

**UNIVERSITY OF SWAZILAND  
DEPARTMENT OF ECONOMICS  
FINAL EXAMINATION 2011/12**

**TITLE OF PAPER: INTRODUCTION TO MICROECONOMICS  
COURSE CODE: ECON 201**

**INSTRUCTIONS: ANSWER FOUR QUESTIONS:  
BOTH QUESTIONS IN SECTION A**

**AND**

**ANY TWO QUESTIONS IN SECTION B**

**TIME ALLOWED: THREE(3) HOURS**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS  
BEEN GRANTED BY THE INVIGILATOR**

**SECTION A**  
**ANSWER BOTH QUESTIONS IN THIS SECTION**

**Question 1**

The following data pertain to a perfectly competitive firm in the short run. The data show output obtainable at the different levels of employment of the labour input:

<u>LABOUR</u>	<u>OUTPUT</u>
1	10
2	15
3	25
4	35
5	40
6	44
7	47
8	49
9	50

Given that labour is paid a wage rate of E10 per unit, fixed costs are E100, and that the price of output is E5 per unit:

- (a) Determine the level of output at which this firm will produce  
 [ 6 marks]
- (b) Using the marginal productivity concept, determine the amount of labour that this firm should hire.  
 [ 6 marks]
- (c) Indicate the amount of profit for the firm at the profit maximizing output level.  
 [ 4 marks]
- (d) With the aid of a diagram, briefly describe the conditions which determine whether a firm operating at a loss in the short run should continue to produce.  
 [4 marks]

**Question 2**

- (a) With the aid of diagrams briefly compare the following markets in determining their prices and levels of output:

Pure Competition  
Pure Monopoly

[10 marks]

- (b) Distinguish between the concepts of Value of Marginal Product (VMP) and Marginal Revenue Product (MRP).

[ 6 Marks]

- (c) Explain and demonstrate, with the aid of a diagram, the concept of Monopolistic exploitation of a resource. As an Economist, explain how you would reduce this kind of exploitation.

[ 14 Marks]

**SECTION B**

**ANSWER TWO QUESTIONS FROM THIS SECTION**

**Question 3**

(a) An airline is considering an advance purchase fare to supplement its existing economy fare. It conducts a study to assess the likely patronage of such a fare. The table below summarizes the projected weekly sales of advance purchase tickets and economy class tickets. Given that the economy class fare is E200:

- I. Calculate the own price elasticity of advance purchase tickets when the fare rises from E100 to E180. [ 6 marks]
- II. What is the cross-price elasticity of economy tickets in response to advance fare increases from E50 to E150? [6 marks]
- III. Comment on the relationship between economy tickets and advance purchase tickets. [3 marks]

<b>Advance Purchase Fare (E)</b>	<b># of Advance Purchase Tickets</b>	<b># of Economy tickets</b>
50	2000	200
100	1200	400
120	900	500
150	600	600
180	200	1000

(b) The market demand and supply functions for a particular good are respectively:

**$P = 75/(1+Q)^2$**

And

**$16P = Q^2 + 32$**

If the market price is P = E3, calculate the corresponding consumer's surplus and producer's surplus. [ 10 Marks]

#### Question 4

An engineering firm is able to practice price discrimination in three markets whose demand functions are:

$$\text{Market 1} \quad 0.2P_1 + Q_1 - 50 = 0$$

$$\text{Market 2} \quad 0.4P_2 + Q_2 - 60 = 0$$

$$\text{Market 3} \quad 0.2P_3 + Q_3 - 90 = 0$$

The Total Cost function of the firm is given by

$$TC = 1500 + 14Q$$

Where  $Q = Q_1 + Q_2 + Q_3$

If the firm wishes to maximize profits, determine the price that should be charged if the firm adopts:

- a policy of price discrimination [14 Marks]
- a policy of non-price discrimination [7 Marks]
- Which policy should the firm adopt (show work)? [4 Marks]

#### Question 5

(a) Briefly discuss the welfare effects of monopoly. With the aid of a diagram explain the effectiveness of the Lump Sum Tax in correcting for inefficiencies that arise due to the presence of monopoly in industry. [13 marks]

(b) The market demand function facing a firm is given by

$$4P + Q - 16 = 0$$

And the AC function takes the form

$$AC = 4/Q + 2 - 0.3Q + 0.05Q^2$$

Where AC = Average Cost, Q = Output, P = Price

Find the Q which gives:

- i) Maximum revenue [ 4 marks]
- ii) Minimum marginal cost [ 4 marks]
- iii) Maximum profits [ 4 marks]

**Question 6**

(a) The following revenue and cost information is for perfectly competitive firm:

$$P = MR = \text{E } 100$$

$$AC = 204 - 3Q + 0.02Q^2$$

Where P = Product price  
 MR = Marginal Revenue  
 AC = Average cost  
 Q = Units of output produced per month

Find the profit maximizing level of output and calculate the level of profit. [10 marks]

b) Compare and contrast the welfare effects of a non discriminating monopolist and a second degree price discriminator. [ 7 marks]

(c) A Monopoly firm's demand function is given by:

$$Q = 330 - 60 P$$

Given a constant marginal cost **MC = 0.5**

- (i) Calculate equilibrium price and quantity [5 marks]
- (ii) Calculate the level of profit [3marks]

