

FOURTH SEMESTER DIPLOMA EXAMINATION IN
ARCHITECTURE — APRIL, 2017

QUANTITY SURVEY - I

[Time : 3 hours

(Maximum marks : 100)

[Note :—1. Missing data may be suitably assumed.

2. Quantities should be worked out in standard form.

3. Sketch on 4th page.]

PART — A

(Maximum marks : 10)

Marks

I Answer the following questions in one or two sentences. Each question carries 2 marks.

1. Define :

(i) Work charged establishment (ii) Contingencies

2. Give the unit of measurement for :

(i) wood work for door and window frames

(ii) ridges, hips and valleys

3. Write different methods of taking out measurement for detailed estimate.

4. State the coefficients of painting of fully panelled window and fully glazed window.

5. What is standard data book ? (5×2=10)

PART — B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. A person is to construct a building of plinth area equal to 120sq.m. on a plot in Bangalore at a cost of ₹ 7,00,000. The height of the building from ground level to the top of the roof is 3.2m and a parapet wall of height equal to 80cm is constructed on the terrace. Determine the cost of construction of a similar type of building of plinth area 150sq.m in the same locality based on cubic content/volume rate.

2. Calculate the quantity of steel in kg @ 0.75% for the roof slab of the building shown in fig.(1)

3. Estimate the quantity of DPC required for the building in fig. (1)

4. Determine the quantity of masonry work required for a well 2.5m inner diameter and 60m deep and 60cm thick.
5. Determine the quantity of parapet wall of the building in fig. (1)
6. Write short notes on :
 - (i) Lead and lift
 - (ii) Schedule of rates
 - (iii) Conveyance charge
7. How rate analysis is done for a particular item of work ? (5×6=30)

PART — C

(Maximum marks : 60)

(Answer one full question from each unit. Each full question carries 15 marks)

UNIT — I

III Determine the quantity of earthwork for the portion of a road between chainages 50 and 60 from the following data, lengths being measured with a standard 20m chain :

Chainage	50	51	52	53	54	55	56	57	58	59	60
Ground Level (m)	131.1	131.2	130.9	131.2	130.8	130.7	130.6	130.4	129.1	129.5	129.7

The formation level at chainage 50 is 130.0m and the road is in a rising gradient of 1 in 200. The width of formation is 10m and the side slopes 1½ : 1 in embankment and 1:1 in cutting. The lateral slope of the ground may be assumed as level. Draw also the longitudinal section and typical cross sections at cutting and banking.

Or

IV (a) Find the approximate cost of the building shown in fig. (1) using plinth area method. Assume plinth area rate as ₹ 6,500 per sq.m.

(b) Find the capacity of the reservoir from the following data using trapezoidal formula

Concave in metres	25	30	35	40	45	50	55
Area in sq.m.	1500	2700	3900	5000	6400	8100	9400

UNIT — II

V (a) Compute the quantity of brick work and the number of bricks required for walls for the building in fig. (1)

(b) Calculate the quantity of earth filling in plinth for the building in fig.(1)

Or

- VI (a) Compute the quantity of R.R. Masonry in CM 1:8 for the building in fig. (1)
- (b) Compute the quantity of earthwork excavation for the building shown in fig. (1)

UNIT — III

VII (a) Determine the quantity of internal and external plastering on brick masonry for building in fig. (1)

(b) Compute the quantity of 20cm high skirting for the building shown in fig. (1)

Or

VIII (a) Work out the quantity of wood work for shutters of doors of building in fig.(1)

(b) Work out the quantity of painting for doors of the building in fig.(1)

UNIT — IV

IX Work out the rate per unit of R.C.C. 1: 1½ : 3 using 20mm broken stone :

- Materials
- 0.009 cubic metre broken stone @ ₹ 900/cubic metre
 - 0.0045 cubic metre sand @ ₹ 2000/cubic metre
 - 43kg cement @ ₹ 8000/Tonne
- Labour
- 0.002 Mason @ ₹ 750/each/day
 - 0.01 Man @ ₹ 600 each/day
 - 0.035 Woman @ ₹ 500/each/day

Or

X Work out the rate for standard unit for brick work in CM. 1:5

- Materials
- 500 bricks @ ₹ 3,500/1000 numbers
 - 43 kg cement @ ₹ 350/bag
 - 0.24 cubic metre dry sand @ ₹ 2,500/cubic metre
- Labour
- 0.7 Brick Mason @ ₹ 750/each/day
 - 0.35 Man @ ₹ 600/each/day
 - 1.20 Woman @ ₹ 500/each/day
- Conveyance charge for materials

Materials	Distance in km	Rate per unit per km ₹
Brick	20	20
Sand	27	15
Cement	15	50

Add 10% profit for contractor.

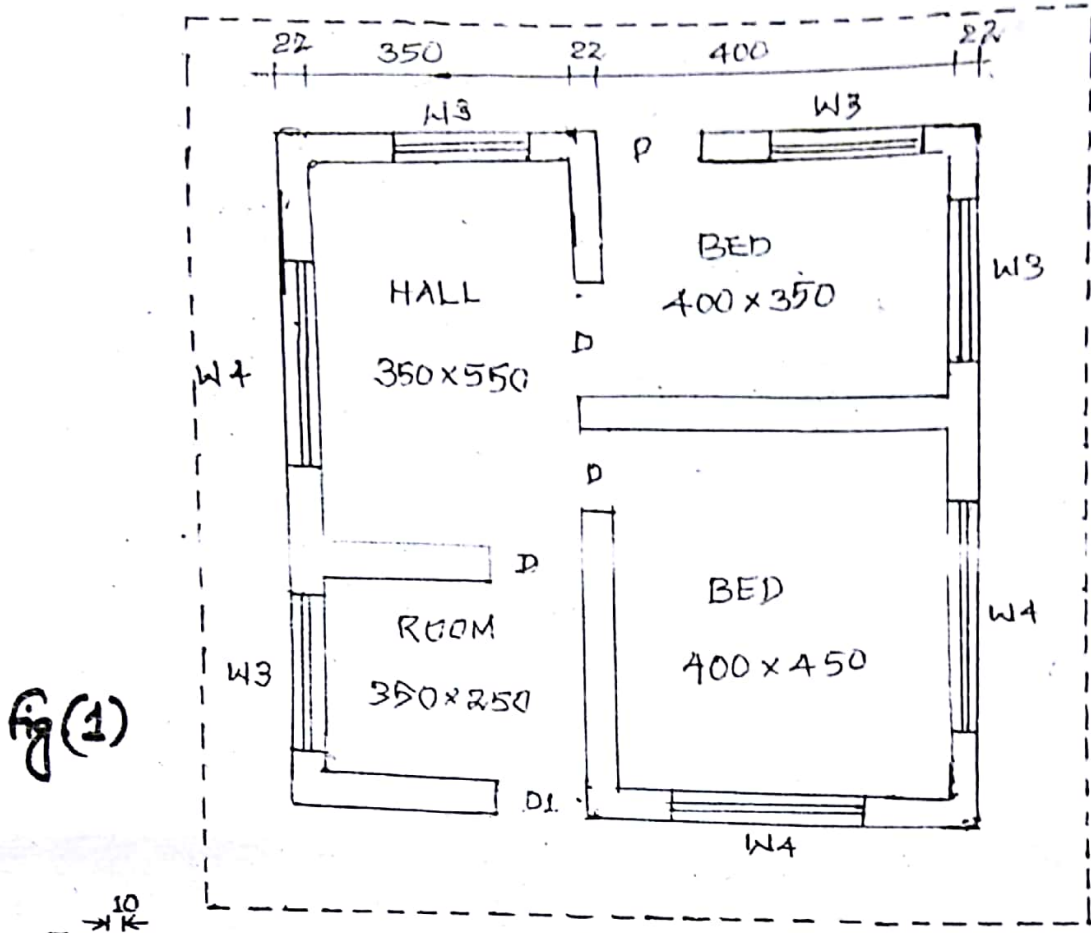
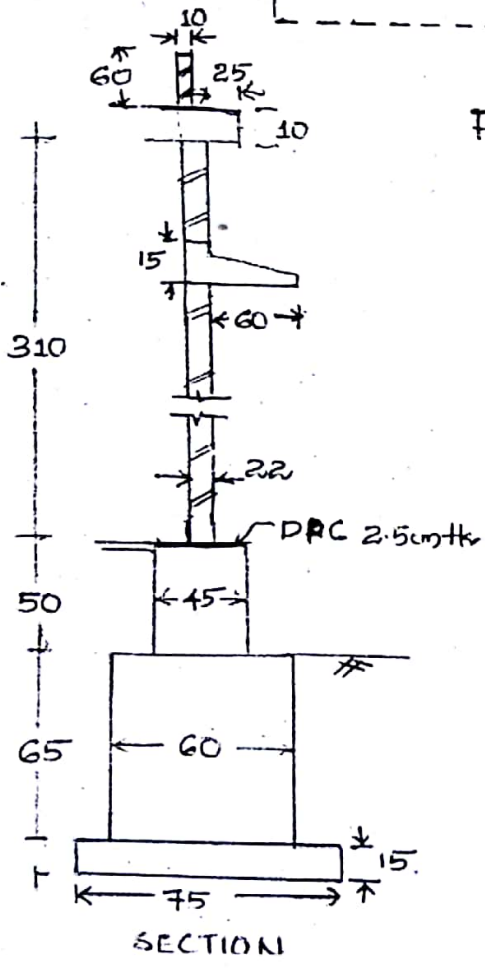


Fig (1)

PLAN



SECTION

- Foundations - Cement Concrete (75x15)
- Footing - R.R. Masonry (60x65)
- Basement - R.R. Masonry (45x50)
- Super structure - Brick Masonry (22cm thick)
- Roof slab, lintel & sunshade - R.C.C.
- lintel provided for the whole length of wall.
- Door D1 - 110 x 210
- D - 100 x 210
- Window W4 - 200 x 150
- W3 - 150 x 150
- Size of door frame - 10cm x 7.5cm