

Faculty of Engineering

End Semester Examination May 2025

CE3CO32 Quantity Surveying & Estimation

Programme	:	B.Tech.	Branch/Specialisation	:	CE
Duration	:	3 hours	Maximum Marks	:	60

Note: All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary.

Notations and symbols have their usual meaning.

Section 1 (Answer all question(s))				Marks	CO	BL
Q1. What does "BOQ" stand for in estimation?				1	1	1
<input checked="" type="radio"/> Bill of Quantities						
<input type="radio"/> Budget of Quantity						
Q2. What is the purpose of contingencies in an estimate?				1	2	2
<input checked="" type="radio"/> To cover unexpected costs						
<input type="radio"/> To reduce project duration						
Q3. In brickwork estimation, the unit of measurement is usually in:				1	1	1
<input type="radio"/> Square meters						
<input checked="" type="radio"/> Cubic meters						
<input type="radio"/> Linear meters						
Q4. In a detailed estimate, what document records the measurement of each work item?				1	1	1
<input type="radio"/> Abstract sheet						
<input checked="" type="radio"/> Measurement sheet						
Q5. What does "depreciation" mean in valuation?				1	2	2
<input type="radio"/> Increase in property value						
<input checked="" type="radio"/> Reduction in property value over time						
<input type="radio"/> Fixed rental income						
Q6. What does "salvage value" represent?				1	2	2
<input type="radio"/> Initial construction cost						
<input checked="" type="radio"/> Residual value after use						
Q7. What is a "pre-bid conference"?				1	2	2
<input type="radio"/> Final project meeting						
<input checked="" type="radio"/> Meeting before submission of bids						
Q8. What is "E-tendering"?				1	1	1
<input type="radio"/> Manual tender submission						
<input checked="" type="radio"/> Electronic tendering process						
<input type="radio"/> Emergency tendering						
Q9. Under the Indian Contract Act (1872), a valid contract requires:				1	2	1
<input type="radio"/> Only an offer						
<input checked="" type="radio"/> Offer, acceptance, and consideration						
<input type="radio"/> Only acceptance						
<input type="radio"/> Only consideration						

Q10. "Defect liability period" refers to:

1 2 2

- Time to complete the project
- Time allowed to rectify defects after completion
- Time to submit tenders
- Time to finalize payments

Section 2 (Answer all question(s))

Marks CO BL

Q11. What is the purpose of preparing a preliminary estimate?

2 2 2

Rubric	Marks
For correct explanation of purpose of preparing a preliminary estimate give 2 marks	2

Q12. Describe the role of the Schedule of Rates (SOR) in estimation.

3 2 2

Rubric	Marks
For each correct role give one mark. (maximum 3 marks)	3

Q13. (a) Explain the different types of estimates and their applications in civil engineering.

5 3 3

Rubric	Marks
Correct Types explanation- 3 Marks	5
Correct Applications-2 Marks	

(OR)

(b) Describe the terms work charged establishment and centage charges.

Rubric	Marks
a) Work Charged Establishment-Definition- 2.5 Marks	5
b) Centage Charges-Definition- 2.5 Marks	

Section 3 (Answer all question(s))

Marks CO BL

Q14. What is the importance of lead and lift in earthwork estimation?

2 1 1

Rubric	Marks
lead-Definition- 1 Marks	2
lift -Definition-1 Marks	

Q15. (a) Calculate the quantity of earthwork for a road section with the following data:

8 3 3

Chainage (m)	0	40	80	120	160	200
G.L. (m)	85.0	84.5	84.0	83.8	83.5	83.2

- Formation width: 12.0 m
- The formation level at 80m chainage is 84.0 m, and the road has an upward slope of 5 cm in 20 m.
- Side slope for banking: 2:1 (H:V)
- Side slope for cutting: 1.5:1 (H:V)

Form the data in tabular form and calculate the quantity.

Rubric	Marks
Correct table form- 1 Marks	8
Correct formation level calculation- 2.5 Marks	
Correct cuttings/filling value- 2.5 Marks	
Correct cross sectional area calculation- 1 Marks	
Correct earth work calculation (1479.6 m ³)- 1 Marks	

(OR)

- (b)** Estimate the quantity of concrete and formwork required for an RCC beam of dimensions 5 m long, 0.3 m wide, and 0.5 m deep. Also, calculate the cost if the rate of concrete is Rs. 4000/cu. m. and formwork is Rs. 500/sq. m.

Rubric	Marks
Concrete Quantity: 0.75 cu. m. - 2 Marks	8
Concrete Cost: Rs. 3000- 2 Marks	
Formwork Area: 8 sq. m.- 2 Marks	
Formwork Cost: Rs. 4000- 2 Marks	

Section 4 (Answer all question(s))

Q16. Differentiate between freehold and leasehold property.

Marks CO BL

2 2 2

Rubric	Marks
One mark for correct definition of freehold property -1 Marks	2
one mark for correct definition of leasehold property -1 Marks	

Q17. What factors affect the value of a property?

3 2 2

Rubric	Marks
For each correct point award one mark (maximum 3 marks)	3

Q18. (a) A commercial building has a plinth area of 200 m² and is located in a prime area where the cost of land is ₹50,000 per m². The construction cost of the building is ₹20,000 per m². The expected life of the building is 60 years, and the scrap value is 10% of the original construction cost. The annual maintenance cost is 1% of the construction cost. The prevailing bank interest rate is 8% per annum, and the return on land investment is considered 6% per annum. Calculate total capital cost of the property and total annual rent that should be fixed for the building.

Rubric	Marks
Total Capital Cost: ₹1,40,00,000 - 2.5 Marks	5
Total Annual Rent to be Fixed: ₹10,20,000 - 2.5 Marks	

(OR)

- (b)** Define the terms Fair value, Market value, Book value, Distressed value and Sentimental value.

Rubric	Marks
Fair Value-Definition- 1 Marks	5
Market Value-Definition- 1 Marks	
Book Value-Definition- 1 Marks	
Distressed Value-Definition- 1 Marks	
Sentimental Value-Definition- 1 Marks	

Section 5 (Answer all question(s))

Marks CO BL

Q19. What does "qualitative evaluation" mean in tendering?

2 2 2

Rubric	Marks
definition	2

Q20. What are the key components of a tender document?

3 2 2

Rubric	Marks
Key Components 1 mark for each	3

Q21. (a) Describe the terms pre & post qualification of contractor and global tendering.

5 4 4

Rubric	Marks
Pre & Post Qualification of Contractor-Description-2.5 Marks	5
Global Tendering-Description-2.5 Marks	

(OR)

- (b)** Differentiate between single bid, two bid, and three bid systems in tendering, highlighting their applications.

Rubric	Marks
Correct difference between single bid, two bid, and three bid systems - 3 Marks	5
Application of systems- 3 Marks	

Section 6 (Answer any 2 question(s))

Marks CO BL

Q22. Explain the terms Running account bill and Liquidated damage.

5 3 3

Rubric	Marks
A) Running Account -Definition - 2.5 Marks B)Liquidated Damage-Definition- 2.5 Marks	5

Q23. Elaborate on the concept of defect liability period and its significance.

5 3 3

Rubric	Marks
Definition/concept - 2.5 Marks Significance- 2.5 Marks	5

Q24. Describe qualities and powers of an arbitrator.

5 3 3

Rubric	Marks
qualities of Arbitrator - 2.5 Marks Powers of Arbitrator- 2.5 Marks	5
