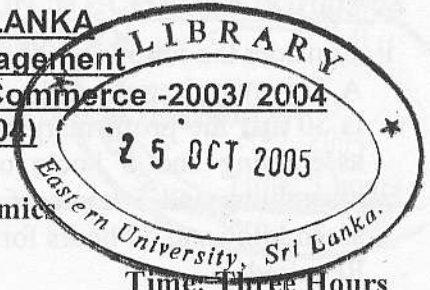


EASTERN UNIVERSITY, SRILANKA
Faculty of Commerce and Management
Fourth Year First Semester Examination in Commerce -2003/ 2004
(November/December.2004)



ECN 4034 Managerial Economics

Time: Three Hours

Answer all questions

- 01.
- i. How does Managerial Economics differ from 'Regular Economics'? (03 Marks)
 - ii. Why does the firm give more attention on price in its demand function than other determinants? (04 Marks)
 - iii. How can the price elasticity be useful for a firm to take a decision on its total revenue? (07 Marks)
 - iv. Suppose a firm uses inputs of labor L and Capital K to produce its output Q. According to the production function $Q=f(L, K) = 10 L^{1/4} K^{1/4}$. Labor is paid an hourly wage rate of $w = 25$ and the rental price of capital is $r = 6.25$, the firm sells its output at a price of $p = 10$ per unit. Using Lagrange multiplier method find the level of labor and capital where profit is maximized (06 Marks)
- 02.
- i. Explain briefly the following models that are used to predict economic trend in any economy
 - a. Lin-log model
 - b. Reciprocal model
 - c. Polynomial model(15 Marks)
 - ii. An estimated Regression function is given below
$$\hat{Y} = 3.7511 - 0.3673 X_i$$
$$\hat{\beta}_0 = 3.7511 \quad \hat{\beta}_1 = 0.3673 \quad Y = \text{Quantity of sugar in Kg, } X_i = \text{Price of sugar in rupee}$$
Required:
 - a. Interpret given predicted results
 - b. Suppose $\sum X = 11$, $\sum Y = 13.5$, $n = 11$ Obtain the Elasticity coefficient with average values and interpret it (05 Marks)

- 03.
- i. What do you mean by the term of "Linear Programming"? (02 Marks)
 - ii. Consider the following information for a firm
 A Toy manufacturer makes two games; Bong g1 and Zong g2. The profit margin on Bong is 30 and the profit margin on Zong is 20. Bong takes 6 hours of processing, 4 hours of assembling and 5 hours of packing. Zong takes 3 hours of processing, 6 hours of assembling and 5 hours of packing. 54 hours are available for processing, 48 hours for assembling and 50 hours for packing.
 Required:
 - a. Obtain the objective and constraint functions
 - b. Find the profit maximizing output level of g1 and g2 by using simplex method
 - c. Interpret slack or surplus variable that you obtained
 - d. Interpret shadow price that you obtained (18 Marks)

- 04.
- i. How would you define the internal rate of return of a capital project? (04 Marks)
 - ii. A capital project has estimated net receipts of \$ 8000 per year and a life of 15 years, with no salvage value. What would be its NPV, if its price is \$54,487 and the applicable discount rate is 9 %? (06 Marks)
 - iii. What is the IRR (Internal rate of return) of the preceding projects? (03 Marks)
 - iv. Suppose a firm has given-size capital budget. Explain how the best combination of a number of acceptable capital projects with different prices but the same lives can be determined using the NPV approach. (07 Marks)

05. Portland Cement Company produces cement in three factories, and the cement has to be transported to three distribution centers. The supply availabilities at the three factories, the demand requirements at the three distribution centers, and the transportation costs per unit (Ton) are given in the following table.

Factories	Distribution centers			Supply (Tons)
	D1	D2	D3	
F1	90	80	100	1000
F2	20	40	50	1900
F3	40	90	60	1600
Demand(Tons)	700	2000	1800	4500

- Required:
- i. Determine an initial basic feasible solution using North-West Corner Rule for minimizing the total transportation cost.
 - ii. Find an optimal solution using the MODI method (20 Marks)