Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Fifth Semester - Regular) Examinations, November 2025

23BHSHS30002 –Engineering Economics and Costing

(CSE)

Time: 3 hrs Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is meant by Law of Supply? List any two exceptions to the Law of Supply.	CO1	K1
b. What is Market Equilibrium.	CO1	K2
c. Define Average cost and Marginal cost.	CO2	K1
d. What do you mean by salvage value?	CO3	K2
e. Differentiate between GDP and GNP.	CO4	K2

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions	Marks	CO #	Blooms Level
2. a. Define Engineering Economics. Explain the nature and scope of Engineering Economics.	5	CO1	K2
b. Discuss the Law of Demand with diagram and highlight its exceptions.	5	CO1	K1
(OR)			
c. Explain Elasticity of Demand and its measurement.	5	CO1	K3
d. State and explain the Law of Variable Proportion.	5	CO1	K3
3.a. Define and explain Break-Even Analysis using a Linear approach.	5	CO2	K3
b. A firm in a perfectly competitive market has a total cost function given by $TC(x) = 100 + 10x + x^2$, where x is the quantity produced. The market price for the good is P=50. a) Find the firm's profit-maximizing level of output. b) Calculate the firm's total profit at this output level. c) If the market price were to fall to P=20, should the firm continue to produce? What is the new profit-maximizing quantity?	5	CO2	K4
(OR)			
c. Discuss Price and Output Determination under Perfect Competition in the short run.	5	CO2	K2
d. A company has reported the following financial data for the year 2024. The total sales revenue during the year amounted to ₹2,40,000. The fixed costs incurred were ₹50,000 and the variable costs associated with production were ₹75,000. Based on this information, determine the following: (a) The total Contribution (b) The Profit earned during the year (c) The Break-even Point (BEP) in terms of sales value (d) The Margin of Safety for the company.	5	CO2	K4

4.a.	Describe the Present Worth method of economic evaluation	5	CO3	K3
b.	A person is planning for his retired life. He has 10 more years of service. He would like to deposit ₹30,000 at the end of the first year and thereafter he wishes to deposit the same amount with an annual decrease of 2,000 for the next 9 years with an interest rate of 18%. Find the total amount at the end of the 10th year of the above series.	5	CO3	K4
	(OR)			
c.	Discuss the concept of Internal Rate of Return (IRR).	5	CO3	K3
d.	Consider two project alternatives such as A and B. Alternative A requires an initial cost of ₹4,000 and is expected to generate a uniform annual benefit of ₹640 for a useful life of twenty years. Alternative B requires an initial cost of ₹6,000 and provides a uniform annual benefit of ₹960 over the same useful life of twenty years. Using an interest rate of 15% compounded annually, determine which of the two alternatives should be selected based on the Future Worth Method of economic comparison.		CO3	K4
5.a.	Define Depreciation and describe its causes.	5	CO4	K2
b.	The cash flows of two project proposals are provided. Each project has an expected life of ten years. The first project requires an initial investment of ₹7,50,000 and is expected to generate an annual revenue of ₹2,00,000 with a salvage value of ₹50,000 at the end of ten years. The second project requires an initial investment of ₹9,50,000 and is expected to yield an annual revenue of ₹2,25,000 with a salvage value of ₹1,00,000 after ten years. Using an interest rate of 18% compounded annually, determine which of the two projects is more economical by applying the Present Worth Method of comparison.	5	CO4	K4
	(OR)			
c.	Explain the Cost–Benefit Analysis procedure for public engineering projects.	5	CO4	K2
d.	GIET university, Gunupur has purchased a Xerox machine for exam section for ₹10,00,000. The expected life of the Xerox machine is eight years. The salvage value of the Xerox machine at the end of its life is ₹ 1,50,000. Find the following using straight line method of depreciation.	5	CO4	K4
6.a.	Explain the functions of Commercial Banks in an economy.	5	CO5	K2
b.	Describe the concepts and methods of measuring National Income.	5	CO5	K2
	(OR)			
c.	Discuss the role and functions of the Central Bank.	5	CO5	K2
d.	Define Inflation. Explain its causes .	5	CO5	K2

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