



**AFRICA  
UNIVERSITY**

*(A United Methodist-Related Institution)*

***"Investing in Africa's Future"***

**COLLEGE OF BUSINESS, PEACE, LEADERSHIP &  
GOVERNANCE**

**COURSE TITLE: MEC 502- MANAGERIAL ECONOMICS**

**SEMESTER 1: FINAL EXAMINATION DECEMBER 2018**

**LECTURER: MR. L. NGENDAKUMANA**

**TIME: 3 HOURS**

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***INSTRUCTIONS***

Answer **any five questions of your choice.**

Total possible mark is **100.**

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Start **each** question on a new page in your answer booklet.

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The marks allocated to **each** question are shown at the end of the section.

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**Show all your workings.**

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Credit will be awarded for logical, systematic and neat presentations.



### Question One

- a. Use the schematic building block of managerial economics to show how a manager can practically use the discipline to make optimal decisions [8]
- b. State and explain any 5 key decisions that managers have to make in their bid to find solutions to managerial problems. [6]
- c. Using 5 clear examples, distinguish between economic and non- economic goals of a business firm [6]

### Question Two

- a. Using the concept of price discrimination and well labelled diagrams, briefly explain the different types of prices discrimination and provide criteria for successful price discrimination [10]

- b. The demand equation for good X is given by:

$$Q_x = 100 + 0.5P_y ; \text{ Where } P_y \text{ is the price of good Y related to X.}$$

The initial priced of Y is  $P_y = \$20$

- i. Are X and Y substitutes or complements? Explain [3]
- ii. Assess the probable impact of a decrease in price of Y on the quantity demanded of X. Explain [2]
- c. Explain how a manager can use the concept of income elasticity to foster a firm's success at different stages of the business cycle [5]

### Question Three

- a. Illustrate a practical application of cost plus pricing system and evaluate its advantages and disadvantages [8]
- b. A car manufacturer estimates that total variable costs will be \$ 50 000 000 and total fixed costs will be \$100 000 000 in the next year. In setting prices, it is assumed that sales will be 80 percent of the firm's 12 500 vehicle per- year capacity. The target rate of return is 10 percent, which is to be earned on an investment of \$ 200 000 000. If prices are set on a cost plus basis, what price should be charged for each car? [4]
- c. Peak-load pricing is market sensitive. Comment [4]
- d. Use the concept of profit elasticity to explain the concept leverage and evaluate how changes in price affect a firm' s break-even output level [4]



#### Question Four

Three firms in the same industry all sell their product at \$40 per unit. Their total fix cost and average cost per unit are shown bellow

	A	B	C
Total Fixed Cost (\$)	500	1000	300
Average Variable cost	15	20	10

- What is the breakeven output rate for each firm? [6]
- Each firm has a minimum profit target of \$50000 on each new program it develops. Determine the unit and dollars volume sales required to meet this goal. [6]
- If the market price for the product increases by 25 percent due to the significant increase in number of programs being supplied to the market. Determine the new breakeven unit and dollar volumes for each firm and comment on these new levels. [6]
- Briefly explain the concept profit contribution [2]

#### Question Five

In economic theory, it is known that the demand for a normal good is inversely related to the price of that good. Management of UPFUMI Pvt Ltd sets out to determine the demand for a new palm wine in a low density suburb in Chitungwiza.

Period	Price	Quantity
1	15	100
2	18	90
3	19	85
4	14	110
5	13	120
6	19	90
7	16	105
8	14	100

- Use regression analysis to estimate the demand that faces UPFUMI Pvt Ltd [5]
- Using the estimated function from part (a) forecast the demand that results from an increased price of \$17 and a reduced price of \$ 12. [3]
- Compute and interpret the goodness of fit. [3]
- Compute the point price elasticity of demand at the mean values of the variables and interpret your result. [4]
- Assess the probable impact of a price decrease on UPFUMI total revenue. Explain [2]
- Many scholars tend to be disillusioned by the algebra of elasticity. However, there is a direct relationship between revenues and elasticity. Derive that relationship and



demonstrate its use in decision making. Given the following formulae (Where x is the independent variable and y is the dependent variable). [3]

### Question Six

Consider a Cobb-Douglas production function that shows a production of textiles in Ghana

$$Q = 100K^{0.5} L^{0.5}$$

Where Q is output, K is capital input and L is labor input.

The following table shows the various input rates and the attained output(s)

<i>Rate of Capital input (K)</i>								
8	283	400	490	565	632	693	748	800
7	265	374	458	529	592	648	700	748
6	245	346	424	490	548	600	648	693
5	224	316	387	447	500	548	592	632
4	200	283	346	400	447	490	529	565
3	173	245	300	346	387	426	458	490
2	141	200	245	283	316	346	374	400
1	100	141	173	200	224	245	265	283
<i>Rate of labour input (L)</i>								
	1	2	3	4	5	6	7	8

Inferring from the above table illustrate and explain the following concepts

- (a) Substitutability [3]
- (b) Technological efficiency [2]
- (c) Returns to a factor [2]
- (d) Asset specialization [2]
- (e) Economic efficiency [3]
- (f) Explain the concept of a production function. Why is only having qualitative information about the production function inadequate for making decisions about efficient input combinations and the profit-maximizing rate of output? [8]



### Question Seven

- a. Using a payoff matrix, show in what way a maxmin strategy is valid business strategy [4]
- b. Game theory is used in economics because of the realization that the performance of a firm is also dependent upon the strategies employed by its competitors. Use a payoff matrix used in (a) to demonstrate this concept [4]
- c. The Prisoner's Dilemma model illustrates that the result of a game can be undesirable. Assess this statement using a practical illustration [8]
- d. Outline and briefly explain four major applications of game theory [4]

END

You may refer to the following formulae

$$\hat{\beta} = \frac{\sum xy}{\sum x^2}$$

where  $x = X - \bar{X}$  and  $y = Y - \bar{Y}$

$$\hat{\alpha} = \bar{Y} - \hat{\beta}\bar{X}$$

$$R^2 = \hat{\beta}^2 \frac{\sum x^2}{\sum y^2}$$