AFRICA UNIVERSITY
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"Investing in Africa's Future"

FACULTY OF MANAGEMENT AND ADMINISTRATION

MEC 401 MANAGERIAL ECONOMICS EXAM 1

END OF FIRST SEMESTER EXAMINATIONS

NOVEMBER/DECEMBER 2016

LECTURER: MR G. MANDEWO

DURATION: 3 HRS

INSTRUCTIONS

Answer **Question number one** and any other **Three** questions

Total possible mark is **100.**

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

1. (a) Suppose the class president, Antonio, is engaged by Alfandega Investments to determine the demand for dry groceries in Tete. The following data is available for her estimation

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Price	1	3	4	5	5	7	8
Quantity	15	12	11	11	9	8	6

i. State the *apriori* expectation**[5 marks]**

ii. Draw a scatter diagram and fit in the regression equation **[5 marks]**

iii. Estimate the demand function using the above information.**[5 Marks]**

iv. Compute and interpret the point elasticity of demand when price is $12.00**[5 Marks]**

v. Determine the coefficient of determination and give an interpretation**[5 Marks]**

You may refer to the following formulae

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

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

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

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

(b) Given the following economic concepts:

i. Moral Hazard**[5 Marks]**

ii. Adverse Selection **[5 Marks]**

Demonstrate and understanding of the above concepts by applying them in the business world.

iii. suggest practical ways of solving post contractual opportunistic disease **[5 marks]**

2. (a) Maonera Pvt. Ltd and Anesu Inc. are the only two companies in the taxi business in Gwanda town. The two companies decided to collude and charge the same fare. Anesu cheated in the initial round, using a tit-for-tat strategy deduce the outcome of this game **[5 marks]**

   (b) 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 $Q = 180L^{0.25}K^{0.75}$ 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 **[5 marks]**

   (b) TARISAIJESCA Inc. sells bottles of coffee to professors who stay up all night to write notes. TARISAIJESCA has identified the 5 people willing to pay the most for the coffee, and the firm knows exactly the maximum price that each is willing to pay per bottle. Here they are:

   Remember: $50 for a bottle
   Anesu: $49 for a bottle
   Maenda: $48 for a bottle
   Tafadzwa: $47 for a bottle
   Chimwanda: $46 for a bottle

   i. Explore the concept of consumer surplus **[2 marks]**

   ii. Contrast the above example with second degree and third degree price discrimination **[3 marks]**

   iii. If products in question are jointly produced goods (such as Petrol and diesel) demonstrate how you would price such goods **[5 marks]**

3. (a) In cost theory, the Marginal Cost intersects the Average Cost at the minimum point of the average cost. Illustrate and justify. **[5 marks]**

(b) Total Revenue is equal to price times quantity, algebraically show a direct relationship between Total revenues and elasticity. **[5 marks]**

(c) Explicitly demonstrate the problems that arise because of information asymmetry. **[5 marks]**

(d) What are the practical solutions to these problems of information asymmetry? **[5 marks]**

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. **[3 marks]**

b. Under what circumstances should you defend pure competition as the most efficient market structure? **[3 marks]**

(c) The breakfast cereal industry is heavily concentrated. Kellogg, General Mills, General Foods (Post) and Ralcorp account for over 85 percent of industry sales. Advertising by individual firms does not convince more people to eat breakfast. Effective advertising simply steals sales from rivals. Big profits could be had if these rivals could simply agree to stop advertising. Kellogg can choose either row in the payoff matrix shown below, whereas General Mills can choose either column. The first number in each cell is Kellogg's payoff; the second number is the payoff to General Mills. This is a one-

shot, simultaneous move game. Convert the above information into a convincing payoff matrix and answer the following questions

i) Briefly describe the Nash equilibrium concept. **[2 marks]**

ii) Is there a Nash equilibrium strategy for each firm? If so, what is it? **[2 marks]**

iii) How might the outcome change if this game were repeated over many advertising seasons? **[2 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

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

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

7. (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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