

Estimation & Costing (DI04006021)

Lecture 16: Unit Quantity Method: Numericals

Numerical Problem 1

Problem Statement

Estimate the cost of a compound wall of length 500 m. The detailed cost analysis for 1 running meter of this wall is:

- Excavation: Rs 200
- Foundation Concrete: Rs 500
- Brickwork: Rs 1500
- Plastering & Painting: Rs 300

Solution:

Cost per running meter = $200 + 500 + 1500 + 300 = \text{Rs } 2500$

Total Length = 500 m

Total Cost = $500 \times 2500 = \text{Rs } 12,50,000$.

Numerical Problem 2

Problem Statement

A canal is to be constructed for 10 km. The cost of earthwork, lining, and finishing for 1 km is estimated at Rs 20 Lakhs. Additional bridges cost Rs 5 Lakhs per km on average. Calculate the total cost.

Solution:

Unit cost per km = Cost of canal works + Cost of bridges

Unit cost per km = 20 Lakhs + 5 Lakhs = 25 Lakhs / km.

Total Length = 10 km.

Total Estimated Cost = $10 \times 25 = 250$ Lakhs = Rs 2.5 Crores.

Advantages and Limitations

Advantages

Very fast once unit cost is known.

Useful for linear projects like roads, railways, pipelines.

Easy to explain to laypersons.

Limitations

Assumes uniformity throughout the project.

Not suitable for complex, asymmetrical buildings.

Topography variations make it inaccurate.
