FOURTH/SIXTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—OCTOBER, 2013

QUANTITY SURVEYING—I

(For IVth Semester CE, EN & WR and for VIth Semester AR)

[*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].

Marks

PART—A

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. What is quantity surveying ?

2. Write the units of the following items of work :

(i) C.C. 1:4:8 using 40 mm broken stone.

(ii) R.C.C. 1:2:4 using 20 mm broken stone.

(iii) Plastering the wall.

(iv) Door shutters.

3. Find the area of painting required for a panelled door of size 100 × 210 cm.

4. What is pointing ?

5. Define bad and lift.   (5×2=10)

PART—B

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

1. Estimate the quantity of earth work (Using prismoidal formula) for a portion of road work having length 300 m in a uniform ground. The depth of cutting at the two ends are 0.90m and 1.6 m. The formation width is 12 m and side slope 1½:1. There is no transverse slope.

2. Explain the different methods of taking out measurements for a building.

3. Calculate the quantity of earth filling in the plinth of building shown in figure I.

4. Calculate the quantity of brick work for the parapet wall for the building shown in figure I.

Marks

5. An R.C.C. slab (using 1:2:4 mix with 1% steel) having 7.6 m length, 4.3m width and 12 cm thickness is provided for a building. Calculate the quantity of the following materials :

   (i) Steel in kg   (ii) Cement in bags.

6. Explain Abstract estimate.

7. Explain how you will prepare conveyance statement.   (5×6=30)

PART—C

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

Unit – I

III (a) Explain approximate estimate.   3

   (b) Reduced levels of ground along the centre line of a proposed road from chainage 0 to 14 are given below. The formation level at '0' chainage is 60 m and the road is an upward gradient of 1 in 150. Formation width of road is 12m and side slopes 1½:1. Length of chain is 30 m. The ground is level in the transverse direction. Calculate the quantity of earthwork required by : (i) Trapezoidal rule and (ii) Prismoidal formula :

Chainage	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
R.L of Ground	61.2	61.5	62.3	62.7	62.5	63.2	64.1	63.9	63.6	63.8	63.2	64.1	63.9	64.9	64.5

12

Or

IV (a) What are the requirements and duties of a quantity surveyor ?   8

   (b) A single room building is having 8.6 m × 4.2m internal dimensions with 24 cm thick wall. The plinth projection is 8 cm. Find the approximate cost of the building if the plinth area rate is ₹ 6000 per sq.m.   7

Unit – II

V (a) The details collected from a contour map of a reservoir are given below :

Contour in metres	80	83	86	89	92	95	98	101	104	107	110
Area in sq.m.	1800	2600	3900	5200	7050	9400	12300	14200	15150	17400	21600

Calculate the capacity of the reservoir from 80m contour to 110m contour using prismoidal formula.   9

   (b) Calculate the quantity of damp proof course (D.P.C) for the building in figure I.   6

Or

VI (a) Calculate the quantity of R.R. Masonry in C.M. 1:8 for the building in Figure I.   9

   (b) Calculate the quantity of P.C.C. for footing of the building shown in figure I.   6

Unit – III

VII (a) Calculate the quantity of plastering with CM 1:4, for inside and outside the walls of the building shown in figure I. 9

(b) Calculate the quantity of painting for the doors and windows of the building shown in figure I. 6

Or

VIII (a) Calculate the quantity of R.C.C. 1:2:4 for the side walls, roof slab and floor slab of an R.C.C. ground water tank having inside dimensions 4 m × 3m. The floor slab and roof slab projection from the side wall is 10 cm. Thickness of side wall is 15 cm, thickness of floor slab 20 cm and thickness of roof slab 10 cm. Height of tank is 1.6 m. 6

(b) Calculate the quantity of steel required for the R.C.C. roof slab of the building in figure I. Take the quantity of steel 1%. 9

Unit – IV

IX (a) Find the cost per unit quantity of pointing random rubble masonry with CM 1:4:

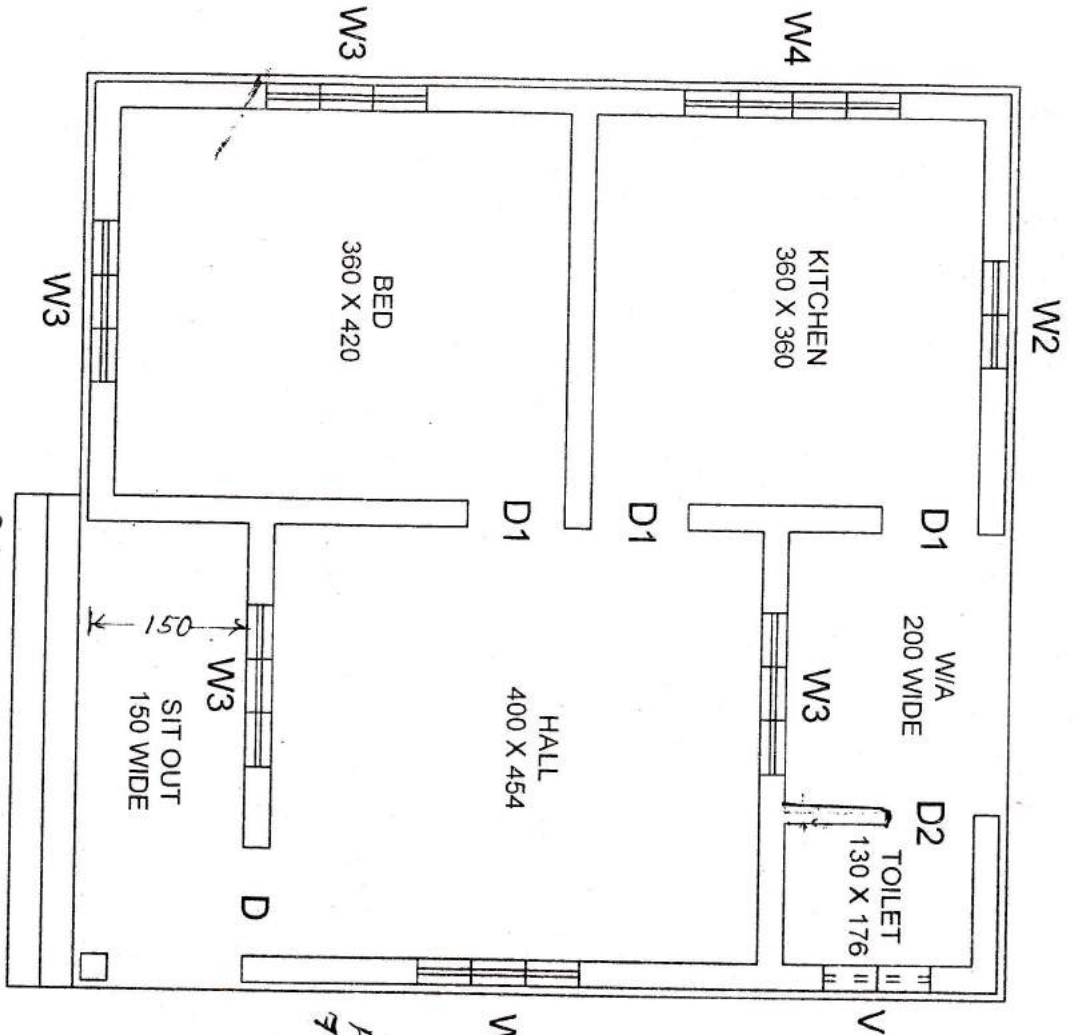| Materials for 10 m²	Rate per unit
0.03m³ dry sand	@ ₹ 3,000 per unit
10 kg cement	@ ₹ 6,300 per unit
Labour	
0.54 Rubble mason	@ ₹ 450 per each
0.54 Man	@ ₹ 300 per each
0.54 Woman	@ ₹ 250 per each

Add 10% contractors profit. 8

(b) Prepare a conveyance statement for the materials from the following data :

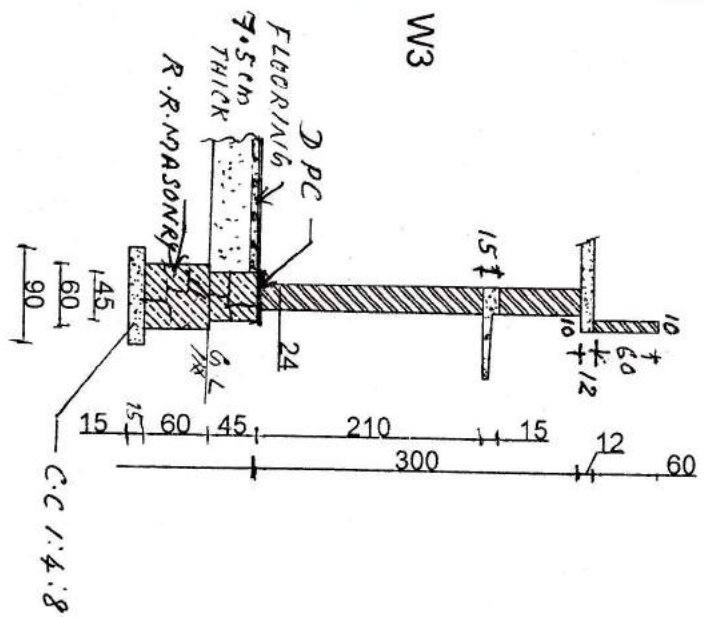| Materials	Rate per unit at source	Distance in km	Rate per unit per km
Bricks	₹ 6,500	45 km	16
Dry sand	₹ 3,000	60 km	12
Cement	₹ 6,300	20 km	12

7

Or

X (a) What is overhead charge ? 3

(b) Prepare abstract estimate for a building having the following items of work :

(i) Earth work excavation for foundation, 16m³ @ ₹ 930/10m³.

(ii) Cement concrete 1:4:8, 2.8m³ @ ₹ 3740/m³.

(iii) Brick work in cm 1:6, 12m³ @ ₹ 3400/m³.

(iv) R.C.C. work using 1:2:4 mix, 7.6m³ @ 53/10dm³.

(v) Steel for R.C.C. work, 1.3 q @ ₹ 5540/quintel.

(vi) Plastering with cm 1:4, 200 sq.m. @ ₹ 2700/10m².

(vii) C.C. flooring using 40 mm broken stone 90m² @ ₹ 5300/10m²

Add 5% for contingencies and work charged establishment. 12

PLAN

BED
360 X 420

KITCHEN
360 X 360

HALL
400 X 454

SIT OUT
150 WIDE

W/A
200 WIDE

TOILET
130 X 176

W2

W3

W4

W3

W3

W3

W3

D1

D1

D1

D2

D

V

150

DOOR - D - 100X210 FULLY PANELLED.
DOOR - D₁ - 90X210 "
WINDOW - W₂ - 100X130 FULLY GLAZED.
WINDOW - W₃ - 150X130 "
WINDOW - W₄ - 200X100 "
VENTILATOR - V - 100X50 "
D₂ - PANELLED DOOR ~ 80X210

Fig. I

All Dimensions in cms

FLOORING
7.5cm THICK

DPC

R.R.MASONRY

G.L

C.C 1:4:8

90 60 45 24 15 10 60 12

15 15 60 45 210 15 12 60

300