Total No. of printed pages = 6

CT-601/E&C/6th Sem/2018/M

ESTIMATION AND COSTING

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

1. Answer *all* the questions : 1×10=10

   (a) Define estimate.

   (b) What are the different types of approximate estimates ?

   (c) What is supplementary estimate ?

   (d) Why revised estimate is prepared ?

   (e) What are the methods of building estimate ?

   (f) What is work charged establishment ?

   (g) What are the methods of earthwork estimate ?

[Turn over

(h) What is overhead cost ?

(i) What are the requirements for estimate preparation ?

(j) Explain rate analysis.

2. (a) What are the units of measurement and payments of the following items of work ? 1×5=5

(i) Earthwork in excavation

(ii) Damp proof course

(iii) Sand filling

(iv) Supply of cement

(v) Plastering.

(b) Calculate the dry volume of materials for 1 cum of wet volume for : 2×5=10

(i) 12 mm thick plastering 1:3

(ii) 20 mm thick plastering 1:6

(iii) 2.5 cm cement concrete floor 1:2:4

(iv) Cement concrete in beam 1:1.5:3

(v) 4 cm thick cement concrete floor 1:3:6.

PART – B

Answer any *three* questions. 15×3=45

1. Estimate the quantity of earthwork and cost for a portion of road from the following data :

Chainage	0	1	2	3	4
RL of GL	7.5	7.7	7.5	7.25	6.85

Chainage	5	6	7	8	9
RL of GL	6.95	6.7	6.45	6.35	5.95

The formation level at chainage 0 is 8 and having a raising gradient of 1 in 100. The top width is 12m and side slopes 2H and 1V. Calculate the earthwork. Take 1 chain = 30m. 15

Rates – Earthwork in banking @ Rs. 8 per cum and earthwork in cutting @ Rs. 7 per cum.

2. Prepare the detailed estimate of the masonry water tank of 7m×5m from the given drawing and specification : 15

Specifications :

Foundation – Lime concrete.

Masonry – 1st class brickwork in cement mortar 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 cement concrete 1:1.5: 3 over 20 cm lime concrete with neat cement finishing.

Rates :

(a) Earthwork in excavation @ Rs. 350 per % cum.

(b) Lime concrete in foundation and floor @ Rs. 220 per cum.

(c) 1st class brickwork in 1:6 cement mortar @ Rs. 320 per cum.

(d) 12 mm cement plaster 1:2 with coarse sand @ Rs. 8.50 per sqm.

(e) 12 mm cement plaster 1:2 with local sand @ Rs. 8.30 per sqm.

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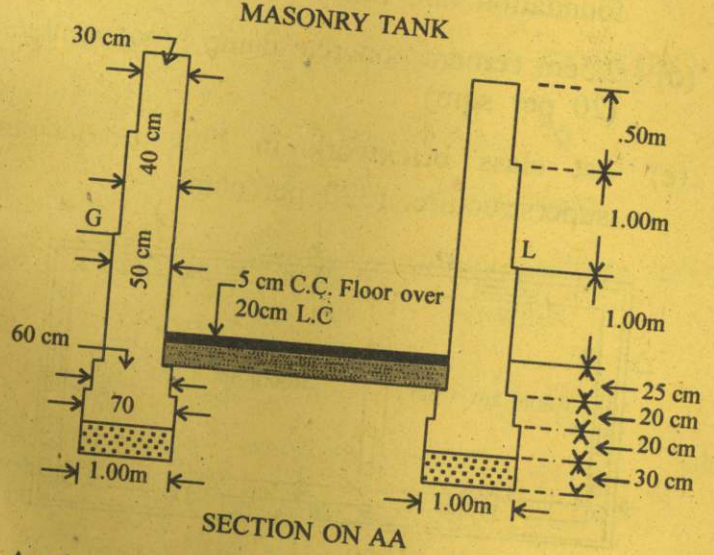
(f) 5 cm cement concrete 1:1.5:3 floor @ Rs. 55 per sqm.



3. Analyse the rate of the following items : 7.5×2=15

(a) Cement concrete of 1:2:4 in 1 cum unit, take 10 cum.

(b) Concrete 1:5:10 in foundation with brick ballast 40 mm thick gauge in 1 cum unit, take 10 cum.

4. Estimate the quantities of the following items of a two roomed building from the given drawing (Rates are given in bracket) 15

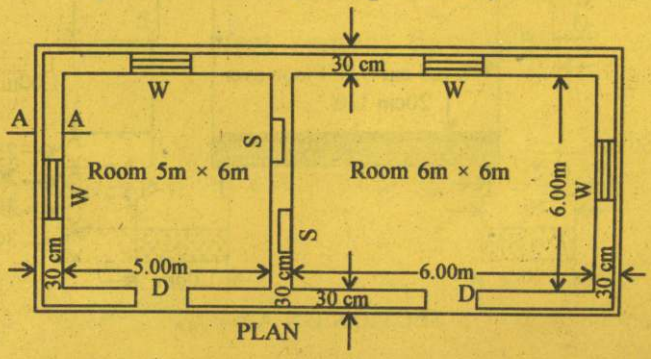
(a) Earthwork in excavation in foundation. (350 per % cum)

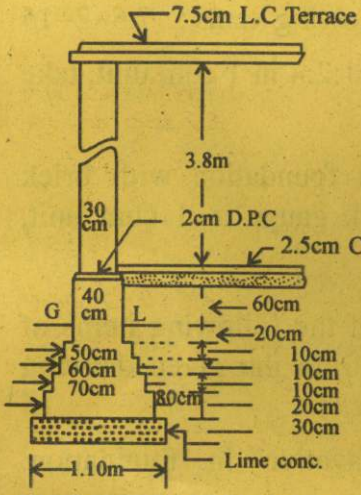
(b) Lime concrete in foundation. (220 per cum)

(c) 1st class brickwork in cement mortar 1:6 in foundation and plinth. (300 per cum)

(d) 2.5cm cement concrete damp proof course. (20 per sqm)

(e) 1st class brickwork in lime mortar in superstructure. (320 per cum)





All wals are of same section.

Lintels over doors, windows and shelves are 15cm thick R.B.

Doors D-1.20m × 2.10m

Windows W-1.00 × 1.50m

Shelves S-1.00m × 1.50m

CROSS SECTION OF WALL ON AA