

2025

ESTIMATION AND COSTING

Full Marks: 100

Time: Three hours

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

Answer all five questions.

- 1) (a) Define valuation. What are the purposes of valuation? **2+6=8**
(b) Define year's purchase. Calculate year's purchase for 6% rate of interest? **2+3=5**
(c) Analyse the rate of 20 mm cement plastering in 1:6 with coarse sand- Unit 1 sqm., take 100 sqm. **7**
- 2) Prepare the estimate of the masonry platform 6mx5m from the given drawing and specification **20**

Specifications

Foundation – Lime concrete.

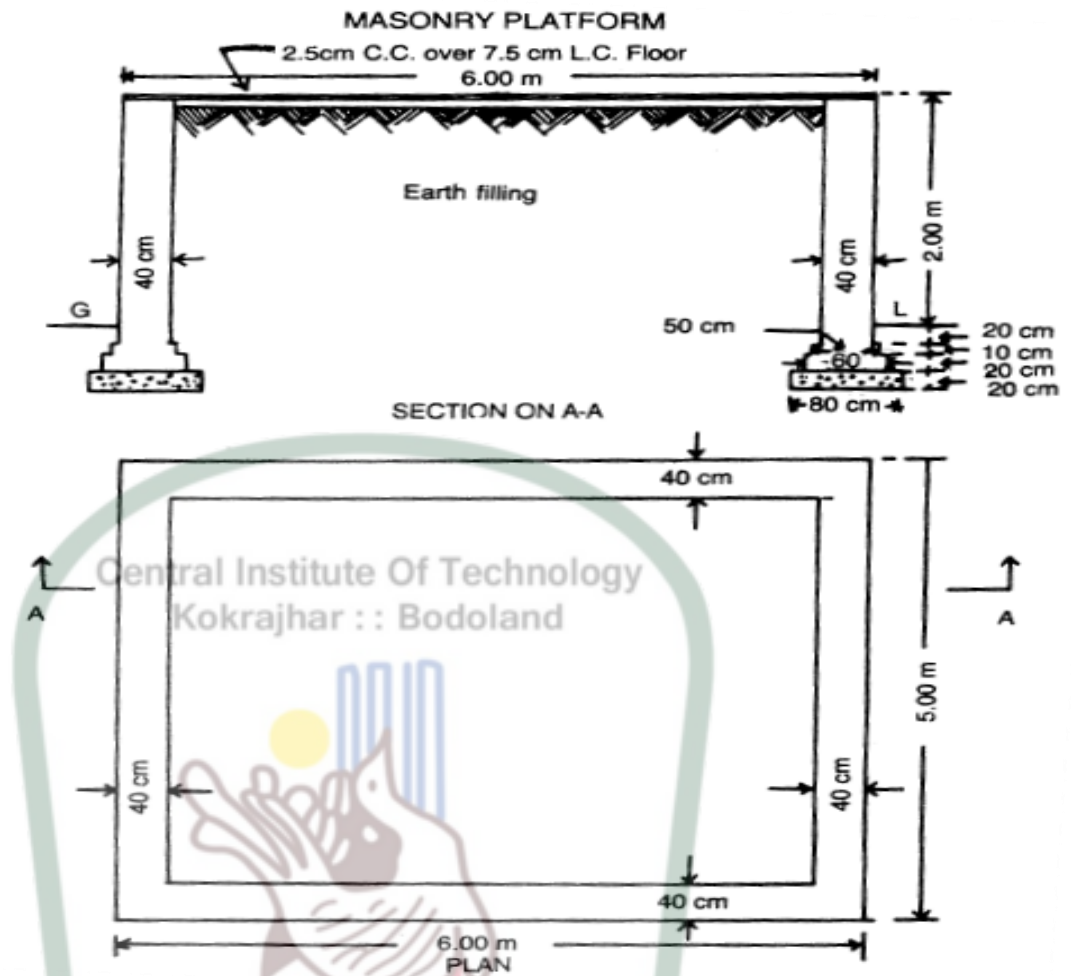
Masonry- 1st class brickwork in cement mortar 1:6

Wall finishing- outside walls are 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 with neat cement finishing.

Rates:

- i) Earthwork in excavation @ Rs.350.00 per % cum
ii) Earthwork in filling @ Rs. 275.00 per % cum
iii) Lime concrete in foundation and floor @ Rs.220.00 per cum
iv) 1st class brickwork in 1:6 cement mortar @ Rs. 320.00 per cum
v) 12 mm cement plastering 1:6 with coarse sand @ Rs. 7.00 per sqm
vi) 2.5 cm cement concrete 1:2:4 floor over and including 7.5 cm lime concrete @ Rs.18.65 per sqm
vii) 2.5 cm cement concrete 1:2:4 floor @ Rs. 18.00 per sqm.



- 3) 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 chaine is 30 metre.

20

chainage	10	11	12	13	14	15	16	17	18	19	20
RL of ground	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					

- 4) (a) Prepare a preliminary estimate of a 5 storied office building having a carpet area of 2500 sqm. for obtaining administrative approval. It may be assumed that 30% of built up area will take up by corridors, verandah, lavatories, staircases etc. and 10% of built up area will be occupied by walls.

10

- Plinth area rate = 1000 per sqm.
- Deep foundation at site = 1% of building cost
- Special architectural treatment = 0.5% of building area
- Water supply and sanitary installation = 6% of building area

- v) Electrical installation= 12.5% of building cost
- vi) Other services= 5% of building cost
- vii) Contingencies= 2.5%
- viii) Supervision charges= 8%

(b) Analyse the rate of R.C.C work for a column considering 2% steel for 1:1.5:3, unit 1 cum., take 10 cum. 10

5) Prepare a detailed estimate for the following items of a two roomed building from the given drawing by **centre line method** (Rates are given in bracket) 20

- (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)

