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53 (CE 701) ESCS

2021
(Held in 2022)



ESTIMATION AND COSTING

Paper : CE 701

Full Marks : 100

Time : Three hours

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

Answer **any five** questions.

1. (a) Explain different types of estimate. Describe the procedure of preparing detailed estimate. 10
- (b) What is schedule of bars ? Calculate the total additional length for 45° as well as 30° cranked or bent up bar. 5
- (c) Explain the methods of calculating the earthwork quantity. 5

Contd.

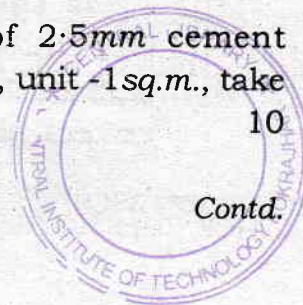
3. Reduced level of ground along the centre line of a proposed road from chainage 10 to chainage 20 are given below. The formation level at the 10th chainage, is 107 and the road is in downward gradient of 1 in 150 upto the chainage 14 and then the gradient changes to 1 in 100 downward. Formation width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

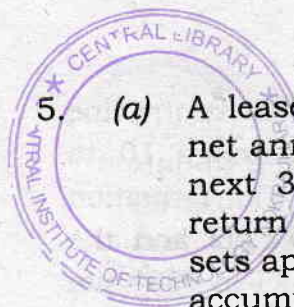
20

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.*

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 gradient			→	← downward gradient			→	downward gradient			→
		1 in 150				1 in 100				1 in 100			

4. (a) Analyse the rate of RCC work in beam 1:2:4, unit -1*cum.*, take -10*cum.* 10
- (b) Analyse the rate of 2.5mm cement concrete floor 1:1.5:3, unit -1*sq.m.*, take -100*sq.m.* 10





5. (a) A leasehold property is to produce a net annual income of Rs.12,000.00 for next 30 years. The owner expects a return of 8% on his capital and also sets apart a sinking fund instalment to accumulate at 6% annually to replace the capital. Determine the value of property. 10
- (b) An owner has installed an air conditioner at a cost of Rs.4,000. If the life of the air conditioner is 10 years, calculate the amount which he should set aside annually as sinking fund to accumulate the above cost at 5% compound interest. 10

6. Estimate the cost of a masonry platform $6m \times 5m$ from the given drawing and specification — 20

General specification —

- (i) Foundation - lime concrete
- (ii) Masonry - 1st class brickwork in lime mortar
- (iii) Floor - 2.5cm cement concrete over 7.5cm lime concrete, over wall 2.5cm cement concrete
- (iv) Wall finishing - outside walls are 12mm cement plastered 1:6.

Rates -

- (i) Earthwork in excavation in foundation @ Rs.350 per % cum
- (ii) Earthwork in filling @ Rs.275 per % cum
- (iii) Lime concrete in foundation @ Rs.220 per cum
- (iv) 1st class brickwork in lime mortar @ Rs.300 per cum
- (v) 12mm cement sand plastering 1:6 @ Rs.7 per sqm.
- (vi) 2.5cm cement concrete is : 2:4 floor over and including 7.5mm lime concrete @ Rs.19 per sqm.
- (vii) 2.5cm cement concrete 1:2:4 floor @ Rs.18 per sqm.

