Oct 8, 2024	Mr. Shyam paid salary to his employees of Rs. 8000/-
Dec 9, 2024	Mr. Shyam paid Rs. 5,000/- electric bill to CESC

6+12+7=25

Ex/ME(M2)/HS/B/T/421/2025

B.E. MECHANICAL ENGINEERING FOURTH YEAR
SECOND SEMESTER EXAM 2025

ENGINEERING ECONOMICS AND COSTING

Time: 3hrs Full Marks: 100

(Answer question no. 7 and any five from the rest)

(Do not attempt extra question)

(Assume data if missing)

1. a) Distinguish between microeconomics and macroeconomics. What are the three central problems of an economy? - Explain.
   b) What is production possibility curve? State all five assumptions.
   c) Why the production possibility curve is downward sloping from left to right?
   d) Locate and explain “inward shift”, “outward shift”, “underutilization of resources” and “unattainable point” in PPF diagram.

4+5+3+3=15

2. a) What is law of diminishing marginal utility? Explain the relationship between TU and MU.
   b) A consumer consumes only two goods. – Explain equilibrium with the help of utility approach.
   c) Explain properties of indifference curve.
   d) What is budget line? When does a budget line shift?

4+4+3+4=15

3. a) Differentiate between inferior and giffen goods.

[Turn over

b) How do you measure point elasticity of demand?

c) Show different stages of production. What is the ideal range of operation of production process?

4+4+7=15

4. a) Prove that MR will be always below of AR line.

b) Explain Marginal Revenue – Marginal Cost approach for attaining producer's equilibrium.

c) What is the meaning of circular flow of income? Discuss the different phases of circular economy.

d) Differentiate between domestic income and national income.

4+4+3+4=15

5. a) A company is trying to diversify its business in a new product line. The life of the project is 10 years with no salvage value at the end of its life. The initial outlay of the project is Rs. 20,00,000. The annual net profit is Rs. 3,50,000. Find the rate of return for the new business.

b) A granite company is planning to buy a fully automated granite cutting machine. If it is purchased under down payment, the cost of the machine is Rs. 16,00,000. If it is purchased under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in 10 annual equal installments of Rs. 2,00,000 each. Suggest the best alternative for the company using the future worth basis at *i* = 18%, compounded annually.

7+8=15

6. a) What are the steps to adjust the inflation?

b) What are the functions and decisions of inventory?

c) An engineer has two bids for an elevator to be installed in a new building. The details of the bids for the elevators are as follows:

Bid	Engineer's estimates		
	Initial cost (Rs.)	Service life (years)	Annual operations & maintenance cost (Rs.)
Alpha Elevator Inc.	4,50,000	15	27,000
Beta Elevator Inc.	5,40,000	18	28,500

Determine which bid should be accepted, based on the present worth method of comparison assuming 15% interest rate, compounded annually?

3+4+8=15

7. Journalize the following transactions, post them into Ledgers and complete the Trial Balance as on 31st March, 2025.

May 1, 2024	Mr. Shyam started business with Rs. 95,000/- as capital
May 6, 2024	Mr. Shyam sent Rs. 45,000/- to bank
Jun 15, 2024	Mr. Shyam purchased raw goods from M/S Jatin of Rs. 20,000/-
July 3, 2024	Mr. Shyam sold finished goods to M/S Raman of Rs. 40,000/-