FINAL
(COVER PAGE)

Session : May 2005
Programme : Diploma in Commerce (Australia/New Zealand)
             Australian Degree Transfer Programme (Commerce)
Course : ECO 305: Managerial Economics
Date of Examination : August 10, 2005
Time : 8.00 – 11.00 am          Reading Time : Nil
Duration : 3 Hours
Special Instructions :

This paper consists of SEVEN (7) questions. Answer any FOUR (4) questions in the answer
booklet provided. All questions carry equal marks.

Materials permitted : Nil
Materials provided : Nil

Examiner(s) : Mr. Prakash
Moderator : Dr. Joseph Lee

This paper consists of 5 printed pages, including the cover page.
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Question 1

(a) Tara is considering leaving her current job, which pays $65,000 per year, to start a new company that manufactures a line of special pens for personal digital assistants. Based on market research, she can sell about 160,000 units during the first year at a price of $20 per unit. With annual overhead costs and operating expenses amounting to $3,160,000, Tara expects a profit margin of 25 percent. This margin is 6 percent larger than that of her largest competitor, Pens, Inc.

(i) If Tara decides to embark on her new venture, what will her accounting costs be during the first year of operation? Her implicit costs? Her opportunity costs?

(9 marks)

(ii) Suppose that Tara’s estimated selling price is lower than what was originally projected during the first year. How much revenue would she need in order to earn positive accounting profits? Positive economic profits?

(6 marks)

(b) Suppose you are the manager of a chain of computer stores. For obvious reasons you have been closely following developments in the computer industry, and have just learned that the government had passed a two-prong program designed to further enhance the Malaysian computer industry’s position in the global economy. The legislation provides increased funding for computer education in primary and secondary schools, as well as tax breaks for firms that develop computer software. As a result of this legislation, what do you predict will happen to the equilibrium price and quantity of software?

(10 marks)

Question 2

(a) Revenue at Palm Inc. was $1.4 billion for 9 months ending on March 2, 2004, up 97 percent over revenues for the same period of the fiscal year 2003. Management attributes the increase in revenues to a 137 percent increase in personal digital assistant (PDA) shipments, despite a 17 percent drop in the average blended selling price of Palm’s line of PDAs. Given this information, is it surprising that Palm’s revenue had increased while it decreased the average selling price of its PDAs? Explain.
(b) You are a manager in charge of monitoring cash flow at Kodak. Traditional photography equipment comprises 80 percent of Kodak’s revenues, which grows about 2 percent annually. You recently received a preliminary report that suggests consumers to take three times more digital photographs than photos with traditional films, and that the cross-price elasticity of demand between digital and disposable camera is -0.2. Over the last several years, Kodak has invested over $5 billion to develop and begin producing digital cameras. In 2000 Kodak earned about $400 million from sales of digital cameras and about $600 million from sales of disposable cameras. If the own price elasticity of demand for disposable cameras is -2.5, how will a 1 percent decrease in the price of disposable cameras affect Kodak’s overall revenues from both disposable and digital camera sales? (6 marks)

(c) A firm can manufacture a product according to the production function,

\[ Q = F(K, L) = K^{3/4} L^{1/4} \]

(i) Calculate the average product of labor, 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? (4 marks)

(ii) Find an expression for the marginal product of labor, when the amount of capital is fixed at 16 units. Then, illustrate that the marginal product of labor depends on the amount of labor hired by calculating the marginal product of labor for 16 and 81 units of labor. (4 marks)

(iii) Suppose the capital is fixed at 16 units. If the firm can sell its output at a price of $100 per unit and can hire labor at $25 per unit, how many units of labor should the firm hire in order to maximize profits? (5 marks)

Question 3

(a) Provide an intuitive explanation for why a “buy one, get one free” deal is not the same as a “50 percent discount” sale. (10 marks)

(b) An average 15-year-old purchases 12 CDs and 15 cheese pizzas in a typical year. If cheese pizzas are inferior goods, would the average 15-year-old be indifferent to receiving a $30 gift certificate at a local music store and $30 in cash? Explain. (15 marks)
Question 4

(a) Jiffyburger, a fast-food outlet, sells approximately 8,000 quarter-pound hamburgers in a given week. To meet that demand, Jiffyburger needs 2,000 pounds of ground beef delivered to its premises every Monday morning by 8:00 a.m. sharp.

(i) As the manager of a Jiffyburger franchise, what problems would you anticipate if you have acquired ground beef using spot exchange? 

(5 marks)

(ii) As the manager of a firm that sells ground beef, what problems would you anticipate if you were to supply meat to Jiffyburger through spot exchange?

(5 marks)

(b) Your boss, who has just earned an MBA, finished reading a chapter of a noted economics textbook. She asks you why the firm pays its secretaries an hourly wage instead of piece rates or a percentage of the firm’s profits. How do you answer her?

(15 marks)

Question 5

(a) The CEO of a major automaker overheard one of its division managers make the following statement regarding the firm’s production plans: “In order to maximize profits, it is essential that we operate at the minimum point of our average total cost curve.” If you were the CEO of the automaker, would you praise or correct the manager? Explain.

(10 marks)

(b) The second largest public utility in the nation is the sole provider of electricity in 32 counties of southern Florida. To meet the monthly demand for electricity in these counties, which is given by the inverse demand function \( P = 1,000 - 5Q \), the utility company has set up two electric generating facilities: \( Q_1 \) kilowatts are produced at facility 1, and \( Q_2 \) kilowatts are produced at facility 2 (so \( Q = Q_1 + Q_2 \)). The cost of producing electricity at each facility is given by \( C_1(Q_1) = 10,050 + 5Q_1^2 \) and \( C_2(Q_2) = 5,000 + 2Q_2^2 \) respectively. Determine the profit-maximizing amounts of electricity produced at the two facilities, the optimal price, and the utility company’s profits.

(15 marks)
Question 6

(a) The inverse market demand in a homogenous-product Cournot duopoly is
\[ P = 100 - 2(Q_1 + Q_2) \] and costs are \( C_1(Q_1) = 12Q_1 \) and \( C_2(Q_2) = 20Q_2 \).

(i) Determine the reaction function for each firm. (4 marks)

(ii) Calculate each firm’s equilibrium output. (4 marks)

(iii) Calculate the equilibrium market price. (3 marks)

(iv) Calculate the profit each firm earns in equilibrium. (4 marks)

(b) Consider a Bertrand oligopoly consisting of four firms that produce an identical product at a marginal cost of $100. The inverse market demand for this product is \( P = 500 - 2Q \).

(i) Determine the equilibrium level of output in the market. (10 marks)

(ii) Determine the equilibrium market price.

(iii) Determine the profits of each firm.

Question 7

In some markets, managers can enhance profits above those they would earn by simply charging a single per-unit price to all consumers. Discuss several pricing strategies that could be used to yield profits above those earned by simply charging a single price where marginal revenue equals to marginal cost. (25 marks)

--THE END--

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