

**THIRD SEMESTER DIPLOMA EXAMINATION IN CIVIL  
ENGINEERING — APRIL, 2017**

**QUANTITY SURVEYING - I**

[Time : 3 hours

(Maximum marks : 100)

- [Note :— 1. Missing data may be suitably assumed.  
2. Drawings attached.]

PART — A

(Maximum marks : 10)

Marks

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

1. List any four duties of quantity surveyor.
2. Reproduce the prismoidal formula for earth work computation.
3. List the unit of measurements for the following items of work.
  - (a) Earth filling in plinth
  - (b) Wood work for door and window
  - (c) Steel reinforcement bars in RCC work
  - (d) Pointing
4. Define sundries.
5. Define out turn of the labour. (5×2=10)

PART — B

(Maximum marks : 30)

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

1. Illustrate detailed estimate and relate to abstract of estimated cost.
2. Illustrate centre line method for computing detailed estimate.
3. Show the rules for deduction for openings in internal and external plastering.
4. Compute the quantity of fully glazed window shutters for the given drawing.  
(fig.1)

5. Compute the quantity of materials, stone grit and binder required for first coat of painting for two kilometre length of a bituminous road, 3.75m wide from the following data.

(i) Stone grit 20mm gauge @ 1.35 cum/100 sq.m.

(ii) Binder road tar No.3 @ 220 kg/100 sq.m.

6. Assess the quantity of cement, fine aggregate and coarse aggregate required for an R.C.C. slab over a room of size 3.30m × 4.20m.

Thickness of the slab is 100mm and a projection of 100mm on all sides of the wall.

Mix proportion : 1:1  $\frac{1}{2}$ :3

Materials for 1 cum of concrete

Cement @ 403 kg.	Fine aggregate @ 0.42 cum	Coarse aggregate @ 0.84cum
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7. Illustrate a typical conveyance statement.

(5×6=30)

### PART — C

(Maximum marks : 60)

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

#### UNIT — I

- III (a) (i) Summarise the cube rate estimate for building. 4

- (ii) Compute a preliminary estimate for a building project with a total plinth area of all building 1500 sq.m.

Plinth area rate - Rs. 1000/sq.m.

Water supply and sanitary - 5% of the building cost.

Internal electrification - 12% of the building cost. 4

- (b) Compute the quantity of earth work for a portion of road from the following data.

Chainage	0	1	2	3	4	5	6	7	8	9
RL	7.50	7.70	7.50	7.25	6.85	6.95	6.70	6.45	6.30	5.95

The formation level at chainage 0 is 8.0 and having falling gradient of 1 in 100. The top width is 12m and side slopes 1½ horizontal to 1 Vertical assuming the transverse direction is in level calculate the quantity of earth work Take 1 chain = 20m by using trapezoidal formula.

- IV (a) The plinth area of an apartment is  $500 \text{ m}^2$ . Compute the total cost of building from the following data :
- (i) Rate of construction = Rs. 1230 per  $\text{m}^3$ .
  - (ii) The height of apartment = 16.25m.
  - (iii) Water Supply, Sanitary and Electrical installations each at 6% of building cost.
  - (iv) Architectural appearance @ 1% of building cost.
  - (v) Unforeseen item @ 2% of Building cost.
  - (vi) P.S. and contingencies @ 4% of building 7
- (b) The following are the details of a road embankment. Width of road embankment is 10m. The side slopes are 2:1. The depth along the centre line road at 50m intervals are 1.25, 1.10, 1.50, 1.20, 1.0, 1.10, 1.15m. Compute the quantity of earth work by Mid sectional rule. 8

## UNIT — II

- V (a) Assess the quantity of earth work in excavation in foundation in ordinary soil for the given drawing. (fig.1) 7
- (b) Compute the quantity of brick masonry for super structure in cement mortar 1:6 for the given drawing. (fig.1) 8

OR

- VI (a) Compute the quantity of R.C.C work for roof slab and lintel for the given drawing. (fig.1) 7
- (b) Compute the quantity of random rubble masonry in cement mortar 1:6 for foundation and basement for the given drawing. (fig.1) 8

## UNIT — III

- VII (a) Compute the quantity of painting (two coat over a coat of priming) to doors and windows for the given drawing. (fig.1) 7
- (b) (i) Compute the quantity of earth work excavation in foundation for a ground level water tank. (fig.2) 4
- (ii) Compute the quantity of cement pointing (inside and out side) walls of the well using cement mortar 1:2 (fig.4). 4

OR

- VIII (a) Compute the quantity of white washing to internal and external walls for the given drawing (fig.1) 9
- (b) Assess the quantities of the following items for a state highway for 2 km from the given drawing. (fig.3)
- (i) Land acquisition
  - (ii) Plantation of grass on the side slopes 6

## UNIT — IV

IX (a) Conclude the following :

- (i) Conveyance charge
- (ii) Contractors profit
- (iii) Lump sum item

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(b) Assess the rate of brick masonry for super structure in 1:6 cement mortar.  
Unit 1 cum.MaterialsLabour

Country bricks - 500 Nos.

Mason - 1.4 @ Rs. 850/head/day

Cement - 105 kg @ Rs.8,000/ton Men mazdoor - 0.7 @ Rs.750/head/day

Sand - 0.42 cum @ Rs.1,200/cum Women mazdoor - 2.1 @ Rs.700/head/day

Conveyance statement

Sl. No.	Materials	Cost at source Rs.	per	Lead in km	Conveyance charges per km Rs.
1	Brick	9000	1000 Nos.	18	12

Add contractors profit 10%.

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OR

X (a) Compare cost of material at source and cost of material at site.

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(b) Assess the rate of Cement Concrete in (1:5:10) - Unit 1cum.

MaterialsLabour

40mm metal - 0.92 cum

Mason - 0.2 @ Rs.850/head/day

Cement - 0.092 cum

Men mazdoor - 1.8 @ Rs.750/head/day

@ Rs.8000/ton

Sand - 0.46 cum

Women mazdoor - 1.4 @ Rs.700/head/day

Conveyance statement

Sl. No.	Materials	Cost at source Rs.	per	Lead in km	Conveyance charges per km Rs.
1	cement	...	...	...	...
2	40mm metal	700	cum	12	12
3	sand	1000	cum	14	15

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