Total No. of printed pages = 7

END SEMESTER EXAMINATION – 2019

Semester : 6th

Subject Code : CT-601

ESTIMATION AND COSTING

Full Marks – 70

Time – Three hours

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

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10

   (a) The unit of payment of earthwork is _____.

   (b) Work charge establishment is a % of _____.

   (c) Office expanse is a _____ cost.

   (d) 1 bag of cement = _____ cum.

   (e) Revised estimate prepared for _____ rates.

   (f) Earthwork may be either earth _____ or earth _____.

[Turn over

(g) Quantity of volume in earth work = _____ × length.

(h) In Prismatic formula method, quantity = ___.

(i) The volume of earthwork is computed from _____.

(j) Provision of contractor's profit in rate analysis is _____ of total cost.

2. Write true or false : 1×10=10

(a) Earthwork is an item of work.

(b) Detailed estimate is prepared is three stages.

(c) Complete estimate is a type of estimate.

(d) Unit of plaster work is sqm.

(e) Unit of floor work is cum.

(f) Centre line method is used for rate analysis.

(g) Rate analysis is done under two heads.

(h) Contractor's profit is considered as 15%.

(i) Mean section area method is done to calculate lime work.

(j) Specification is of two types.

3. Choose the correct answer : 1×5=5

(a) The dry volume of materials for 1 cum of wet volume for 100 sqm wall of 12 mm thickness is

(i) 1 cum (ii) 2 cum

(iii) 3 cum (iv) 4 cum

(b) The dry volume of materials for 1 cum of wet volume for 100 sqm wall of 20 mm thickness is

(i) 1 cum (ii) 2 cum

(iii) 3 cum (iv) 4 cum

(c) The dry volume of materials for 1 cum of wet volume for 100 sqm cement concrete floor of 25 mm thickness is

(i) 2.5 cum (ii) 2.75 cum

(iii) 4.125 cum (iv) 6.6 cum

(d) The dry volume of materials for 1 cum of wet volume for 100 sqm cement concrete floor of 40 mm thickness is

(i) 2.5 cum (ii) 2.75 cum

(iii) 4.125 cum (iv) 6.6 cum

(e) The dry volume of materials for 1 cum of wet volume for 100 sqm cement concrete floor damp proof course of 2.5 cm thickness is

(i) 2.5 cum (ii) 2.75 cum

(iii) 4.125 cum (iv) 6.6 cum

PART – B

Marks – 45

4. Reduced level of ground along the centre line of a proposed road from chainage 10 to chainage 20 is given below. The formation level at the 10th chainage is 107 and the road is in downward gradient of 1 in 150 upto the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width of the road is 10 metre and side slope of banking are 2 : 1. Length of chain is 30 metre. 15

Chainage	10	11	12	13	14
RL of ground	105	105.6	105.44	105.9	105.42
RL of formation	107				
Gradient	Downward 1 in 150				

Chainage	15	16	17	18	19	20
RL of ground	104.3	105	104.1	104.62	104	103.3
RL of formation						
Gradient	Downward 1 in 100					

Draw longitudinal section of the road and a typical cross section and prepare an estimate of earthwork at the rate of Rs. 275 per % cum.

5. Estimate the quantities of the following items of a two roomed building by centre line method from the given drawing. (Rates are given in bracket) 15

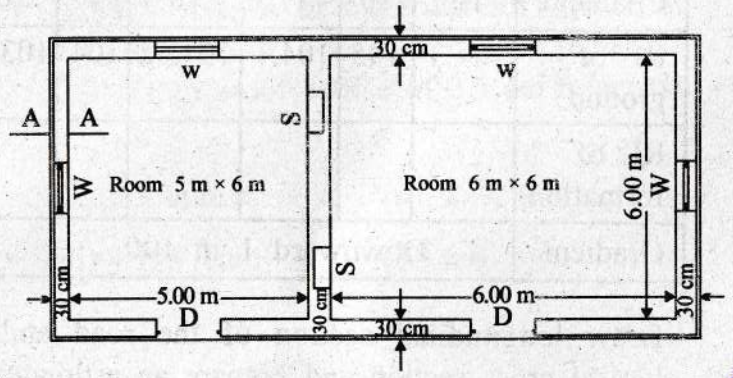
(a) Earthwork in excavation in foundation. (350 per % cum)

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

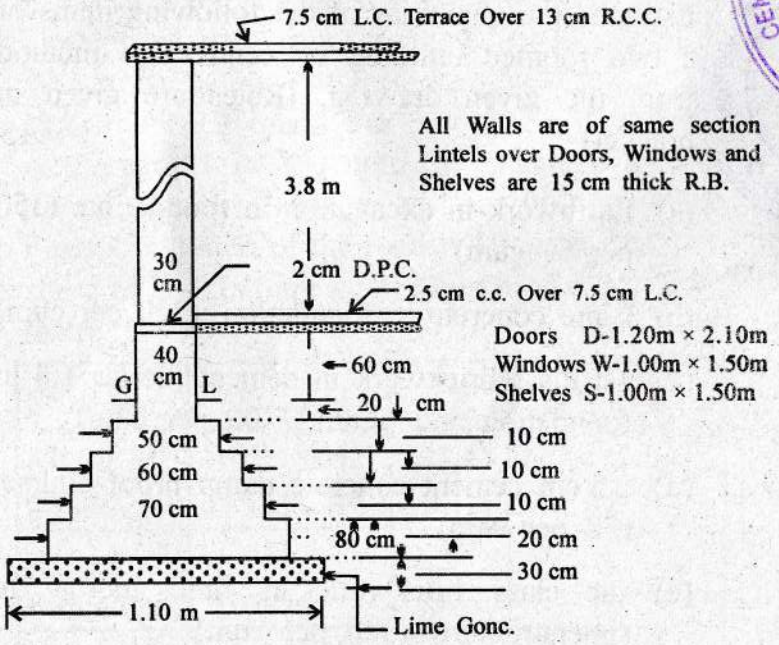
(c) 1st class brickwork in cement mortar 1:6 in foundation and plinth. (300 per cum)

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

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



PLAN



CROSS SECTION OF WALL ON AA.

Fig. 2-6

6. (a) Prepare an approximate estimate of building with total plinth area of all building is 800 sqm and from following data : 7

(i) Plinth area rate Rs. 4,500 per sqm

(ii) Cost of water supply @ 7.5% of cost of building

(iii) Cost of sanitary and electrical installation each @ 7.5% of cost of building

(iv) Cost of architectural features @ 1% of cost of building

(v) Cost of roads and lawns @ 5% of cost of building

(v) Cost of PS and contingencies @ 4% of cost of building

Determine total cost of building project.

(b) Analyse the rate of R.C.C work in beam, slabs etc. 1:2:4, unit 1 cum, take 10 cum. 8