Total No. of printed pages = 6

19/6th Sem/DCE 601

2022

ESTIMATION AND COSTING

Full Marks – 100

Time – Three hours

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

Answer the following questions :

1. Analyses the rate of 8+6+6=20

   (a) R.C.C. work in Beams, slabs etc. 1:1.5:3, unit 1 cu.m, take 10 cu.m.

   (b) 12 mm cement plastering 1:6, unit 1 sqm., take 100 sq.m.

   (c) 25 cm cement concrete floor 1:2:4, unit 1 sqm., take 100 sq.m.

2 (a) Define depreciation. Explain the methods of calculating depreciation. 2+8=10

   (b) In a block developments meeting you are required to prepare a preliminary estimate of

[Turn over

a school building for 650 students in order to assess the amount of fund. The following particulars are collected by you.

Carpet area required /student = 1.2 sqm., with an arch of corridor, veranda, lavatories etc. be 20% and for walls 15% to that of plinth area of the building. Consider plinth area rate @ Rs. 1100/sqm., water supply @ 5% of building cost, sanitation @ 6% of building cost. electrification @ 10% of building cost, approach road and boundary wall @ 3% of building cost, contingencies and supervision charges 5% and 2.5% respectively. 10

3. Prepare the estimate of the masonry platform from the given drawing and specification : 20

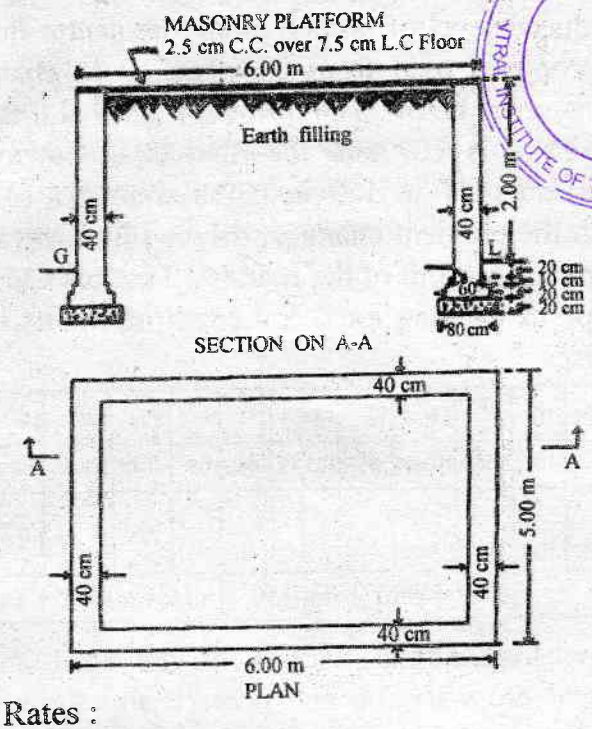
Specifications :

Foundation - Lime concrete.

Masonry - 1st class brickwork in cement mortar 1:6.

Wall finishing- Outside 12 mm cement plastered 1:6.

Flooring - 2.5 cm cement concrete over 7.5 cm lime concrete, over wall only 2.5 cm cement concrete.



Rates :

Earthwork in excavation @ Rs. 350 per % cu.m

Earthwork in filling @ Rs. 275 per % cu.m

Lime concrete in foundation @ Rs. 220 per cu.m

1st class brickwork in cement mortar @ Rs. 300 per cu.m

12 mm cement sand plaster @ Rs. 7 per sq.m

2.5 cm cement concrete 1:2:4 floor over and including 7.5 cm lime concrete @ Rs. 18.65 per sqm

2.5 cm cement concrete 1000;20;4 floor @ Rs. 18 sq.m.

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 metres and side slope of banking are 2:1. Length of chaine is 30 metres.

chainage	10	11	12	13	14	15	16	17	18	19	20
RL of	105	105.6	105.44	105.9	105.42	104.3	105	104.1	104.62	104	103.3
RL of formation	107										
Gradient		Downward 1 in 150					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 % cu.m.

20

5. Prepare a detailed estimate of part of a wall of a building from the given plan and section and general specifications. 20

General Specifications :

Foundation concrete shall be lime concrete.

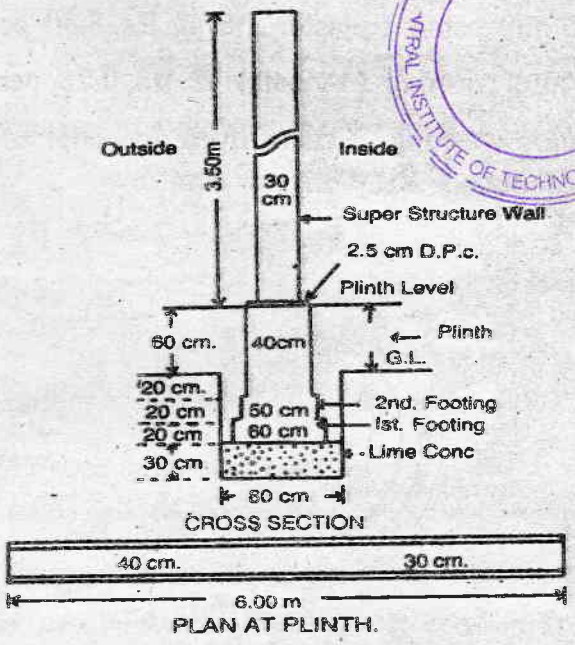
Foundation and plinth shall be of 1st class brickwork in lime mortar.

Damp proof course - 2.5 cm cement concrete 1:1.5:3 with water proofing compounds.

Superstructure-1st class brickwork in lime mortar.

Wall finishing- Inside wall 12 mm cement plastered 1:6 and white washed 3 coats.

Outside wall cement plastered 1:6 including 10 cm below ground level and finished with two coats of colour wash over one coat of white washing.



Rates :

Earthwork in excavation in foundation @ Rs. 350 per % cu.m.

Lime concrete in foundation @ Rs. 220 per cu.m.

1st class brickwork with white lime 1:2 in foundation and plinth @ Rs. 300 per cu.m.

2.5 cm thick cement concrete 1:1.5:3 damp proof course @ Rs. 20 per sqm.

1st class brickwork with white lime in superstructure @ Rs. 320 per cu.m.

12 mm cement plaster 1:6 @ Rs. 8.50 per sqm.

White washing (3 coats) @ Rs. 0.75 per sqm.

Color washing 2 coats over one coat of white washing @ Rs. 0.82 per sqm.