

4426

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE-2019

DCE - FOURTH SEMESTER EXAMINATION

QUANTITY SURVEYING – I

Time: 3 Hours

Max.Marks:80

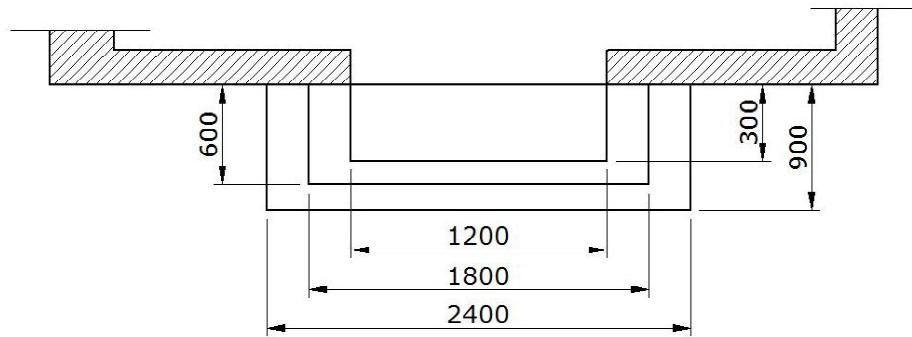
PART-A**10x3= 30M**

Instructions: 1) Answer **all** the questions. Each question carries **three** marks.
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

- 1) What is quantity surveying? State two objectives of quantity surveying.
- 2) Write the units of measurement of the following items of work.

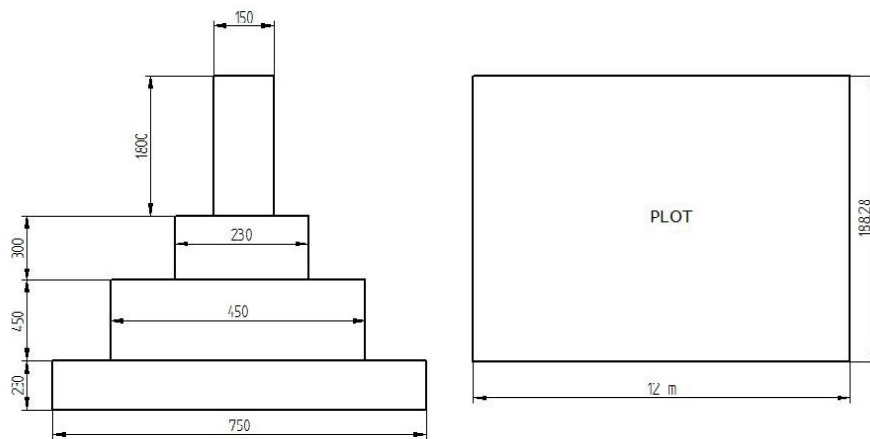
(a) Earth work excavation (b) R.C.C for footings (c) Masonry Work.
- 3) Explain the terms lead and lift for the formation of roads and give the values of initial lead and initial lift.
- 4) Find the volume of earth work in road embankment of length 100m top width is 7.0m, depth 3.5m and side slopes 2:1.
- 5) Explain "Trapezoidal rule" and "Prismoidal rule" with usual notations.
- 6) Neatly tabulate formats of detailed estimate and abstract estimate separately.

- 7) Calculate the Quantity of the Brick Masonry in C.M.(1:8) for steps in plan shown below Rise of step is 150mm.



ALL DIMENSIONS ARE IN MM

- 8) The internal dimensions of a room are 6.25 x 4.25 m. Find the quantity of sand filling in basement. The height and thickness of basement are 750 mm and 450mm respectively. The wall thickness of room is 230mm.
- 9) Calculate the quantity of earth work excavation for foundation. For the following Fig. shows the plan and section of a part of a compound wall.



ALL DIMENSIONS ON SECTION ARE IN MM REMAINING ARE IN METRES

All dimensions on section are in mm remaining are in meters.

- 10) Calculate the quantity of cement concrete(1: 1 1/2: 3) required for RCC lintels over doors and windows of a residential building. There are 6 doors of size 1.1 mx2.10 m and 8 Windows of size 1.1m x 1.8m. Thickness of wall is 230 mm and thinkness of lintel is 100 mm and a bearing on either side of doors and windows is 150mm.

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PART-B**5 x 10= 50M**

- Instructions:** 1) Answer all questions. Each question carries Ten marks.
2) Answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

- 11) State and explain the methods of taking out quantities with examples and sketches. Mention the advantages of each method.
- 12) 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 84m. Calculate the earthwork quantity by using.
(a) Trapezoidal rule, and (b) Prismoidal rule.

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

- 13) Reduced levels of ground along the center line of a proposed road from Chainage 0 to 9 are given below. The formation level at '0' Changes is 10.00m and the road is in downward gradient of 1 in 100. Formation width of roads is 10m and side slopes are 2:1 for both banking and cutting. Length of chain is 20m. The ground is level in the transverse direction. Calculate the quantity of earth required by
(i) Trapezoidal rule and (ii) by Prismoidal formula.

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| | | | | | | | | | | |
|----------------|-----|-----|------|------|------|------|------|------|-----|------|
| Change | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| R.L. of ground | 8.0 | 7.8 | 7.60 | 7.20 | 6.80 | 6.10 | 6.20 | 5.90 | 5.0 | 4.90 |

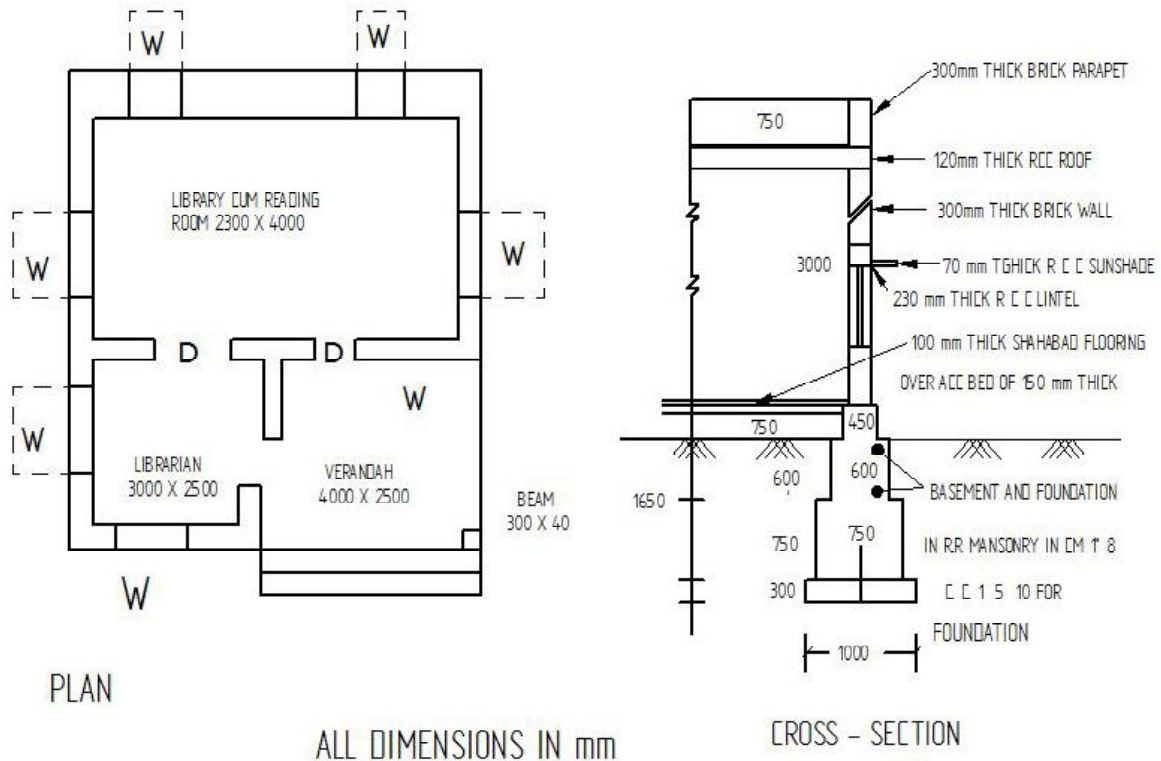
- 14) Prepare a preliminary estimate of a building project with total plinth area 600m². From the following data, calculate the total cost of the project:
- (i) Plinth are rate-Rs. 12,000 per m².
(ii) Add for water supply and sanitary fittings- @12½% of cost of the building.

- (iii) Add for electrification- @7 1/2 % of cost of the building
- (iv) Add for architectural features - @ 1% of cost of th buliding
- (v) Add for unforeseen items- @3% of cost of the building
- (vi) Add for unforeseen items- @5% of cost of the building
- (vii) Add fot petty supervision charges-@4% of cost of the building.

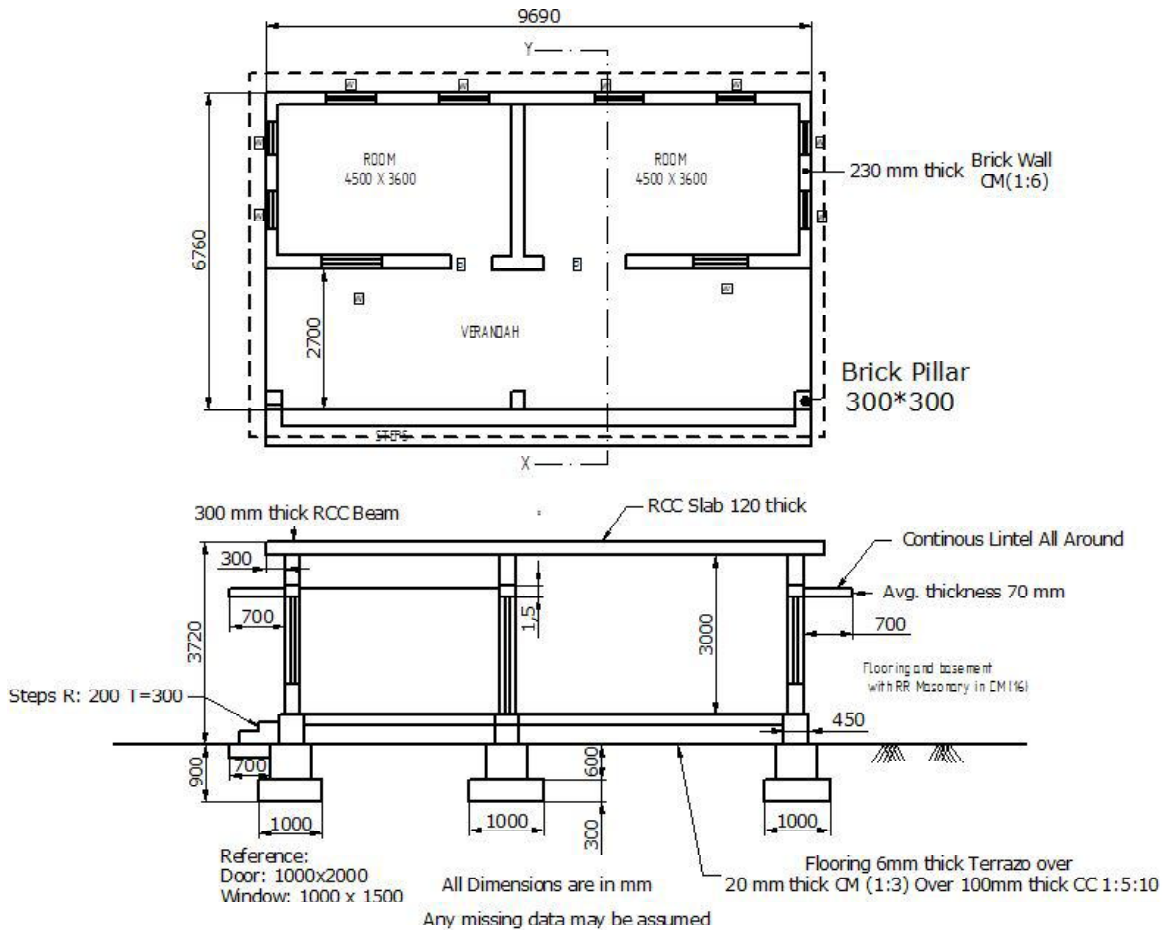
15) Explain the methods of preparing approximate estimates.

16) Prepare the detailed estimate for the following items of work for a building shown in Fig.

- (a) R.R masonry in C.M 1:6 for footings and basement.
- (b) Brick work in C.M 1:6 for super structure.
- (c) Plastering to ceiling with C.M 1:3.



- 17) Prepare the detailed estimate for the following items of work shown in Fig. below:
- RR masonry in footings.
 - Brick masonry in CM (1:6) for superstructure excluding parapet and without deduction for doors and windows and lintels.
 - RCC roof slab(1:2:4)100mm thick.



- 18) calculate the quantity of steel required for the steel truss as shown in fig. below
- Main members at 56N/m
 - Struts at 45N/m
 - Tie Members at 56 N/m.

