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53 (CE 701) ESCS

2021

ESTIMATION AND COSTING

Paper : CE 701

Full Marks : 100

Time : Three hours

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

1. Estimate the cost of earthwork for a portion of road for 400 meter length from the following data. Formation width of the road is 10 metre. Side slopes are 2:1 in banking, $1\frac{1}{2}$:1 in cutting. 20

Station	Distance (metre)	RL of Ground	RL of formation
25	1000	51	↑ 52
26	1040	50.9	↓ Downward gradient 1 in 200
27	1080	50.5	
28	1120	50.8	
29	1160	50.6	
30	1200	51.7	
31	1240	51.2	
32	1280	51.4	
33	1320	51.3	
34	1360	51	
35	1400	50.6	

Rates : Earthwork in banking @ 275 per % cum
Earthwork in cutting @ 350 per % cum.

Contd.

2. (a) Define depreciation. What are the methods of calculating depreciations?

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(b) The total cost of a new building is 500000.00. Calculate the depreciated cost of the building after 20 years by straight line method, if the scrap value is 50000, assuming life of the building is 80 years.

4

(c) Define valuation. What are the purposes of valuation? What are the methods of valuation?

2+4+4=10

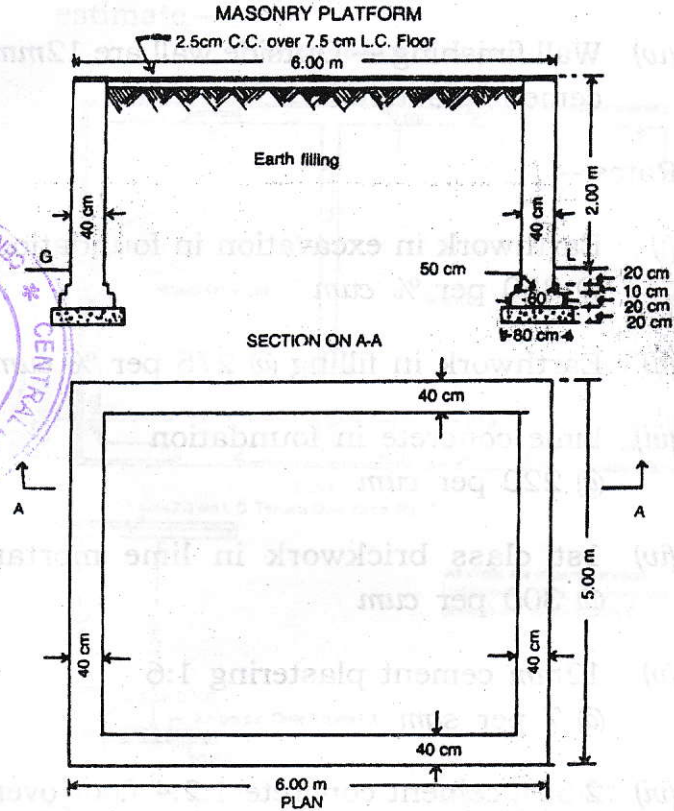
3. Analyse the rate of —

10+10=20

(a) Cement concrete 1:1.5:3, unit-1cum, take 10cum.

(b) 2.5cm cement concrete floor 1:1.5:3, unit 1sqm, take 100sqm.

4. Estimate the cost of masonry platform $6\text{m} \times 5\text{m}$ from the given drawing and specifications — 20



MASONRY WATER TANK

General specifications –

- (i) Foundation–Lime concrete
- (ii) Masonry–1st class brickwork in lime mortar

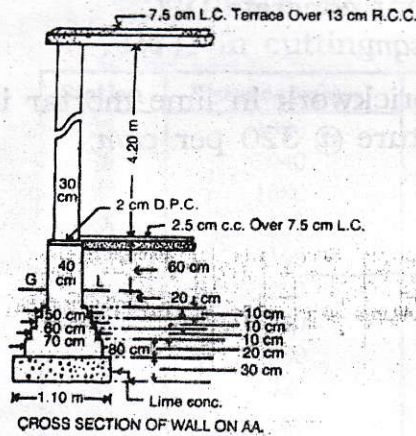
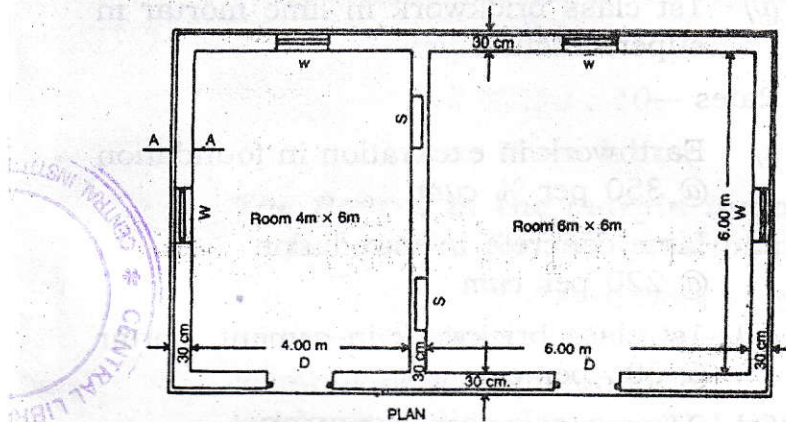
- (iii) Flooring - 2.5cm cement concrete over 7.5cm lime concrete, over wall only 2.5cm cement concrete
- (iv) Wall finishing — Outside wall are 12mm cement plastered.

Rates —

- (i) Earthwork in excavation in foundation @ 350 per % cum
- (ii) Earthwork in filling @ 275 per % cum
- (iii) Lime concrete in foundation @ 220 per cum
- (iv) 1st class brickwork in lime mortar @ 300 per cum
- (v) 12mm cement plastering 1:6 @ 7 per sqm
- (vi) 2.5cm cement concrete 1:2:4 floor over and including 7.5cm lime concrete @ 18.65 per sqm
- (vii) 2.5cm cement concrete 1:2:4 floor @ 18 per sqm

5. Estimate the quantities of the following items of a two roomed building from the given plan and section and prepare a detailed estimate – 20

TWO ROOMED BUILDING



All Walls are of same section
Lintels over Doors, Windows and
Shelves are 15 cm thick R.B.

Doors D-1.20 m x 2.10 m
Windows W-1.00 x 1.50 m
Shelves S-1.00 m x 1.50 m

- (i) Earthwork in excavation in foundation
(ii) Lime concrete in foundation

- (iii) 1st class brickwork in cement mortar
1:6 in foundation and plinth
- (iv) 2.5cm cement concrete damp proof
course and
- (v) 1st class brickwork in lime mortar in
superstructure

Rates —

- (i) Earthwork in excavation in foundation
@ 350 per % *cum*
- (ii) Lime concrete in foundation
@ 220 per *cum*
- (iii) 1st class brickwork in cement mortar
@ 300 per *cum*
- (iv) 2.5cm cement concrete DPC
@ 20 per *sqm*
- (v) 1st class brickwork in lime mortar in
superstructure @ 320 per *cum*.

