

GUJARAT TECHNOLOGICAL UNIVERSITY

BE-7 SEMESTER – OLD PAPER – S22 TO S25 – QUESTION BANK

Subject Name & Code:

Engineering Economics, Estimation and Costing- 3170615

Unit 1: Introduction to Engineering Economics

Repeated Questions:

1. **Explain the concept of Time Value of Money.**
 - Appeared in: S22 (Q1b, 04 marks), S23 (Q2c OR, 07 marks), W24 (Q3c OR, 07 marks)
2. **Define Break-even point. Draw a break-even chart and explain its components/assumptions.**
 - Appeared in: S24 (Q2c, 07 marks), W22 (Q2c, 07 marks)
3. **Explain project cash flow diagram with factors affecting it.**
 - Appeared in: W22 (Q2b, 04 marks), W23 (Q2a, 03 marks), S25 (Q2a, 03 marks)
4. **Differentiate between technical efficiency and economic efficiency by giving examples.**
 - Appeared in: S24 (Q2a, 03 marks)

Other Important Questions:

5. **Write the factors influencing supply and demand of a product.**
 - Appeared in: S22 (Q1a, 03 marks)
6. **Define the following terms: Cost, Price, Spot Item, Prime Cost, Provisional Quantity, Salvage value, Scrap value.**
 - Appeared in: S22 (Q1c, 07 marks)
7. **A contractor takes a loan of Rs. 5,00,000 for purchase of construction equipment. If the rate of interest is 10% and he wishes to repay the loan in 10 yearly installments, find out the value of the installment.**
 - Appeared in: W22 (Q2a, 03 marks) *[Numerical]*
8. **Discuss the evaluation of public projects.**
 - Appeared in: W22 (Q2c OR, 07 marks), W23 (Q2c OR, 07 marks), S25 (Q2c, 07 marks)
9. **Explain the effect of taxation on the comparison of alternatives with a suitable example.**
 - Appeared in: W23 (Q2c, 07 marks), S25 (Q2c OR, 07 marks)
10. **Explain the effect of inflation on cash flow.**

- Appeared in: W24 (Q2a, 03 marks)

11. Define the terms: Value, Cost, Price, Monopoly value, Potential value, Accommodation value, Distress value.

- Appeared in: W24 (Q2c, 07 marks)

12. Write a short note on Benefit-Cost Ratio.

- Appeared in: S24 (Q2c OR, 07 marks)

13. Write a short note on Cash flow diagram.

- Appeared in: S24 (Q2c OR, 07 marks)

14. Draw a Break-even chart. Also, explain the advantages and limitations of break-even analysis.

- Appeared in: S23 (Q1b, 04 marks)

Unit 2: Estimation

Repeated Questions:

1. **What are the types of estimates? Explain any one in detail. / Enumerate and discuss various types of estimates.**
 - Appeared in: W22 (Q1b, 04 marks), S25 (Q2b, 04 marks), W24 (Q1b, 04 marks)
2. **Give rules of deductions in plastering and pointing work.**
 - Appeared in: S24 (Q2b, 04 marks), W23 (Q2b, 04 marks), S22 (Q2b, 04 marks)
3. **What are the essential qualities of a good estimator?**
 - Appeared in: W23 (Q1a, 03 marks), S25 (Q1a, 03 marks)
4. **Differentiate between Estimating and Valuation.**
 - Appeared in: S24 (Q5a, 03 marks), S22 (Q5a, 03 marks), S25 (Q5b OR, 04 marks), W23 (Q5b OR, 04 marks)

Other Important Questions:

5. **What are the reasons for the actual cost exceeding the estimated cost?**
 - Appeared in: W22 (Q1a, 03 marks)
6. **Give the purposes of a detailed estimate.**
 - Appeared in: S24 (Q1a, 03 marks)
7. **Write a note on the following: (1) Provisional sum (2) Contingencies.**
 - Appeared in: W23 (Q1b, 04 marks), S25 (Q1b, 04 marks), W24 (Q2b, 04 marks)
8. **Write a note on the following: (1) Work charge establishment (2) Prime cost.**
 - Appeared in: S24 (Q1b, 04 marks), W24 (Q2b, 04 marks)
9. **Differentiate between revised estimate & supplementary estimate.**
 - Appeared in: S23 (Q2a, 03 marks)
10. **Write how the approximate cost of construction can be calculated by using the service unit method. Also, write service units of various types of construction.**
 - Appeared in: S22 (Q2a, 03 marks), S23 (Q2c, 07 marks)
11. **State units of measurement of the following items: Random Rubble Masonry, Iron grill in windows, Skirting, Brick bats, Boundary (wire) fencing, Brick Jalli-work.**
 - Appeared in: W24 (Q1a, 03 marks)
12. **Give the rules of deduction of whitewashing & plaster work.**
 - Appeared in: S23 (Q2b, 04 marks)
13. **Write a short note on Contingency.**
 - Appeared in: S23 (Q3a OR, 03 marks)

14. Write a short note on Prime cost and Day work.

- Appeared in: W24 (Q2c OR, 07 marks)

15. Write a short note on Provisional quantities.

- Appeared in: W24 (Q2c OR, 07 marks)

Numerical Questions from Drawing (Repeated Concept):

- **Determine the quantity of the following items from the given drawing of a residential building:**
 - (1) Earthwork in excavation for foundation.
 - (2) P.C.C / B.B.C.C / Foundation Concrete (in specified ratio).
 - (3) Brick Masonry work up to plinth level in C.M. (specified ratio).
 - Appeared in: S24 (Q1c, 07 marks), W22 (Q1c, 07 marks), W23 (Q1c, 07 marks), S25 (Q1c, 07 marks), W24 (Q1c, 07 marks), S22 (Q2c, 07 marks), S23 (Q5c, 07 marks)

Unit 3: Specifications

Repeated Questions:

1. **Define Specification. Give the purposes/objectives/importance of specification.**
 - Appeared in: S23 (Q3a, 03 marks), S22 (Q3a OR, 03 marks), W22 (Q3a, 03 marks), W23 (Q3a OR, 03 marks), S25 (Q3a, 03 marks), W24 (Q4a, 03 marks)
2. **What are the principles/essential principles of writing good specifications?**
 - Appeared in: S23 (Q1c, 07 marks), S22 (Q3a, 03 marks), S25 (Q3b OR, 04 marks)
3. **Differentiate between brief specifications and detailed specifications.**
 - Appeared in: S24 (Q3a OR, 03 marks), S22 (Q3b OR, 04 marks)
4. **Write detailed specifications for First Class Brickwork in CM (1:6).**
 - Appeared in: S25 (Q3b, 04 marks), W23 (Q3b, 04 marks), W24 (Q4c OR, 07 marks)
5. **Write detailed specifications for Cement Concrete in foundation (1:4:8) / RCC (1:2:4).**
 - Appeared in: S24 (Q3b, 04 marks), W22 (Q3b, 04 marks)

Other Important Questions:

6. **Write the detailed specification for first-class brick masonry in C.M. (1:4).**
 - Appeared in: S23 (Q3c, 07 marks)
7. **Write detailed specifications for earthwork in excavation in foundation.**
 - Appeared in: W22 (Q3b OR, 04 marks)
8. **Write specification for R.C.C. work in 1:1.5:3 for slab.**
 - Appeared in: S22 (Q3c, 07 marks)
9. **What care should be taken while drafting specifications?**
 - Appeared in: W24 (Q4a OR, 03 marks)

Unit 4: Rate Analysis and Market Survey

Repeated Questions:

1. **Define Rate Analysis. State factors affecting rate analysis.**
 - Appeared in: S24 (Q4a, 03 marks), W22 (Q4a, 03 marks), W24 (Q4b, 04 marks)
2. **Calculate the material required for Cement Concrete (1:4:8) for 10 m³.**
 - Appeared in: S24 (Q4b, 04 marks), S25 (Q4b OR, 04 marks)
3. **Calculate the material required for 12 mm / 15 mm / 20 mm thick cement plaster (C.M. 1:4 or 1:3) for 100 m².**
 - Appeared in: S24 (Q4b OR, 04 marks), S23 (Q3b OR, 04 marks), W22 (Q4b, 04 marks), W23 (Q4b OR, 04 marks)
4. **Calculate the material required for 1st class brickwork in CM (1:6) for 10 m³.**
 - Appeared in: S25 (Q4b, 04 marks), W23 (Q4b, 04 marks)
5. **What is meant by Task work or Out-turn of work? How is it calculated?**
 - Appeared in: S24 (Q4a OR, 03 marks), S23 (Q4a OR, 03 marks), S25 (Q4a, 03 marks)

Other Important Questions:

6. **Write a short note on Schedule of Rates (S.O.R.).**
 - Appeared in: S22 (Q4a OR, 03 marks), S25 (Q4a OR, 03 marks)
7. **Work out rate analysis for 15 mm thick cement plaster in C.M. 1:3.**
 - Appeared in: S22 (Q4c OR, 07 marks)
8. **Give the current market rates of the following: Cement, Sand, Aggregate, Bricks, Mild steel bars.**
 - Appeared in: S22 (Q4c, 07 marks), W22 (Q4a OR, 03 marks), W23 (Q5a OR, 03 marks)
9. **Give rate analysis of first-class brickwork in superstructure in C.M. 1:6 for 10m³.**
 - Appeared in: W22 (Q4b OR, 04 marks)
10. **Compute the material Required for 75 Cu.M cement concrete (1:2:4).**
 - Appeared in: W24 (Q4b OR, 04 marks)
11. **Explain the calculation of materials required for single coat and double coat Plastering.**
 - Appeared in: W24 (Q4c, 07 marks)

Unit 5: Tender and Tender Notice

Repeated Questions:

1. **Define Tender. Enlist different types of tender.**
 - Appeared in: W24 (Q5a, 03 marks)
2. **Define Tender and draft a typical tender notice for civil engineering works. / Draft a tender notice for construction of a School Building.**
 - Appeared in: S25 (Q3c, 07 marks), W23 (Q3c, 07 marks), W24 (Q5c, 07 marks)
3. **Define Tender and discuss important points to be included in the tender notice.**
 - Appeared in: W22 (Q4c OR, 07 marks)

Other Important Questions:

4. **Enlist the different types of tender. Explain any public tender with advantages and disadvantages.**
 - Appeared in: S23 (Q4c OR, 07 marks)
5. **What are the benefits of the E-tendering process?**
 - Appeared in: S23 (Q4b OR, 04 marks)
6. **Describe the procedure of scrutiny of Tenders. / Discuss various reasons for rejection of the lowest tender.**
 - Appeared in: S24 (Q4c, 07 marks), W22 (Q4b, 04 marks), W22 (Q5c, 07 marks)
7. **Explain Revocation of Tender.**
 - Appeared in: W24 (Q5b, 04 marks)
8. **Differentiate between Earnest Money Deposit (EMD) & Security Deposit (SD).**
 - Appeared in: S23 (Q4b, 04 marks), W22 (Q5c OR, 07 marks)

Unit 6: Contracts

Repeated Questions:

1. **Define Contract. What are the essential requirements / legal requirements of a valid contract?**
 - Appeared in: S23 (Q4a, 03 marks), S22 (Q3b, 04 marks)
2. **What are the types of contracts? Describe them with their advantages and disadvantages.**
 - Appeared in: S24 (Q3c OR, 07 marks), S25 (Q4c, 07 marks), W23 (Q4c, 07 marks), S23 (Q4c, 07 marks)
3. **Describe the various reasons for termination of contract.**
 - Appeared in: S24 (Q4c OR, 07 marks), W23 (Q4c OR, 07 marks), W24 (Q5c OR, 07 marks)
4. **Write a note on: Liquidated damages and Unliquidated damages.**
 - Appeared in: S25 (Q3c OR, 07 marks), W23 (Q3c OR, 07 marks), W24 (Q5b OR, 04 marks)

Other Important Questions:

5. **What is meant by an unbalanced tender? What are the purposes of filing an unbalanced tender? Explain, giving an example.**
 - Appeared in: S24 (Q3c, 07 marks)
6. **Explain Lump sum contract with advantages and disadvantages.**
 - Appeared in: S23 (Q4c, 07 marks)
7. **Define contract. List different types of contracts and explain percentage rate contract.**
 - Appeared in: W22 (Q4c, 07 marks)
8. **Distinguish between Promise, Agreement & Contract.**
 - Appeared in: W24 (Q5a OR, 03 marks)

Unit 7: Valuation

Repeated Questions:

1. **Define/Differentiate between Depreciation and Obsolescence.**
 - Appeared in: S23 (Q5a OR, 03 marks), S22 (Q5b OR, 04 marks), W23 (Q5b OR, 04 marks)
2. **Differentiate between Freehold property and Leasehold property.**
 - Appeared in: S24 (Q5a OR, 03 marks), S23 (Q5b OR, 04 marks), W24 (Q2c OR, 03 marks)
3. **What is Depreciation? Explain various methods of calculating depreciation.**
 - Appeared in: S25 (Q4c OR, 07 marks), W23 (Q5c OR, 07 marks), S22 (Q5c, 07 marks)
4. **Define/Distinguish between the terms: Scrap value and Salvage value.**
 - Appeared in: S25 (Q5a, 03 marks), W24 (Q3b OR, 04 marks)
5. **Define the terms: (1) Salvage value, (2) Market value, (3) Monopoly value, (4) Fair value / Book value / Sentimental value.**
 - Appeared in: S24 (Q5b OR, 04 marks), W23 (Q5b, 04 marks), W22 (Q5b, 04 marks)

Other Important Questions:

6. **Define the term: Valuation. Give purposes of valuation.**
 - Appeared in: S23 (Q5a, 03 marks), W22 (Q5a OR, 03 marks), W23 (Q5a, 03 marks)
7. **Explain various methods for the valuation of a property.**
 - Appeared in: S24 (Q5c OR, 07 marks)
8. **Explain factors affecting the value of a property.**
 - Appeared in: S22 (Q5a OR, 03 marks)
9. **What is the Sinking Fund? How is it calculated? Give its formula.**
 - Appeared in: W24 (Q3b OR, 04 marks), W23 (Q5c, 07 marks)
10. **Define the Terms: Obsolescence, Depreciation, Years purchase.**
 - Appeared in: W24 (Q3a OR, 03 marks)
11. **Describe Security deposit.**
 - Appeared in: S25 (Q5a OR, 03 marks)

Numerical Questions on Valuation and Depreciation:

12. **The cost of a newly constructed building was Rs. 1,50,000. The life of the building is 75 years. Determine the depreciation in the 30th year of life by the straight-line method, constant % method, and sinking fund method at 8% compound interest. The scrap value of the building is 10% of its construction cost.**
 - Appeared in: S24 (Q5c, 07 marks) [Numerical]
13. **A machine is purchased for Rs. 1,25,000. Assuming its life is 17 years and its salvage value is 12%. Calculate the book value at the end of each year for 5 years in a tabular form by using (1) Straight Line Method (2) Constant Percentage Method.**
 - Appeared in: S22 (Q5c, 07 marks) [Numerical]
14. **The owner of a property wants to sell his property at an offer of Rs. 20,00,000. Monthly rent is Rs.15,000, Estimated life of property is 25 years. Outgoings are 30% of gross rent. The rate of interest on capital is 8% and redemption on capital is 6%. Whether it will be advisable to sell the property or not?**
 - Appeared in: S23 (Q3c OR, 07 marks) [Numerical]
15. **A person purchased land for 25,00,000 before 7 years. Presently the value of the same land is 40,00,000. Consider a compound interest of 6% on a Fixed deposit and calculate**

the net profit to the owner of the land.

- Appeared in: S22 (Q5b, 04 marks) *[Numerical]*

16. **From the following details, find out the monthly rent of a property: Cost of land – 15,00,000, Cost of construction – 12,00,000, Expected returns on investment – 12%, Interest rate on sinking fund – 5%, Outgoings – 30% of gross rent, Expected life of the building – 30 years and scrap value = 15%.**

- Appeared in: S22 (Q5c, 07 marks) *[Numerical]*

17. **A motor car was purchased for Rs.12000. Assuming its salvage value at the end of 6 years to be Rs.3000. Determine the amount of depreciation for each year by the constant percentage method.**

- Appeared in: S25 (Q5c, 07 marks) *[Numerical]*

18. **The cost of a newly constructed building is Rs. 100000. The life of the building is 60 years. The scrap value of the building is 10% of its cost. Find the book value of the building after 35 years by the Straight-line method.**

- Appeared in: S25 (Q5c OR, 07 marks) *[Numerical]*
