C09–C–**404**

3425

BOARD DIPLOMA EXAMINATION, (C–09)
OCT/NOV—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) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define the term specifications and write the types of specification.

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

3. Calculate the length of common rafter and number of common rafters spaced at 0·5 m c/c for the hipped roof shown below in Fig. 1 :
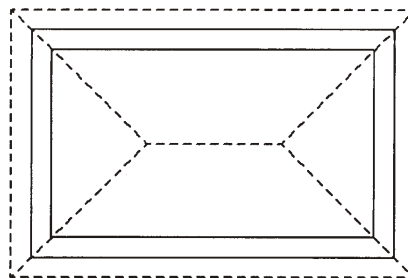

Fig. 1

Room size = 6·0 m × 4·0 m
Wall thickness = 300 mm
Slope of roof = $\frac{1}{3}$ of span
Eaves projection = 500 mm

4. The section of steps at the front of a residential building is shown in Fig. 2. Calculate the volume of brick masonry in CM (1:5) for all three steps, if the length of each step is 2·10 m :
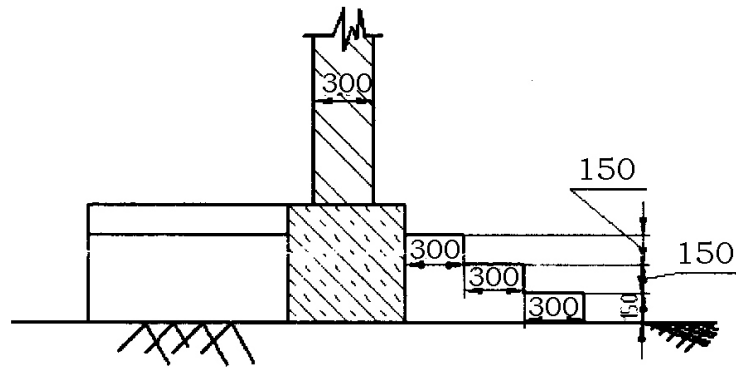

Fig. 2

5. Explain the importance of lead statement and standard data book.

6. Calculate the quantity of steel required for main bar shown in Fig. 3. Assume top and bottom clear cover as 20 mm, end cover as 40 mm, weight of 16 mm ∅ bar is 1·58 kg/m :
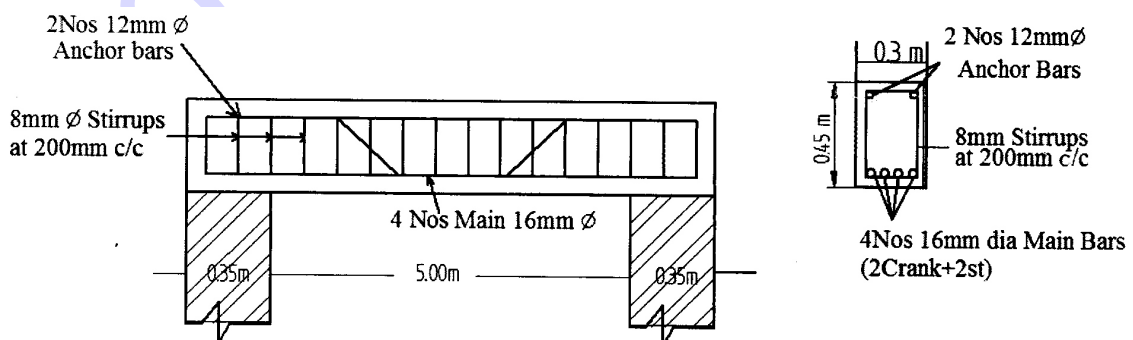

Fig. 3

Note : Use tar steel, Hooks are not necessary.

7. The details of a 120 m reach of a canal *AB* are given below :

    Depth of cutting at *A* = 2·8 m
    Depth of cutting at *B* = 4·2 m
    Side slopes of canal = 2:1
    Width of canal at bottom = 8·0 m

Calculate the volume of earthwork by mid ordinate method.

8. The cross-section of head wall for pipe culvert is shown in Fig. 4. Calculate the quantity of RR masonry in CM (1:6), if the length of head wall is 6·50 m without deductions :
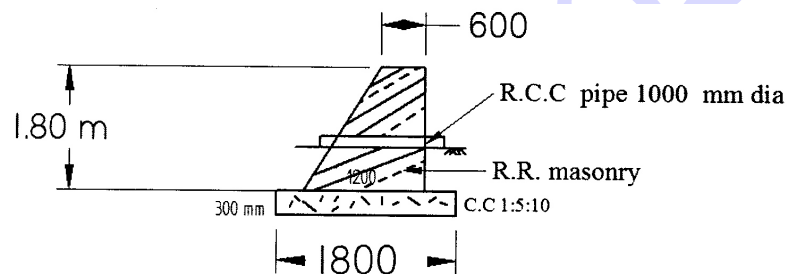

Fig. 4

9. Write short note on scrap value.

10. Write short note on rent fixation.

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 building as shown in Fig. 5 :

(a) Earthwork excavations in foundations

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(b) Painting wood work for panelled doors and panelled windows two coats over primer coat
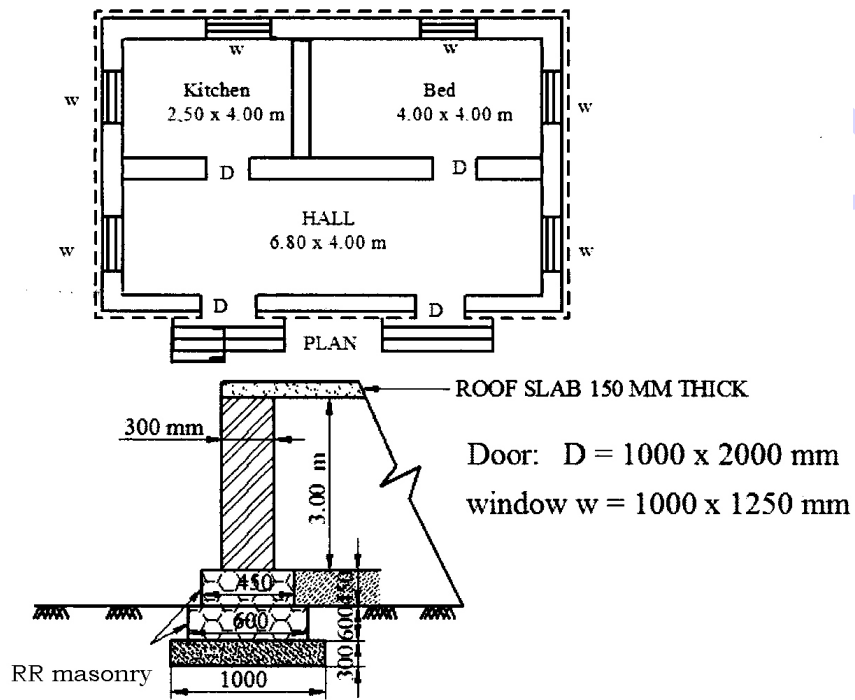
(c) RCC for roof slab 150 mm thick

Fig. 5 : Section of wall

12. Prepare the detailed estimate for the following items of work for the building as shown in Fig. 6 :

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(a) RR masonry in CM (1:6) for the footings and basement

(b) Plastering with CM (1:8) 12 mm thick for inside the building without deductions
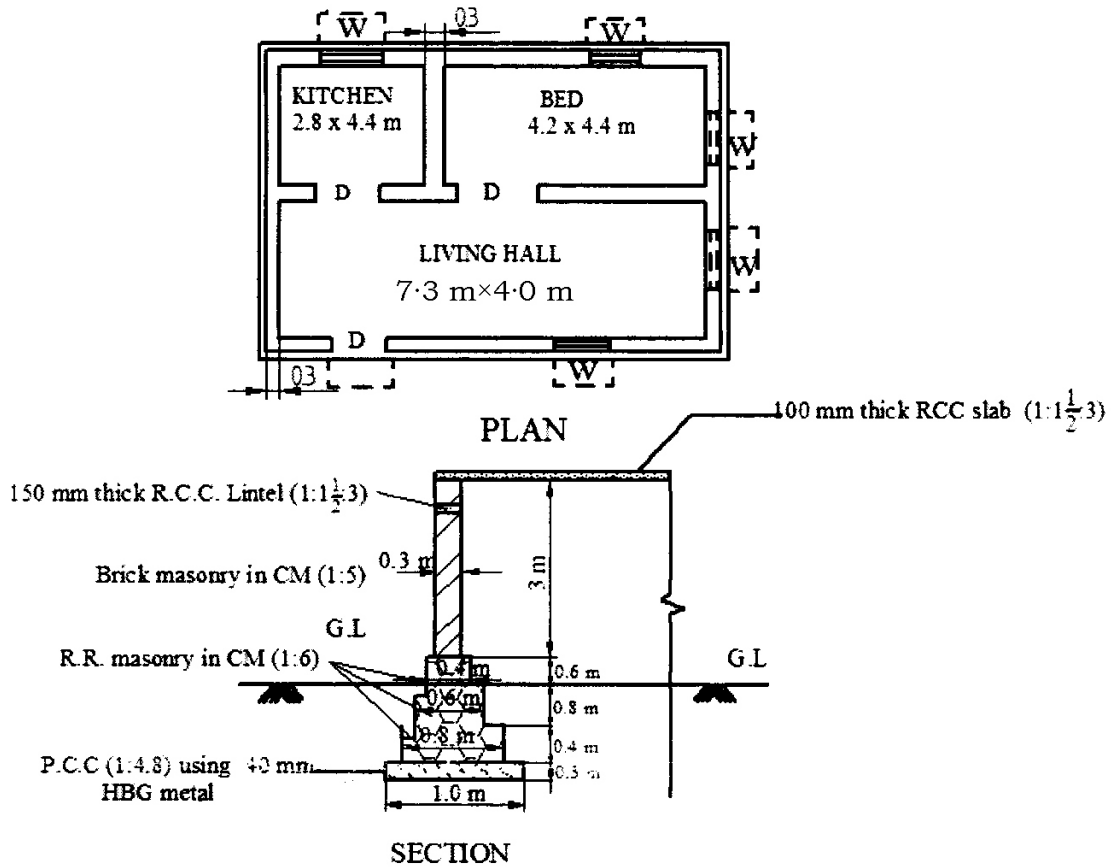
(c) Plastering with CM (1:3) for ceiling

Fig. 6

13. Prepare the datasheet and calculate the cost of items given below :

(a) Cement concrete (1:4:8) using 40 mm HBG metal unit = 1 m^3

(b) RR masonry in CM (1:6) unit = 1 m^3

Materials and labour required for

CC (1:4:8) using 40 mm HBG metal—1 cu m

0·92 m^3	HBG metal
0·46 m^3	Sand
0·115 m^3	Cement
0·2 nos.	Mason
3·2 nos.	Mazdoors
LS	Sundries

RR masonry in CM (1:6)—1 cu m

1·1 m^3	Rough stone
0·34 m^3	CM (1:6)
1·8 nos.	Mason
2·8 nos.	Mazdoor
LS	Sundries

Lead statement materials :

Sl. No.	Materials	Rate at source (in ₹)	Lead (in km)	Conveyance charges (per cu m in ₹)
1	40 mm HBG metal	400 per m^3	10 km MR	2 per km
2	Sand	90 per m^3	8 km MR	3·50 per km
3	Rough stone	150 per m^3	5 km MR	3 per km
4	Cement	2200 per tonne	At site	—

Labour charges :

(a) Mason = ₹ 223·00 per day

(b) Mazdoor = ₹ 212·50 per day

(c) Hand mixing charges of cement mortar per m^3 = ₹ 34·00

14. Prepare the data sheet and calculate the cost for the following items of work :

(a) RR masonry with CM (1:8) unit—1 m^3

1·05 m^3	Rough stone
0·34 m^3	CM (1:8)
1·8 nos.	Mason
2·8 nos.	Man mazdoor
LS	Sundries

(b) Pointing to RR masonry in CM (1:5) unit—10 m^2

0·09 m^3	CM (1:5)
2·28 nos.	Mason
0·5 nos.	Man mazdoor
1·1 nos.	Woman mazdoor
LS	Sundries

Lead statement of materials :

Sl. No.	Materials	Rate at source (in ₹)	Lead (in km)	Conveyance charges (per km)
1	Rough stone	320·00/m^3	15	4·00/m^3
2	Sand	95·00/m^3	10	3·00/m^3
3	Cement	2500·00/10kN (1 tonne)	At site	—

Labour charges :

    Mason   = ₹ 225·00/day

    Men mazdoor   = ₹ 180·00/day

    Women mazdoor   = ₹ 180·00/day

    Mixing charges for CM   = ₹ 40·00/m^3

15. The formation width of a road in embankment is 10·0 m. The side slopes are 2:1. The depths along the centerline of road at 50·0 m intervals are 1·20, 1·10, 1·40, 1·20, 0·90, 1·5, 1·0. Calculate the quantity of earthwork by—

   (a) trapezoidal rule;

   (b) prismoidal rule.

16. Calculate the following quantities for a septic tank shown in Fig. 7 :

   (a) Earthwork excavation for septic tank foundation

   (b) Brick masonry in CM (1 : 5)
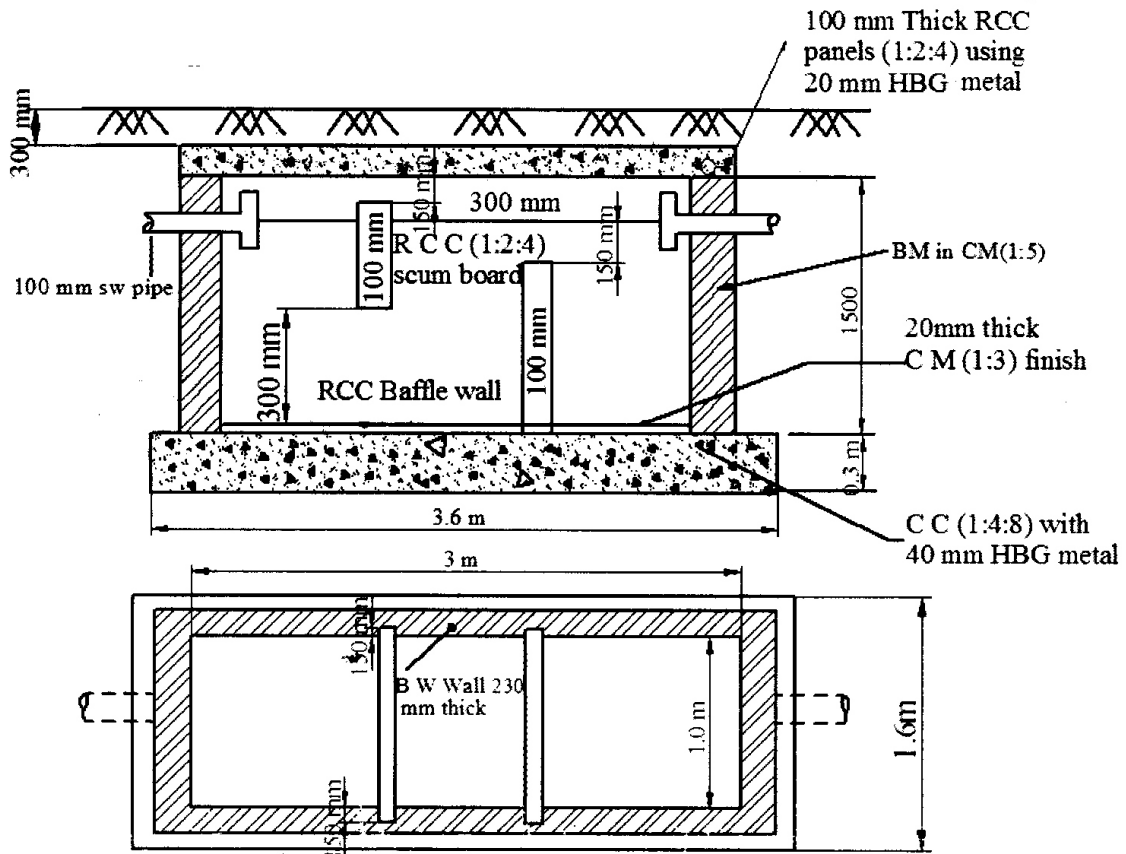
(c) RCC (1:2:4) for roof slab

Fig. 7

17. Prepare the detailed estimate for the following items of work for a pipe culvert shown in Fig. 8 :

(a) CC (1:4:8) under head walls

(b) Compacted granular material for bedding and benching under pipe without deduction for pipe portion

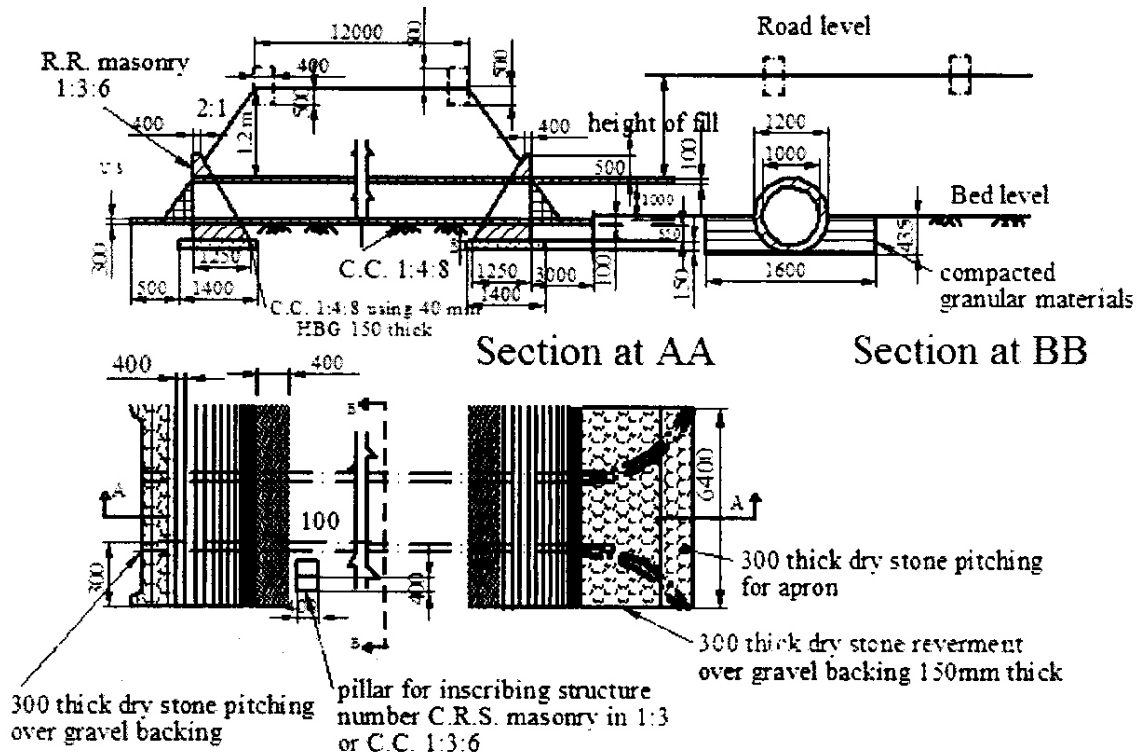*(c)* RR masonry for head walls without deductions for pipe portion

Fig. 8 : Plan

Note :

1. Longitudinal shape of pipe should minimum of 1000 mm dia

2. First class bedding can be used for maximum height fill of 4000 mm

3. All dimensions are in mm

18. Residential building constructed 12 years ago is situated on a plot whose total area is $400\,\text{m}^2$. The plinth area of the building is $240\,\text{m}^2$. The present cost of construction of the building is ₹ 1,30,000 and the cost of the land is ₹ $180/\text{m}^2$. The rate of depreciation for the value of the building is 1%. Calculate the total value of the property.

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