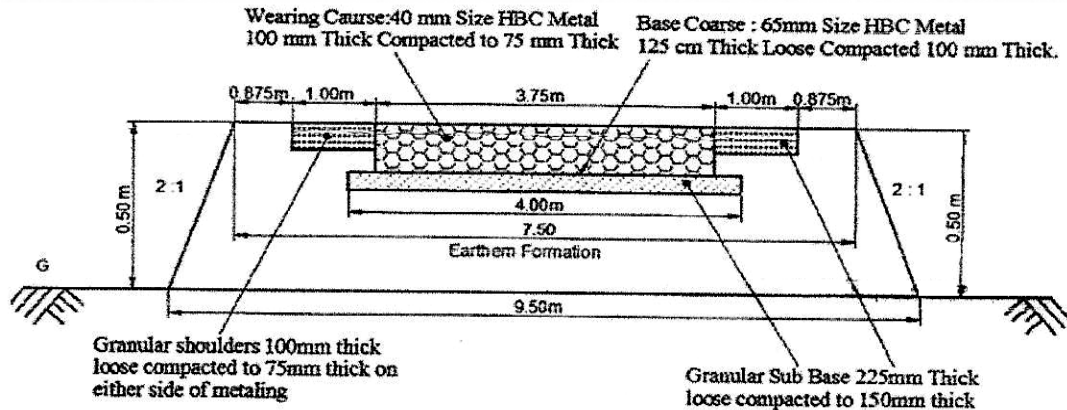
(a) Collection and supply of 65 mm HBG metal for base course

(b) Collection and supply of gravel for sub-base course

(c) Spreading of 40 mm HBG metal for wearing course

17. The contour levels and contour areas of a depression are given below. The bed level of the depression is at 78 m contour and is to be filled up to 84 m. Calculate the earthwork quantity by using : 15
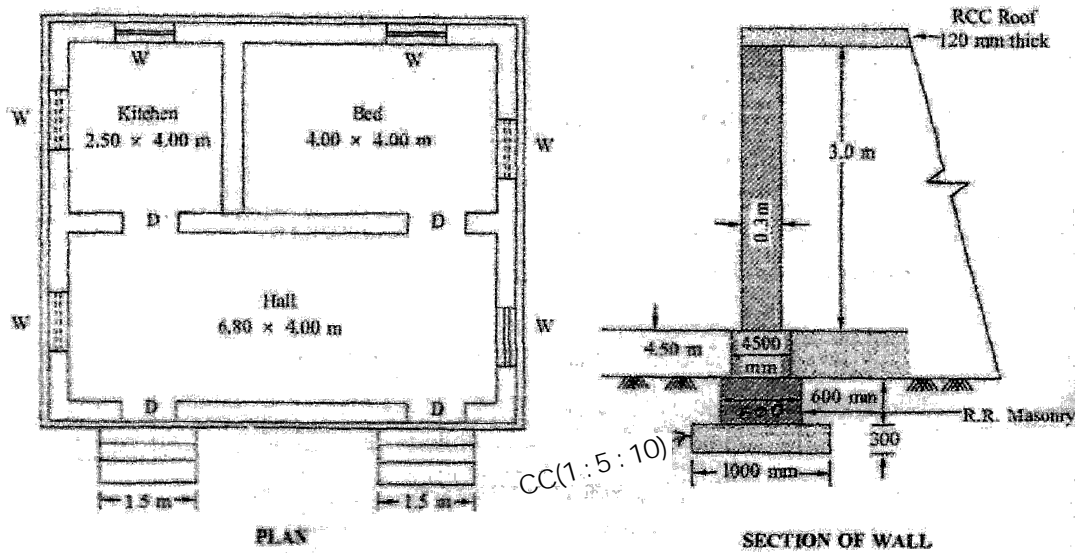
(a) Trapezoidal formula

(b) Prismoidal formula.

Contour level (in m)	78	79	80	81	82	83	84
Area of contour (in sq. m)	99	103	110	116	120	132	137

18. What do you understand by the word specifications of any item of work? 15

Reference :
D – Door 1000 × 2000
W – Window 1000 × 1250

Fig. 1 – **Building**

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