



MACHAKOS UNIVERSITY

University Examinations for 2017/2018 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF BUSINESS ADMINISTRATION

**FIRST YEAR FIRST SEMESTER EXAMINATION FOR MASTER OF BUSINESS
ADMINISTRATION**

BBA 821: MANAGERIAL ECONOMICS

DATE: 4/12/2017

TIME: 11.00-2.00 PM

INSTRUCTIONS:

ANSWER QUESTION ONE (1) AND ANY OTHER THREE QUESTIONS

QUESTION ONE (COMPULSORY)- 24 MARKS

Read the following case and answer questions a,b and c.

Peter Mulei Ltd operates a lumber-processing mill in a remote area of Masii division, Machakos County. The company is one of the largest lumber producers in the area and has some market power in the sale of that product. A recent consulting study has indicated that the price elasticity of demand for the firm's product is about -3.0. The company is also a dominant employer in the local labour market and effectively can be considered as a monopsonist in the purchase of labour. The firm's labour demand is shown by the Marginal Revenue Product (MRP) function below:

$$\text{MRP} = 1,000 - 2L$$

Where L is the number of workers. Because of its size relative to the labour supply in the area, Peter Mulei Ltd, faces an upward sloping labour supply function given by;

$$W = 50 + 0.025L$$

Where W is the daily wage.

Once the company determines the optimal rate of labour input and the wage rate, the rate of output is determined. The company uses a cost-plus pricing formula that includes price elasticity of demand as a determinant in setting product price. The same study indicated that the average cost is about Kshs 300 (10 board feet) of timber.

- (a) Is Peter Mulei Ltd in its short run or long run? Justify your answer. (2 marks)
- (b) Determine:
 - (i) The amount of labour that the company should employ in order to maximize profits. (4 marks)
 - (ii) The wage rate the company will have to pay (3 marks)
 - (iii) The price the company will have to charge per unit output (2 marks)
- (c) Suppose another lumber producer locates a plant in the same area thereby increasing competition and thus shifting the labour supply function facing Peter Mulei Ltd to $W = 50 + 0.04L$ and price elasticity of demand changes to -4.0 .
 - (i) Determine the amount of labour that Peter Mulei Ltd should employ in order to maximize profits under this new labour market condition (2 marks)
 - (ii) Determine the new wage rate that the firm will have to pay (2 marks)
- (d) Giving examples, discuss the major profit theories (4 marks)
- (e) Distinguish between the following paired terms; (5 marks)
 - (i) Marginal Revenue and Marginal Revenue Product
 - (ii) Marginal cost and Marginal Factor cost
 - (iii) Demand Elasticity and Production Elasticity
 - (iv) Demand Curve and Demand Function
 - (v) Break-even point and Point of inflexion

QUESTION TWO (12 MARKS)

- (a) In an attempt to increase revenues and profits, a firm is considering a 4% increase in price and an 11% increase in advertising. If the price elasticity of demand is -1.5 and advertising elasticity of demand is $+0.6$, would you expect an increase or decrease in total revenue? Explain. (6 marks)

- (b) After the invasion of Kuwait by Iraq, the price of jet fuel used by airlines decreased drastically. As the CEO of Delta Airlines, you have been presented with the following options to deal with this problem: (6 marks)

- (i) Reduce airfares to reflect expense reduction
- (ii) Increase the number of flights per day in some markets
- (iii) Make long term contracts to buy jet fuel at a fixed price for the next two years and set airfares to a level that will cover these costs.

Evaluate these options in the context of the decision-making model.

QUESTION THREE (12 MARKS)

- (a) Discuss cost-plus pricing as a pricing strategy fully highlighting the associated limitations (6 marks)

- (b) A rancher sells hides and beef. The two goods are assumed to be jointly produced in fixed proportions. The marginal cost equation for the beef-hide product package is given by: $MC = 30 + 5Q$

The demand and Marginal revenue equations for the two products are:

BEEF

$$P = 60 - 1Q$$

$$MR = 60 - 2Q$$

HIDES

$$P = 80 - 2Q$$

$$MR = 80 - 4Q$$

What price should be charged for beef and hides? How many units of the product package should be produced? (6 marks)

QUESTION FOUR (12 MARKS)

A monopoly firm faces two markets A and B with two different demand functions as follows: $Q_a = 16 - 0.5P_a$ and $Q_b = 22 - P_b$. Suppose the firm's total cost function (TC) is given as: $TC = 10 + 2Q_a + Q_b^2$. Determine the firm's profit maximizing output and the amount of output that the firm will sell in each market so as to maximize profit in each of the markets. Explain the conditions necessary for price discrimination.

QUESTION FIVE (12 MARKS)

- (a) The total cost of a firm that produces its product on two assembly lines is given as $TC = 3x^2 + 6y^2 - xy$. The problem facing the firm is to determine the least cost combination of output on assembly lines x and y subject to the side condition that output is 20 units.
- (i) State the problem facing the firm (2 marks)
 - (ii) Solve the optimal values of x and y (6 marks)
- (b) Discuss the various profitable decisions that can be made by management. (4 marks)