

THE OPEN UNIVERSITY OF SRI LANKA
 COMMONWEALTH EXECUTIVE MASTER OF BUSIENSS/PUBLIC
 ADMINISTRATION
 FINAL EXAMINATION 2010
 MCP 2605– MANAGERIAL ECONOMICS
 DURATION: THREE (03) HOURS



DATE : 13TH May 2010

TIME : 9.30 A.M to 12.30 PM

Instructions

**Answer any Four(04) Questions.
 All questions carry equal marks.**

- (1) a) A person has a choice of investing in the shares of Firm A and B and the Probability Distribution of the State of share prices of the two firms, given below.

Firm A

State of share price	Probability of occurrence	Outcome
Increase	0.40	\$220
Unchanged	0.20	\$200
Decrease	0.40	\$180

Firm B

State of share price	Probability of occurrence	Outcome
Increase	0.40	\$250
Unchanged	0.20	\$200
Decrease	0.40	\$150

Determine the Expected Value, Standard Deviation and the Coefficient of Variation for both firms and interpret the results.

(10 marks)

- b) “Managerial Economics helps to organize information needed in making business decisions, to understand a company’s environment and to describe the role of business enterprise in a market economy”. Discuss, providing examples.

(15 marks)

- (2) a) Consider the following demand equation for product A of a manufacturing firm.

$$Q_A = 680 - 4P_A + 12Y + 0.5P_B + 2Ad$$

P_A – Price of the own good,

Y – Income

P_B – Price of a competing product

Ad – Advertising budget

- (i) Calculate the company's unit sales given that
 $P_A = \$100$ $Y = \$1200$ $P_B = \$60$ $Ad = \$20$

- (ii) What is the point price elasticity of demand under these conditions?
 Should the firm increase or reduce the price of product A to increase the revenue? Explain your answer.

- (iii) Calculate the following and interpret the results.

Point Cross Price Elasticity of Demand

Point Income Elasticity of Demand

Point Advertising Elasticity of Demand

(12 marks)

- b) "The implications of Income Elasticity and Cross Price Elasticity of demand to the business decision maker are highly significant" Do you agree? Explain with examples.

(13 marks)

- (3) a) "In general, consumer maximization of satisfaction requires equality between the Marginal Rate of Substitution for any pair of products and the ratio of their prices" Explain using illustration.

(07 marks)

- b) In many instances sellers offer consumers quantity discounts. Using Indifference Curve analysis, explain how such discounts work.

(06 marks)

- c) Using Indifference Curve analysis explain how;

- (i) A change in the price of a good relative to the price of the other good in the bundle will lead to a change in the equilibrium consumption bundle.

- (ii) Changes in consumer income, all else remaining constant, affect the mix of goods purchased by consumers.

- (iii) Convex Indifference Curves depict a declining Marginal Rate of Substitution.

(12 Marks)

- (4) a) The production function for Alfa Computers is given as;

$$Q = 4k^{0.5}L^{0.5}$$

- (i) Find the Marginal Product of Labour and Capital.
 (ii) Suppose the capital stock is fixed at 16 units and the price of out put is \$ 8 a unit. Determine the optimal rate of labour to be hired when the wage rate is \$2 and \$4 respectively.

(7 marks)

- b) (i) What is ment by returns to scale? Explain, using illustrations. Provide practical reasons for returns to scale.

If the production function is given as,

$$Q = AK^{\alpha}L^{\beta}$$

How can this be used to determine returns to scale.

- (ii) If the production function of a firm given as; $Q = 50k^{0.224}L^{0.880}$, determine the return to scale.

(12 marks)

- c) "If the price of one factor changes, all else constant, the profit maximizing firm will attempt to substitute away from the factor that has become relatively more expensive" Explain using long run production analysis (Consider the two factor inputs to be Labour and Capital)

(6 marks)

- (5) (a) The total cost function of a firm given as;

$$TC = 1200 + 24Q - 6Q^2 + 0.2Q^3$$

- (i) Find Total Variable Cost (TVC) & Average Variable Cost (AVC)
 (ii) Find the out put that minimize the AVC
 (iii) Find Marginal Cost (MC) and calculate the out put that minimize MC.
 (iv) Find the output rate that equates MC and AVC.
 (v) Is this short of long run production function? Provide reasons.

(10 marks)

- (b) Using illustrations explain the following.
- i) The firm's Long Run Total Cost (LTC) curve is derived from the firm's expansion path.
 - ii) The firm's choice of plant size depends on its desired level of output.
 - iii) The firm should incur variable costs and hence supply the product market, whenever price exceeds the firm's Average Variable Costs level.
- (15 marks)

- (6) (a) i) What are the reasons for a Monopolist to engage in multi plant operations?
- (05 marks)
- ii) Suppose a monopolist have two plants A and B and the demand function of the firm is;

$$Q_D = 120 - 0.5p$$

Total cost functions of the two plants given as

$$TC_A = 4Q_A^2$$

$$TC_B = 2Q_B^2$$

Determine the level of out put produced by each plant and the price charged.

(07 marks)

- (b) (i) What is consumer and producer surplus? Explain, using illustrations.
- (05 marks)
- (ii) "Compared to Perfect Competition, Pricing and Out Put decisions of a Monopolist results in allocative inefficiency and redistribution of income from consumers to the owners of the Monopoly" Do you agree? Explain using illustrations.
- (08 marks)

- (7) (a) (i) What is meant by Cost – Plus pricing?
 (ii) If the percentage of mark-up for a product is denoted by x , prove that,

$$P = AVC(1 + x)$$

P – Price of the product, AVC – Average Variable Cost

- (iii) Suppose a product is sold at \$ 24 a unit, if the AVC to the firm is \$ 15, find the percentage of actual mark up.
 If the Price Elasticity of demand for its product at the resulting price is 3, is the actual mark up and resulting price optimal?
 (10 marks)
- (b) (i) What is meant by price discrimination? Explain with examples.
 (ii) What are the conditions that must be satisfied for a firm to practice price discrimination effectively?
 (7 marks)
- (c) “Suppose a firm faces two different groups of customers and the demand equation for each group is given below.

$$P_A = 400 - 5Q_A \quad (\text{group A})$$

$$P_B = 250 - 1.25Q_B \quad (\text{group B})$$

The total cost function of the firm given as;

$$TC = 20Q_T$$

$$Q = \text{quantity} \quad P = \text{Price} \quad Q_T = Q_A + Q_B$$

- (i) If the firm practices third degree price discrimination, what output will the firm produce and what price will it charge in each market?
 (ii) If the firm is unable to engage in price discrimination, find the market price and output.

(08 marks)

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