

Printed Pages – 6

Roll No. :

C020613(020)

B. Tech. (Sixth Semester) Examination, April-May 2022

(Scheme : AICTE)

**ENGINEERING ECONOMICS, ESTIMATING
and COSTING**

Time Allowed : Three hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from part (b), (c) and (d).

Unit-I

1. (a) Define Estimation. 2
- (b) Describe different types of estimate. 9
- (c) Write short note on : 3 × 3 = 9

[2]

- (i) Contingencies
 - (ii) Work charge establishment
 - (iii) Layout plan
- (d) Explain the purpose of estimation. 9

Unit-II

2. (a) Explain detailed estimate. 2
- (b) Figure 2.1 represents the plan and section of the foundation wall (after removal of earth) of a building internally measuring 3 m × 2.5 m.

Estimate the quantities of

- (i) Earthwork in excavation in foundation
- (ii) lime concrete in foundation,
- (iii) Brickwork in foundation and plinth. 9

(Figure 2.1 on page no. 6)

- (c) Estimate the quantities and cost of earth was for a road between two stations A to B with the following data :

Width of the road 10 meter at formation surface and size slope 2 : 1 Rate for earthwork in banking and cutting may be taken as rupees 10 per cubic

C020613(020)

[3]

meter including leap up to 150 meter with a condition that portion of earthwork available from cutting is to be utilized for banking within the same lead of 150 meter the data of field book for the portion of road has below : 9

Chainage	0	1	2	3	4	5	6
Reduced level	123.90	125.00	124.60	122.90	121.60	121.00	120.40
Formation level	123.20	123.60	124.00	123.60	123.20	122.80	122.80

1 chain = 30 m

- (d) Determine the quantities of earthwork for the portion of a road between chainages 50 and 60 from the following data, lengths being measured with a standard 20 m chain. 9

Chainage	Ground level
50	131.1
51	131.2
52	130.9
53	131.2
54	130.8
55	130.7
56	130.6

C020613(020)

PTO

[4]

57	130.4
58	129.1
59	129.5
60	129.7

The formation level at chainage 50 is 130.0 and a road is in a raising gradient of 1 : 100, the width of formation is 10 m and the side slope 1.5 : 1 in embankment and 1 : 1 in cutting. The lateral slope of the ground may be assumed as level. Calculate also the cost of this earthwork in bank and the cutting at prevailing rate.

Unit-III

3. (a) Define Rate Analysis. 2
- (b) Calculate the rate of cement concrete 1 : 5 : 10 per cubic meter with graded brick ballast (jhama chips) 40 mm down in foundation 9
- (c) Calculate the rate of R.C.C. works 1:1.5:3 per cubic meter for beam with 2.0% of steel. 9
- (d) Calculate the rate of first class brick work per cubic meter in lime and surkhi mortar (1:3 in foundation and plinth.) 9

[5]

Unit-IV

4. (a) Define Security Money. 2
- (b) Explain contract system and condition of contract. 9
- (c) What is Tender? Explain tender notice. 9
- (d) Explain the procedure for invitation of tender for design and construction. 9

Unit-V

5. (a) What is Valuation? 2
- (b) Explain purpose of valuation. 9
- (c) Write short note on : 3 × 3 = 9
- (i) Depreciation
- (ii) Budget
- (iii) Percentage breakup of cost
- (d) Explain cost control techniques. 9

