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(REVISION—2010)

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FOURTH/SIXTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY—MARCH, 2015

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 table form.

3. Sketch on 4th page.]

PART—A

(Maximum marks : 10)

Marks

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

1. List two objects of preparing Estimates.
2. Define lead for earthwork.
3. How will you compute the cost of materials at site ?
4. Mention extra provisions that have to be made while preparing estimates of multistoried buildings.
5. Define Abstract Estimate.

(5×2=10)

PART—B

(Maximum marks : 30)

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

1. A canal is proposed to be excavated between two points A and B, 200m apart. The bed width is 10m with side slopes 1.5:1 and depth of cutting is 1.2m and 2.6m at A and B respectively. Compute the earth work excavation by Mid-Ordinate method.
2. Discuss the terms :
   (i) Lump sum
   (ii) Work charged establishment.
3. Discuss two methods of taking out measurements to compute quantities of a building.
4. Determine the quantity of Painting all outside of the given building in fig. 1.
5. What are the different items involved in the preparation of detailed estimate of WBM Road ?

Marks

6. Compute the following items for the building given in fig. 1 :

   (i) Earthwork excavation for foundation

   (ii) PCC 1:5:10 using 40mm broken stones for foundation.

7. Compute the total cost for brickwork in 1:5 cement mortar for a 200mm thick wall of length 35 metres centre to centre to a height of 3.0 metre using standard bricks of size 19cm × 9cm × 9cm. For one unit of brickwork 500 bricks @ ₹ 3,200/1000nos, 0.24 m^3 sand @ ₹ 1,940/m^3, 69 kg. cement @ ₹ 6,900/t, and labour 0.7 mason @ ₹ 600/each, 0.35 men @ ₹ 500/each, 0.7 women @ ₹ 500/each required are. Rates mentioned are the values at site.

(5×6=30)

PART — C

(Maximum marks : 60)

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

UNIT—I

III The ground levels along the centre line of a road are given below :

Chainage in metres	0	50	100	150	200	250	300	350	400
R.L. of ground	98.0	97.5	98.5	97.5	99.0	97.8	98.2	97.6	99.3

The road is to be formed in embankment with the formation level at 100.00 m throughout. If the width of road is 12metres with side slopes 2:1, calculate the quantity of earthwork required by prismoidal formula. Assume transverse slope is level. Draw the longitudinal section and typical cross sections. 15

OR

IV Estimate the quantity of earthwork for a portion of road 240m length by trapezoidal formula from the following data with intervals of 40m. Draw the longitudinal section and typical cross sections. Formation width 10m, side slopes 2:1, RL of formation at 0 chainage is 120m and a down gradient of 1 in 150.

Chainage in metres	0	40	80	120	160	200	240
R.L. of ground	117.0	117.8	116.9	117.4	116.6	116.2	115.9

15

UNIT—II

V Compute the following items for a compound wall of 100mm thick and 2.5 metres height constructed around the plot of 28m × 20m size inside the compound wall. Provide two gates of widths 3.2m and 1.2 m respectively. Provide attached piers at 2m c/c. size of foundation : 600mm deep and 300mm wide. Any other data required may suitably be assumed :

   (a) Earthwork excavation

   (b) Brickwork in 1:6 Cement mortar

   (c) Plastering with Cement mortar 1:3, 12mm thick. 15

OR

Marks

VI Calculate the quantity of the given building in figure 1:

(a) Random Rubble masonry in 1:6 cement mortar for foundation and basement.

(b) RCC 1:2:4 using 20mm broken stones for Sunshade and Lintel. 15

UNIT—III

VII Compute the quantity of plastering with cement mortar 1:4 all outside and inside. (figure 1) 15

OR

VIII Compute the quantity of (fig. 1).

(a) Cement concrete 1:5:10 using 40mm broken stones for flooring.

(b) Ceiling plaster with 1:3 cement mortar. 15

UNIT—IV

IX Workout the rate per unit for RCC 1:2:4 using 20mm broken stones :

Materials : 0.009m^3 broken stones @ ₹ 980/m^3,

0.0045 m^3 sand @ ₹ 1,500/m^3,

3.3 kg cement @ ₹ 6,800/tonne. Add Contractors profit – 10%.

Conveyance of materials and labour as in the NOTE below. 15

OR

X Calculate the rate for one unit of :

(a) RR masonry in 1:6 cement mortar for foundation.

(b) Plain concrete 1:3:6 using 40mm broken stones.

Add contractors profit – 10%. Cost/unit quantity, Conveyance of materials and labour as in the NOTE below. 15

NOTE :

Conveyance of requirement :

Material	Cost/unit at source	Source Distance	Rate/unit/km
Broken stones	980	20	18
Sand	1500	15	12
Bricks	3000	20	28
Rubble	800	12	35
Cement	6800	5	52

Labour requirement :

Work	Mason	Man	Women
RR Masonry	0.7	0.35	0.7
Brick work	0.7	0.5	0.7
Plain concrete using 40mm Broken stones	0.1	1.0	1.4
RCC 1:2:4, 20mm broken stones	0.002	0.01	0.035
Rate of labour	625	400	400

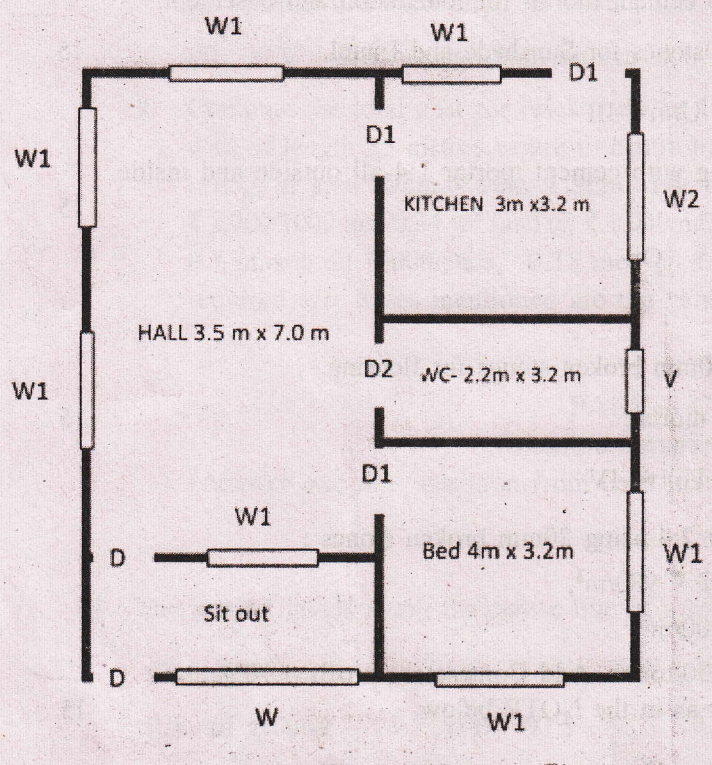

FIG.I

Specifications:

Foundation :

PCC-1:5:10- 900mm wide and 150 mm high

RR Masonry in 1:6 cement mortar –

Foundation 600mmx 600 mm size.

Basement 450mm x 450 mm size

Brick masonry in 1:6 cement mortar –

walls 200 mm thick constructed centrally over basement for a height of 3000mm.

Parapet walls 100 mm thick, 600 mm high

RCC 1:2:4 using 20 mm broken stones,

100 mm thick roof slab projecting 100 mm beyond the face of the walls.

Lintels 150 mm high and sunshade 60mm thick at ends and 100 mm near face of wall-projecting 600mm from face of wall all round

Flooring - PCC 1:5:10 using 40 mm broken stones, 80 mm thickness.

Doors – D-1100 x 2100

D1-1000x2100

D2-900 x 2100

Windows -W-1700x1500

W1-1500x1500

W2-1500x1100

V – 900 x 600

(All Dimensions in mm) Sketch not to scale