AFRICA UNIVERSITY
(A United Methodist-Related Institution)

"Investing in Africa's Future"

FACULTY OF MANAGEMENT AND ADMINISTRATION

COURSE TITLE:	**MEC 401 – MANAGERIAL ECONOMICS**
SEMESTER 1:	**FINAL EXAMINATION – Nov/De 2013**
LECTURER:	**MR G. MANDEWO**
TIME:	**3 HOURS**

INSTRUCTIONS

Answer **ALL Questions** in **SECTION A** and any **TWO Questions** in **SECTION B**.

Total possible mark is **100.**

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

Booklet.

SECTION A

1 . (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. **[4 marks]**

(b) Suppose two products A and B are jointly produced, illustrate and explain how a manager can price these goods. **[4 marks]**

(c) Monopoly production generate a deadweight loss. What do you understand by this concept? **[4 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. **[4 marks]**

(e) In what way does information asymmetry compromise business? **[4 marks]**

2. With reference to the payoff matrix for ECONET and TELECEL, leading companies in the telecommunications business in Zimbabwe, you are required to:

		Telecel	
		No new product	New product
ECONET	No new product	40; 40	160; , 45
	New Product	--50, 71	180, 65

(a) Read the above payoff matrix and justify why the matrix conforms to a game. **[4 marks]**

(b) In what way would the outcome differ if the game was cooperative and if it was non cooperative? **[4 marks]**

(c) Distort the payoff matrix for firm 1 so that it does not have a dominant strategy **[4 marks]**

(d) How would you convert this payoff matrix to reflect a zero sum game? **[4 marks]**

3. (a) Suppose you are given that a perfectly competitive firm produces 50 Units of output and a monopoly who faces the same marginal cost produces only 15 Units of output. If the monopolist charges $75.00 per unit of a product and a firm in perfect competition charges $50 for the same product.
   i. Compute the total loss in consumer surplus with monopoly market as compared to a situation with perfectly competitive market. **[4 marks]**
   ii. Explain why monopoly production is un desirable **[4 marks]**

(b) The output (*Q*) of a production process is a function of two inputs (K and *L*) and is given by the following relationship:

$$Q = 10K^{0.15} L^{0.85}$$

The per-unit prices of inputs *K* and *L* are $5 and $20, respectively. The firm is interested in maximizing the output subject to a cost constraint of $20 000.

i. Use the Langrangian technique to determine units of *K* and *L* that should be used by the firm. What is the output combination? **[4 marks]**

ii. Is there an alternative solution to this problem **[4 marks]**

(c) Why is the equi-marginal rule (MC = MR) considered to be maximizing profits? **[4 marks]**

(d) In what way does information asymmetry affect business? **[4 marks]**

SECTION B

4. (a) The Monthly demand for diabetes tablets is known to be perfectly inelastic and the demand for air time in Sakubva is perfectly elastic. If the elasticity of diabetic tablets is zero and that of airtime is undefined (infinite) With an aid of a diagram explain what the statements means and justify the proposed elasticities. **[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]**

   (c) 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]**

(d) Mr Anesu is an illegal dealer of illicit brands of beer. If the income elasticity of demand is -3.6 is he going to profit from the recently announced 5% income increase or not/ **(justify your response) [5 marks]**

5 a. Illustrate and explain long run profit maximization for a perfectly competitive firm and a monopoly. **[4 marks]**

b. Under what circumstances should you defend pure competition as the most efficient market structure? **[4 marks]**

c. Sometimes buyers and sellers do not have the same information about a product or a service and this is referred to as information asymmetry. There two problems that emanate from this complex concept, that is, moral hazard and adverse selection. The following has been suggested as methods to reduce the effect of post contractual opportunistic behaviour. Warrantee and guarantee.

i. Explain how these instruments work to reduce moral hazard. **[4 marks]**
ii. With the aid of a diagram explain the concept of adverse selection. **[4 marks]**
iii. Using game theoretic approaches deduce the outcome of this game. (maxmin strategy may prove handy) **[4 marks]**

6a. Two goods have a cross-price elasticity of +1.2.
Would you describe these goods as substitutes or complements? **[4 marks]**

b. If the price of one of the goods increases by 5 percent, what will happen to the demand for the product, holding constant the effects of all other factors? **[4 marks]**

c. In an attempt to increase revenue and profits, a firm is considering 4 percent increase in price and an 11 percent increase in advertising. If the price elasticity of demand is -1.5 and the advertising elasticity of demand is +0.6, would you expect an increase or decrease in total revenues? **[4 marks]**

d. Given that the total product is given by $100 - Q^2$. What is the rate of output that will maximize the Total Product **[4 marks]**

e. I overhead Mr Anesu remarking that all points on the demand function have different elasticities. Given a demand function of the form

$$\mathbf{Q = 24\text{-}5.6P}$$

Demonstrate the authenticity of Anesu' statement using two price levels, that is 2 and 3**[4 marks]**

5. (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 $Q = Q1 + Q2$. The marginal cost associated with producing in the two plants are $MC1 = Q1$ and $MC2 = 8$.
   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]**

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

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

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