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Total Number of Pages : 02

Course: B.Tech

Sub_Code: REN3E001 / REN4E001

4th Semester Regular / Back Examination: 2022-23

SUBJECT: Engineering Economics

ELECTRICAL & C.E, ELECTRONICS & C.E,

Time : 3 Hour

Max Marks : 100

Q.Code : M520

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part-I

Q1 Answer the following questions:

(2 x 10)

- If the price rises by 3 %, the quantity demanded falls by 1.5 %. Calculate the price elasticity of demand.
- Define elasticity of supply.
- Distinguish between 'short-run' and 'long run' in the context of production.
- Define total, average and marginal costs.
- What do you mean by the perfectly competitive market?
- What is the margin of safety?
- What is the difference between capital-recovery factor and sinking-fund factor?
- What is capitalized Cost?
- What do you mean by spill-over benefit?
- What is demand-pull inflation?

Part-II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Suppose that demand is given by the equation $QD = 500 - 50P$, where QD is the quantity demanded, and P is the price of the good. Supply is described by the equation $QS = 50 + 25P$ where QS is quantity supplied. What is the equilibrium price and quantity?
- What are the different types of price elasticity of demand? Explain with diagrams and examples.
- What is the relationship between average cost and marginal cost? If the marginal cost is rising does it mean that the average cost must also be rising?
- Explain three stages of production in the short-run.
- Distinguish between perfect competition and monopoly.
- Illustrate and explain how equilibrium price and quantity change when either the supply or demand curve shifts: 1) an increase in Demand; 2) an increase in Supply; 3) a decrease in Demand; 4) a decrease in Supply
- A person is just 30 years old. He plans to invest an equal sum of Rs. 20,000 every year for the next 30 years from the end of next year. The bank gives 10 % interest compounded annually. Find the maturity value of his account when he is 60 years old.

h) From the given table find IRR:

End of Year	0	1	2	3	4	5
Cash Flows (Rs).	-1000	-800	500	500	500	1200

- i) The Acme Chemical Company paid Rs.45,000 for research equipment, which it believes will have zero salvage value at the end of its 5-year service life. Compute the depreciation schedule for the equipment by using the straight-line depreciation method.
- j) Distinguish between GDP and GNP.
- k) Explain in brief the agency functions of a commercial bank.
- l) What are the two basic methods of depreciation? Explain by giving examples.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 List the "Ceteris Paribus" variables that affect demand and illustrate a shift in a Demand Curve. Now discuss how a change in each of these variables would lead to the shift you have illustrated in your drawing. **(16)**

Q4 Consider the following data of a company for the year 2022-23 **(16)**
Sales: Rs. 2,40,000
Fixed costs: Rs. 50,000
Variable costs: Rs 75,000

Find the following:

- (i) P/V ratio
(ii) BEP
(iii) Margin of safety
(iv) Find sales to earn a profit of Rs 1,00,000.

Q5 National Homebuilders, Inc, plans to purchase new cut-and-finish equipment. Two manufacturers offered the estimates below. **(16)**

	Vendor A	Vendor B
First cost (Rs.)	15,000	18,000
Annual M&O cost (Rs.)	3500	3100
Salvage value (Rs.)	1000	2000
Life, years	6	9

a) Determine which vendor should be selected on the basis of a present worth comparison, if the MARR is 15% per year.

(b) National Homebuilders has a standard practice of evaluating all options over a 5-year period. If a study period of 5 years is used and the salvage values are not expected to change, which vendor should be selected?

Q6 Examine the effects of inflation. How can inflation be controlled? **(16)**