TED (15) – 4013

(REVISION — 2015)

Reg. No..

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

QUANTITY SURVEYING – 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.   Sketches accompanied.]

PART — A

(Maximum marks : 10)

Marks

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

1.   Define Contingencies.

2.   What are the methods of taking out estimates ?

3.   What is meant by Lump-sum item ?

4.   What is Preliminary estimate ?

5.   What is meant by Rates ?   (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1.   What are the data required to prepare an estimate ?

2.   Estimate the quantities of brickwork and plastering required in a wall 5.50m long, 3m high and 30 cm thick. Calculate also the cost, if the rate of brick work is Rs. 520.00 per cu m and of plastering is Rs. 12.50 per sq m.

3.   Write the duties of Quantity Surveyor.

4.   Define (a) Plinth area and (b) Carpet area.

5.   Briefly explain about Supplementary Estimate.

6.   What is meant by Cubical Content Estimate ?

7.   What is meant by Overhead costs ?   (5×6 = 30)

[88]

[P.T.O.

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Prepare a preliminary estimate of a four storeyed office building having a carpet area of 2000 sq.m for obtaining the administrative approval of the Government given the following data. It may be assumed that 30% of the built up area will be taken up by the corridors, verandahs, lavatories, staircase etc. and 10 % of the built up area will be occupied by walls.

   (i) Plinth Area rate is — Rs. 950.00/m²

   (ii) Extra due to deep foundation at site — 1 % of building cost.

   (iii) Extra for special Architectural treatment — 0.5 % of building cost.

   (iv) Extra for water supply and sanitary installation — 6 % of building cost.

   (v) Extra for Electric installations — 12.5 % of building cost.

   (vi) Extra for other services — 5 % of building cost.

   (vii) Contingencies — 2.5 %.

   (viii) Supervision charges — 8 %.   9

(b) What is meant by Revised Estimate ? On what circumstances this type of estimate is required to be prepared ?   6

OR

IV (a) Calculate the quantity of earthwork by Prismoidal formula for 200 m length for a portion of a road in a uniform ground. The heights of banks at the two ends being 1.00m and 1.60m. The formation width is 10 m and side slopes 2:1 (Horizontal : Vertical). Assume that there is no transverse slope.   8

(b) The Areas with Contours at the site of a proposed reservoir are given below. Find reservoir capacity using Trapezoidal rule.

Contour in m	101	102	103	104	105	106	107
Area in m²	528	910	1500	1750	2100	2800	3100

7

UNIT — II

V. Estimate the quantities of the following items of a two roomed building from the plan and section given in Figure -1.

General Specification: — Foundation- Lime concrete, Masonry – 1st class brickwork in CM 1 : 6 in foundation and plinth, 2.5 cm CC damp proof coarse, 1st class brickwork in lime mortar in superstructure.

   (i) Earthwork in excavation in foundation.

   (ii) Lime concrete in foundation.

   (iii) 1st class brickwork in lime mortar in superstructure.   (5×3=15)

OR

VI   Estimate the quantities of following items of a Masonry Water Tank from the given Figure - 2.

General specifications: — Foundation - Lime concrete, Masonry - 1st class brickwork in CM 1:6, Wall finishing - Inside 12 mm cement plastered 1:2 with coarse sand, Top and Outside 12 mm cement plastered 1:4 with local sand, Flooring - 5 cm CC 1 : 1½ : 3 over 30 cm Lime concrete with neat cement finishing.

   (i)   Earthwork in excavation.

   (ii)   Lime concrete in foundation and floor

   (iii)   5 cm Cement Concrete floor 1 : 1½ : 3   (5×3 =15)

Unit — III

VII   (a)   Estimate the quantity of the following item from the Figure –1.
Damp proof coarse 2.5 cm thick CC.   9

   (b)   Calculate the quantity of cement concrete for cement concreting 1 km length of 3.70 m wide road for 8 cm thick layer. Also calculate cost at the rate of Rs. 375.00 per cu m.   6

Or

VIII   Estimate the quantities of the following items from the given Figure – 2.

   (i)   12 mm Cement plaster 1:2 with coarse sand inside.   6

   (ii)   12 mm Cement plaster 1:4 with local sand outside.   9

Unit — IV

IX   Work out the *rate per cubic meter* of Ashlar Masonry in Superstructure in 1:6 Cement Sand Mortar. Take - 10 cu. m.

Materials

12.5 cu m	Stone (undressed)	@ Rs. 2500/cu m
0.35 cu m	Cement (10 ½ bags)	@ Rs. 3970/cu m
2.10 cu m	Sand (local)	@ Rs. 2000/ cu m

Labour

½ No.	Mistri (Head Mason)	@ Rs. 950/day	
28 Nos.	Mason including cutter	@ Rs. 850/day	
20 Nos.	Mazdoor (Beldar)	@ Rs. 700/day	
20 Nos.	Boy or Women Coolie	@ Rs. 650/day	
1 ½ Nos.	Bhishti	@ Rs. 500/day	
LS	Scaffolding	@ Rs. 250 LS	
LS	Sundries, T & P etc.	@ Rs. 100 LS	15

Or

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

Materials

500 Nos.	Bricks	@ Rs. 3500/1000 Nos.
43 kg	Cement	@ Rs. 350/bag
0.24 cu m	Dry sand	@ Rs. 2500/cu m

Labour

0.7	Brick Mason	@ Rs. 750/Each/day
0.35	Man	@ Rs. 600/Each/day
1.20	Woman	@ Rs. 500/each/day

Conveyance charge of materials

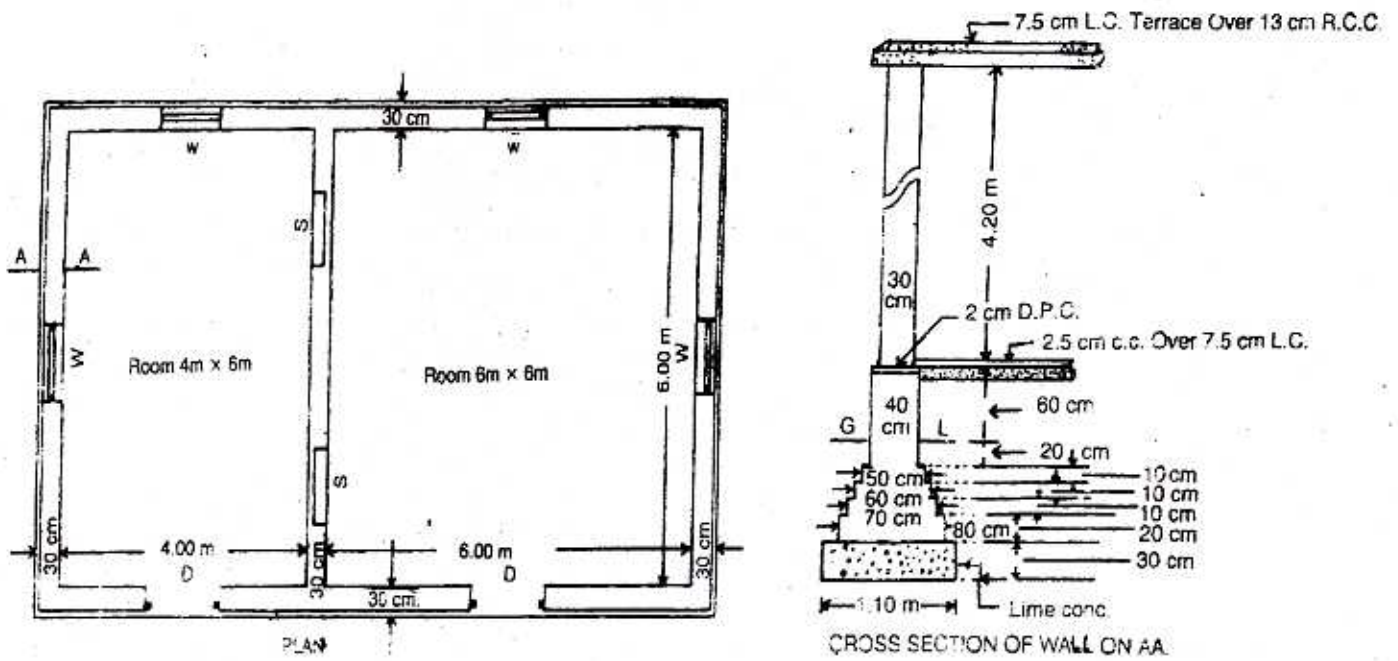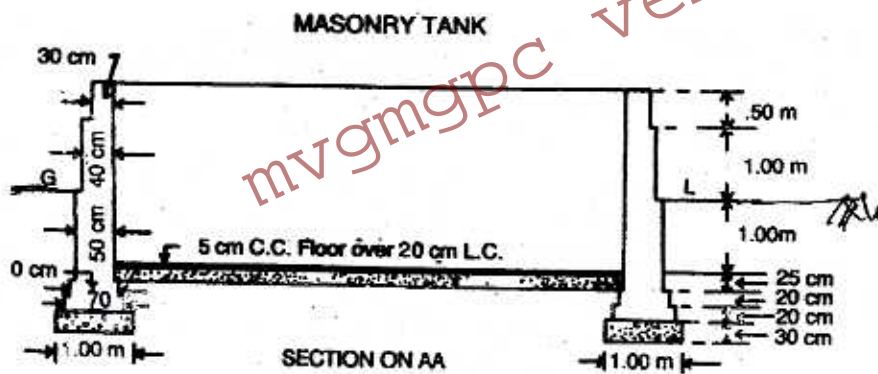| Materials	Distance in km	Rate per km
Cement	15	50
Sand	27	15
Brick	20	20

15

FIGURE: -(1) TWO ROOMED BUILDING

FIGURE:- (2) Masonry water tank