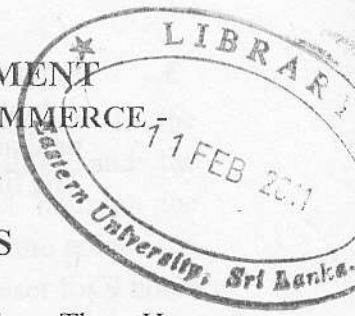


**EASTERN UNIVERSITY, SRILANKA**  
**FACULTY OF COMMERCE AND MANAGEMENT**  
**FINAL YEAR FIRST SEMESTER EXAMINATION IN COMMERCE**  
**2009/10 PROPER (DEC 2010)**



**DBE 4123: MANAGERIAL ECONOMICS**

Answer all questions

Time: Three Hours

1. (i) what is meant by managerial decision problems? Explain with suitable examples from profit and non-profit organizations (05 Marks)
- (ii) Explain the relationship between Managerial Economics and Economic Theory and decision science. (05Marks)
- (iii) Explain basic managerial decision process with a diagram. (05Marks)
- (iv) Show the differentiation rules of the following functions (05 Marks)
- (a) Constant function rule
  - (b) Product function rule
  - (c) Quotient function rule
2. (i) What is Demand Estimation? Why is it so important in the business decision making of firms and other enterprises? (05Marks)
- (ii) ANA company is a producer of chocolate. It hires an economist to determine the demand for its product. After a month the economist tells the company that the demand for firm's product is given by the following function.

$$Q_a = 12,000 - 500 P_a + 5Y + 500P_c$$

$Q_a$  = Demand for ANA chocolates

$P_a$  = Price of ANA chocolates

$Y$  = Per capita Income

$P_c$  = Price of other producers

Now the manager of the company wants to

- a. Determine what a price increase would have on total revenue of the firm?
- b. How sales of chocolates would change during a period of rising income?
- c. Asses the probable impact if competitors raise their price of products.

(Assume that the initial values of  $P_a$ ,  $Y$ ,  $P_c$  are 5/- , 10,000/- and 6/- respectively)  
(15 Marks)

3. Suppose that a firm uses inputs of labour (L) and capital (K) to produce its output (Q) according to the production function  $Q = 10 L^{0.25} K^{0.25}$ . Labour is paid an hourly wage rate of Rs.25/- and the rental price of capital is Rs. 6.25/-. The firm decides to sell its output at the price of Rs. 10.

- i. Using appropriate Lagrange method, find the optimum level of the labor and capital (08 Marks)
- ii. Calculate the profit level at this stage (02 Marks)
- ii. Distinguish between the followings
  - a. Homogeneous Products and Product differentiation
  - b. Marginal cost curve and firm's supply curve (10 Marks)

- 4.
- i. What do you understand by the term "Business forecasting"? List out the importance of Business forecasting in managerial decision making (05 Marks)
  - ii. Suppose that following table shows the quarterly sales of computer Device of firm in Japan

Sales of computer Device in '000s

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4
2006	20	32	62	29
2007	21	42	75	31
2008	23	39	77	48
2009	27	39	92	53

- a. Calculate the trend of sales using least squares method
- b. Estimate the sales of each quarter using trend equation
- c. Calculate the percentage variation of each quarter's actual sales from the estimate
- d. Estimate the forecast for each quarter.

(15 Marks)

5. Consider the following information for a production unit

A small factory produces two types of toys: cars and diggers. In the manufacturing process two machines are used: **the moulder** and the **colouriser**. A digger needs 2 hours on the moulder and 1 hour on the colouriser. A car needs 1 hour on the moulder and 1 hour on the colouriser. The moulder can be operated for 16 hours a day and the colouriser for 9 hours a day. Each digger gives a profit of £16 and each car gives a profit of £14. The profit needs to be maximized.

i. Formulate the LP Model for this problem (05 Marks)

i. Using simplex method, find the maximum level production and interpret your answer (09 Marks)

ii. Obtain the maximum profit level (06 Marks)

\*\*\*\*\*