UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December-January 2021-22

Course: Business Economics I   Semester: I
Program: Int. B. Com-MBA   Course code: ECON1001
Time: 03 Hours   Max. Marks: 100

SECTION A

1. Each Question will carry 2 Marks
2. Instruction: Select the correct answer(s)

		CO

Q1	If a decrease in income increases the demand for a good, then
	    a. the good is a substitute good.
	    b. the good is a complement good.
	    c. the good is a normal good.
	    d. the good is an inferior good.
		CO1

Q2	Suppose you like banana cream pie made with vanilla pudding. Assuming all other things are constant, you notice that the price of bananas is higher. How would your demand for vanilla pudding be affected by this?
	    a. It would decrease.
	    b. It would increase.
	    c. It would be unaffected.
	    d. There is insufficient information given to answer the question.
		CO1

Q3	A demand curve is
	    a. the downward-sloping line relating the price of the good with the quantity demanded.
	    b. the upward-sloping line relating price with quantity supplied.
	    c. the curve that relates income with quantity demanded.
	    d. None of the above answers are correct.
		CO2

Q4	A supply curve slopes upward because
	    a. an increase in price gives producers incentive to supply a larger quantity.
	    b. an increase in input prices increases supply.
	    c. a decrease in input prices decreases supply.
	    d. as more is produced, per unit costs of production fall.
		CO2

Q5	Suppose that there is an increase in input prices. We would expect
	    a. supply to increase.
	    b. supply to decrease.
	    c. supply could increase or decrease.
	    d. supply to remain unchanged.
		CO1

Q6	An increase in the price of oranges would
	    a. lead to an increased supply of oranges.
	    b. lead to a movement up the supply curve for oranges.
	    c. lead to an increased demand for oranges.
	    d. lead to a reduction in the prices of inputs used in orange production.
		CO2

Q7	The price elasticity of demand measures
	    a. how responsive buyers are to a change in income.
	    b. how responsive sellers are to a change in price.
	    c. how responsive buyers are to a change in price.
	    d. how responsive sellers are to a change in buyers' income.
		CO1

Q8	Demand for a good would tend to be more elastic,
	    a. the greater the availability of complements.
	    b. the longer the period of time considered.
	    c. the broader the definition of the market.
	    d. the fewer substitutes there are.
		CO2

Q9	Economists compute the price elasticity of demand as
	    a. the percentage change in the price divided by the percentage change in quantity demanded.
	    b. the percentage change in the quantity demanded divided by the percentage change in price.
	    c. the change in quantity demanded divided by the change in the price.
	    d. the percentage change in the quantity demanded divided by the percentage change in income
		CO1

Q10	The production function describes the relationship between which two variables?
	    a. inputs and cost
	    b. inputs and revenue
	    c. outputs and profit
	    d. inputs and outputs
		CO2

SECTION B

1. Each question will carry 5 marks
2. Instruction: Write short / brief notes

Q1.	Suppose the demand function for a firm's product is given by
	$$Q_d = 3 - 0.5\,P_x - 2.5\,P_y + 0.001M + 0.02A$$
	where
	    a. $P_x = \$\,10$
	    b. $P_y = \$\,4$
	    c. $M = \$\,20,000$ and
	    d. $A = \$250$
	Determine the own price elasticity of demand, and state whether demand is elastic, inelastic, or unitary elastic.
		CO1

Q2.	Draw the graph of following demand function $$Q_d = 10 - 2P \text{ where } 0 \le P \ge 5$$	CO2

Q3.	A firm produces output according to the production function
	$$Q = F(K, L) = 2K + 4L$$
	    a. How much output is produced when K = 2 and L = 3?
	    b. If the wage rate is \$30 per hour and the rental rate on capital is \$10 per hour, what is the cost-minimizing input mix for producing 16 units of output?
		CO3

Q4.	The cost function for a firm is given by $$C(Q) = 5 + Q^2$$ If the firm sells output in a perfectly competitive market and other firms in the industry sell output at a price of \$ 20, what price should the manager of this firm put on the product? What level of output should be produced to maximize profits? How much profit will be earned?	CO4

1. Each Question carries 10 Marks.
2. Instruction: Write long answer

Q1	Draw the graph of following information and explain movement and shift along the curve				CO1

Q1 — Draw the graph of following information and explain movement and shift along the curve

Price	Income		
	Rs. 20,000	**Rs. 30,000**	**Rs. 40,000**
10	2	5	8
9	6	9	12
8	10	13	16
7	14	17	20
6	18	21	24
5	22	25	28

CO1

Q2 — Calculate price elasticity from the following

Price (Rs.)	8	7	6	5	4	3	2	1	0
Quantity (1b)	0	1000	2000	3000	4000	5000	6000	7000	8000

CO2

Q3 — A firm can manufacture a product according to the production function
$$Q = F(K, L) = K^{3/4}L^{1/4}$$
Calculate the average product of labor, APL, when the level of capital is fixed at 16 units and the firm uses 16 units of labor. How does the average product of labor change when the firm uses 81 units of labor?

CO3

1. Each Question carries 15 Marks.
2. Instruction: Write long answer

Q1 — An economist estimated that the cost function of a single-product firm is
$$C(Q) = 50 + 25Q + 30Q^2 + 5Q^3$$
Based on this information, determine:
   a. The fixed cost of producing 10 units of output.
   b. The variable cost of producing 10 units of output.
   c. The total cost of producing 10 units of output.
   d. The average fixed cost of producing 10 units of output.
   e. The average variable cost of producing 10 units of output.
   f. The average total cost of producing 10 units of output.
   g. The marginal cost when Q = 10.

CO3

Q2 — You are the manager of a monopoly, and your demand and cost functions are given by
$$P = 200 - 2Q \text{ and } C(Q) = 2,000 + 3Q^2$$
   a. What price–quantity combination maximizes your firm's profits?
   b. Calculate the maximum profits.
   c. Is demand elastic, inelastic, or unit elastic at the profit-maximizing price–quantity combination?
   d. What price–quantity combination maximizes revenue?
   e. Calculate the maximum revenues.

CO4