



*“Investing in Africa’s Future”*

**FACULTY OF MANAGEMENT AND ADMINISTRATION**

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

**Module V11: FINAL EXAMINATION – Nov/Dec 2013**

**LECTURER: MR G. MANDEWO**

**TIME: 3 HOURS**

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### ***INSTRUCTIONS***

Answer **ALL Questions** in **SECTION A** and any **ONE Question** in **SECTION B**.

Total possible mark is **100**.

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

Booklet.

## SECTION A

1 (a) Wadzanai has collected excerpts of information about the demand for perfumes in Mazoe District.

$$\begin{array}{llll} \sum X^2 = 600 & \sum XY = -300 & (\sum XY)^2 = 90000 & \sum XY = -300 \\ \sum xy = -45 & \sum Y = 52.6 & (\sum Y)^2 = 3158 & \sum x^2 = 95 \\ \sum y^2 = 120.5 & & & \end{array}$$

- i. In what way would you justify her assertion that the information is adequate for the computation of  $\hat{\beta}$  [5 marks]
- ii. What additional information is required for Wadzanai to compute the intercept? [5 marks]
- iii. Compute the coefficient of determination and interpret it. [5 marks]
- iv. Of what relevance is regression analysis to a manager? [5 marks]

You may refer to the following formulae

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

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

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

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

2. 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. The following pay off matrix captures various outcomes of a game between Africa University and the University of Zimbabwe in their executive post graduate programmes.

		UZ	
		Do not advertise	Advertise
Africa University	Do not Advertise	40; 40	160; , 45
	Advertise	--50, 71	180, 65

- (a) We draw subtle lessons from the prisoners' dilemma. What are the lessons and how do we relate them to the above payoff matrix [5 marks]
- (b) Suppose the game is a repeated game. Deduce the likely outcome and justify your response. [5 marks]
- (c) If the outcomes in the payoff matrix now reflect costs of advertising. What will be the new outcome of a maxmin strategy. [5 marks]
- (d) Game theory asserts that the profitability of a firm is a function of the activities of other firms in the industry. Demonstrate how the knowledge of repeated games and Nash equilibrium may enhance the profits realized by your firm. [5 marks]
3. (a) Demonstrate two methods you would use to determine the optimal labour input and optimal capital input given a Cobb Douglas production function of the form  $Q = 180L^{0.375}K^{0.625}$  And that the wage rate is \$4 per hour and the price of the machine is \$1 per hour. The Total cost is \$10 000.00 Use the Langrangian technique to determine the optimal output, Capital units and Labour units. [5 marks]
- (b) Suppose two products A and B are jointly produced, illustrate and explain how a manager can price these goods. [5 marks]
- (c) Monopoly production generate a deadweight loss. What do you understand by this concept? [5 marks]
- (d) The class president remarked that the 'economic profits Africa University is realizing from its off-campus programs are short lived' Appeal to economic concepts to justify this statement. [5 marks]
- (e) In what way does information asymmetry compromise business? [5 marks]
- (f) Illustrate and explain the subtle relationship among marginal product, average product and Total product? [5 marks]

(g) Illustrate and explain the subtle relationship among average variable cost, marginal cost and average cost. **[5 marks]**

## SECTION B

3. a. Illustrate and explain long run profit maximization for a perfectly competitive firm and a monopoly. **[5 marks]**

b. Under what circumstances should you defend pure competition as the most efficient market structure? **[5 marks]**

(c) The following table gives the information regarding the units produced, TR and TC of production of a North Indian Tools factory. Complete the table :

Total Profit	Marginal Profit	Unit of Output	Total Revenue (\$)	Marginal Revenue	Total Cost (\$)	Marginal Cost
		250	1000		752	
		251	1004		753	
		252	1008		755	
		253	1012		758	
		254	1016		762	
		255	1020		767	
		256	1024		773	
		257	1028		780	

(i) Determine the profit maximising output level. **[3 marks]**

(ii) Is profit maximum at the output where marginal profit equals zero ? Is this always the case or is this unique to this particular problem? **[3 marks]**

(iii) Is profit maximum where total revenue equals total cost? Explain. **[3 marks]**

(c) Fungayi Luxury Airlines have a capacity to carry a maximum of 10 000 passengers per month from Harare to Victoria Falls at a fare of \$500. Variable costs are \$100 per passenger and fixed costs are \$30 000 per month. How many passengers should be carried per month to break even? **[3 marks]**

(d) A monopolist has production function  $Q = L^{0.5}K^{0.5}$ . A unit of labour costs  $w = 15$  and a unit of capital costs  $r = 10$ . If the total cost is pegged at \$ 900.00 Use one method to determine the optimal mix of capital and labour that will maximize output **[3 marks]**

4.(a) You are the manager of a firm that produces output in two plants. The demand for your firm's product is  $P = 80 - Q$ , where  $Q = Q_1 + Q_2$ . The marginal cost associated with producing in the two plants are  $MC_1 = Q_1$  and  $MC_2 = 8$ .

How much output should be produced in plant 1 in order to maximize profits? **[5 marks]**

(b) Discuss, explain and illustrate the following concept in information economics

i. information asymmetry **[5 marks]**

ii. adverse selection **[5 marks]**

i. Moral hazard **[5 marks]**

(b) Evaluate the statement. "The reason monopolists always make excessive profits is that they face a nearly perfectly inelastic demand curve and are thus able to charge an excessively high price" **[5 marks]**

5 . (a) Moral hazard concept emanates from the fact that buyers and sellers have different sets of information in terms of product quality, interoperability, durability and design. State whether this statement is TRUE/FALSE/UNCERTAIN. Justify your response. **[5 marks]**

(b) It is better to hang rather than fall. This seems to be the message from the MAXMIN strategy. Demonstrate using a business payoff matrix. **[5 marks]**

(c) Relate the prisoners' dilemma concept to business. **[5 marks]**

(d) Tafadzwa is a known cross boarder vendor. She observed that the demand for white slacks was dependent on the demand for black slacks. She increased the price of white slacks from \$12 to \$15 the demand for black slacks rose from 80 to 120. Calculate, classify, interpret, illustrate and infer the relevant elasticity. **[5 marks]**

(b) Sakubva high head is considering increasing school fees by 25%. Some of his administrative officers are arguing that this may not be the right solution to increase revenues because the elasticity of demand is too low only 0.01 Comment on this statement and justify or refute the claim by the officers. **[5 marks]**

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