UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF MANAGEMENT AND FINANCE

Bachelor of Business Administration - Level II Semester V

Final Examination - June 2017

MOS 2216 MANAGERIAL ECONOMICS

Two (02) Hours

Answer Any Five (05) Questions.

Use of Calculator is permitted

1. i. Briefly explain the functions of Managerial Economists. (03 Marks)

   ii. Kitchen Electronics manufactures Blenders and the marketing department has estimated the monthly demand as follows.

   $$Q_B = 180 - 0.06 P_B - 0.03 P_M + 0.4 P_{CM} + 0.008 I + 0.002A$$

   Where: Q_B = the quantity of Blenders demanded per month

   P_B = the price of a Blender

   P_M = Price of the Mixer

   P_{CM} = Price of the Coffee Maker

   I = Annual average household income

   A = Monthly Advertising Expenditure

   a. If P_B = Rs 6000, P_M = Rs 4000, P_{CM} = Rs 5000, I = Rs 35,000 and A = Rs 10,000, find the quantity demanded for the Blenders. (02 Marks)

   b. Find the elasticity of each of the five independent variables and comment on the relationship with the Q_B. (10 Marks)

   c. If the following changes are expected in the following month what would be the new demand in the following month?

   P_B increases by 5% P_M decreases by 10%   A increases by 20%

   (03 Marks)

d. What is the equation for the demand curve for the Blenders given the values for P_M, P_{CM}, I and A specified in part a? (02 Marks)

(Total 20 marks)

2. i. Differentiate technical efficiency and economic efficiency. (04 Marks)

   ii. What is meant by Constrained Minimization? (02 Marks)

   iii. The Cobb-Douglas function of a firm's output is given as $Q = 100 L^{0.5} K^{0.5}$ where K denotes Capital and L denotes Labour. Total Cost is denoted as C. The input price for Capital (r) is 40 and labour (w) is 30. Based on the given information,

   a. Find the output maximizing objective function and its constraint. (03 Marks)

   b. Construct the Lagrangian Multiplier Function and solve for K and L. (07 Marks)

   c. If the firm determines its cost as Rs 960, how many units of capital and labour should be employed? (02 Marks)

   d. What is the optimized output level? (02 Marks)

(Total 20 marks)

3. i. Using comparative statics analysis, illustrate any one of the outcomes that results from an increase in demand and a decrease in supply and briefly provide explanation. (05 Marks)

   ii. Only One Ltd is a monopolist firm. The demand function is given as follows.

   $$Q = 60 - 0.4 P + 6 Y + 4 A$$

   Where: Q = Quantity of units sold (000 Units)

   P = Price per unit

   Y = Per capita disposable income (Rs 000)

   A = Advertising expenditure (Rs 000)

   a. If Y = Rs 4 and A = Rs 3, find the inverse demand function (02 Marks)

   b. If MC = 20Q + 40 and Total Fixed cost is Rs 1000, derive the firm's Total Cost and Average Cost function. (04 Marks)

   c. Derive total revenue and marginal revenue function of the firm (03 Marks)

   d. Calculate the profit maximizing level of output and price for Only One Ltd. (04 Marks)

   e. What is the profit or loss? (02 Marks)

(Total 20 marks)

4. i. What is Market Power? (02 Marks)

ii. What do you understand by Lerner Index? (02 Marks)

iii. The Demand and Supply functions of competitive market are given as below.

$$P = 20 + 0.5 \, Q_s$$
$$P = 140 - Q_d$$

    a. Find the equilibrium price and output combination (02 Marks)

    b. Calculate the consumer surplus and producer surplus (04 Marks)

If the market structure is converted to monopoly, find

    c. Marginal Revenue function (02 Marks)

    d. The profit maximizing price and output combination (04 Marks)

    e. Transfer of consumer surplus to producer surplus (02 Marks)

    f. Total dead weight loss (02 Marks)

(Total 20 marks)

5. i. Short run average and marginal production curves are mirror image of the short run average and marginal cost curves. Do you agree with this statement? Explain your answer with relevant illustrations. (06 Marks)

ii. Explain the shutdown rule of a competitive firm in the short run by illustrating appropriate diagram. (06 Marks)

iii. Briefly explain the concept of excess capacity in monopolistically competitive firm by comparing the competitive firms. (06 Marks)

iv. What do you understand by minimum efficiency scale? (02 Marks)

(Total 20 marks)

6. i. Using the quarterly observations of the price of timber (P), from 2015 Quarter I to 2016 Quarter IV, a linear form of the regression was estimated. The regression results are given in the table below.

Dependent Variable: P	R-Square	F-Ratio	P – Value on F
Observations: 8	0.7673	19.79	0.0043
	Parameter Estimate	Standard Error	T- Ratio	
Intercept	2066.00	794.62	2.60	0.0407
T	25.00	5.32	4.45	0.0043

a. What is the estimated linear trend equation? (03 Marks)

b. Forecast the prices of the timber in Quarter III of 2017. (03 Marks)

ii. Consider the following two probability distributions for sales of a commodity.

Sales (000 Units)	Distribution 1 Probability (Percent)	Distribution 2 Probability (Percent)
50	10	10
60	20	15
70	40	20
80	20	30
90	10	25

a. What are the expected sales for the two probability distributions? (04 Marks)

b. Calculate the variance and standard deviation for both distributions. Which distribution is more risky? (05 Marks)

c. What is relative risk? If the expected values and the standard deviations of the two distributions are in different measuring units, how do you compare the risk level of the two distributions? (05 Marks)

(Total 20 marks)

7. i. Describe Cartel and Collusion. (04 Marks)

ii. Explain the reasons for the kinked demand curve in Oligopoly firms by highlighting the concept of interdependence. (06 Marks)

iii. Delta and Gamma are two rival firms that operate in oligopoly market. The firms competing to increase their market share by adopting advertising as their strategy. The following payoff table shows the profits (in Rs 000) each firm would earn in each of the possible decision situation.

Delta

	Advertise	Do Not Advertise
Gamma — Advertise	200 / 100	300 / 20
Gamma — Do Not Advertise	100 / 150	250 / 50

a. What do you understand by dominant strategy and Nash Equilibrium? (04 Marks)

b. What is the dominant strategy for each firm given in the above payoff table?

(04 Marks)

c. What is the Nash Equilibrium? (02 Marks)

(Total 20 marks)

Related Formulas

$$Qt = a + bt$$

$$Q_t = Q_0 (1 + g)^t$$

$$E(X) = \sum_{i=1}^{n} p_i X_i$$

$$\sigma_x^2 = \sum_{i=1}^{n} p_i [X_i - E(X)]^2$$

$$\upsilon = \frac{\sigma}{E(X)}$$