

**UNIVERSITY OF SWAZILAND
FACULTY OF SOCIAL SCIENCE
DEPARTMENT OF ECONOMICS
MAIN EXAMINATION
DECEMBER 2012**

TITLE OF PAPER: INTERMEDIATE MICROECONOMIC THEORY

COURSE CODE: ECON 302

TIME ALLOWED: THREE (3) HOURS

- INSTRUCTIONS:**
- 1. ANSWER THREE (3) QUESTIONS:
QUESTION ONE (1) IS COMPULSORY AND
YOU CAN THEN CHOOSE ANY TWO (2)
QUESTIONS FROM THE REMAINING
QUESTIONS PROVIDED.**
 - 2. QUESTION 1 CARRIES 50 MARKS AND
THE CHOSEN TWO QUESTIONS CARRY 25
MARKS EACH**

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

QUESTION 1 (Compulsory)

- a) Given the following utility function: $U=X_1^2 X_2$
- i) Derive the hicksian demand functions (10)
 - ii) Derive the expenditure function (3)
 - iii) Derive the ordinary demand functions (10)
 - iv) Derive the indirect utility function (3)
 - v) Using the appropriate theorem find the marshallian demand function for good 2. (5)
 - vi) Using the appropriate theorem find the compensated demand function for good 2. (4)
- b) Write short explanatory notes on the following: (5 marks each)
- i) Compare and contrast the preference theory and the revealed preference theory
 - ii) Consumer rationality.
 - iii) The law of diminishing marginal rate of substitution.

QUESTION 2

- a) Discuss the type of relationship that exists between the total product, marginal product and average product curves of labor. In your discussion also include an explanation of how the law of diminishing marginal productivity would impact the production curves. (15)
- b) i) Calculate the average and marginal productivity functions for X_1 which correspond to the production function $Q = X_1X_2 - 0.2X_1^2 - 0.8X_2^2$. (5)
- ii) Let $X_2 = 10$. At what respective values of X_1 will the AP and MP of X_1 equal zero? (5)

QUESTION 3

- a) Suppose that the market demand curve and market supply curve for a competitive firm is given by the following equations:

Demand: $P = 50 - Q$

Supply: $P = 20 + 2Q$

Find the equilibrium price and equilibrium quantity. (2)

- b) Suppose that the market a monopoly; that is, the supply curve in a) is the marginal cost curve for the monopolist.

- i) Find the profit maximizing output, price and profit for the firm. (3)
- ii) Compare the equilibrium price and quantity for the Monopolist with the price and quantity for the competitive firm. (2)
- iii) Show the social cost of monopoly power using an appropriate diagram (5)

- c) Now suppose that the market is a duopoly with two identical firms whose marginal cost curves are given by the following equations:

$$MC_1 = 20 + 4Q_1$$

$$MC_2 = 20 + 4Q_2$$

If the market demand function is given by: $P = 50 - Q$ where $Q = Q_1 + Q_2$. In this market the quantity produced by each firm does not change the quantity produced by the other firm.

- i) What type of a duopolistic market is this? (2)
- ii) Find the reaction function for each firm. (4)
- iii) Find the equilibrium output level for each firm. (2)
- iv) Find the market price and output at equilibrium. Compare the market price and output with those obtained in a competitive market and those obtained in a monopoly market. (5)

QUESTION 4

Write short explanatory notes on the following microeconomics concepts: (5 marks each)

- i) Pareto Efficiency
- ii) Edgeworth Box
- iii) Differentiate between the General equilibrium and partial market equilibrium
- iv) Excess Demand
- v) Contract Cave

*****GOOD LUCK*****