

**UNIVERSITY OF SWAZILAND**  
**FACULTY OF SOCIAL SCIENCES**  
**DEPARTMENT OF ECONOMICS**  
**MAIN EXAMINATION PAPER: DECEMBER 2016**

**TITLE OF PAPER : INTERMEDIATE MICROECONOMICS**  
**COURSE CODE : ECON 302**  
**TIME ALLOWED : TWO (2) HOURS**

**INSTRUCTIONS :**

- 1. ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS OF YOUR CHOICE.**
- 2. QUESTION ONE (1) CARRY FORTY (40) MARKS AND THE OTHER QUESTIONS CARRY THIRTY (30) MARKS EACH.**
- 3. NON PROGRAMMABLE CALCULATORS ARE ALLOWED.**
- 4. WHERE NECESSARY, FIGURES ARE TO BE ROUNDED TO TWO (2) DECIMAL FIGURES.**

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

**Question 1 – Compulsory****(Total = 40 Marks)**

- a) Differentiate between the Weak Axiom of Revealed Preference (WARP) and the Strong Axiom of Revealed Preferences (SARP) [7 Marks]
- b) A consumer makes the following choices for various commodity bundles at the following prices:

$$(P_1, P_2) = (2, 2) \quad (X_1, X_2) = (10, 1)$$

$$(P_1, P_2) = (2, 1) \quad (X_1, X_2) = (5, 5)$$

$$(P_1, P_2) = (1, 2) \quad (X_1, X_2) = (5, 4)$$

Is this consumer consistent with their choices? [8 Marks]

- c) For the following indirect utility function  $V(P, M) = \frac{3}{2} \cdot \frac{M}{(P_x P_y)^{1/2}}$ , derive the Marshallian demand functions for Goods X and Y. [10 Marks]
- d) For the following expenditure function  $E(P, U) = \frac{2}{3} U (P_x P_y)^{1/2}$ , derive Hicksian or Compensated demand functions for Goods X and Y. [7 Marks]
- e) The Slutsky Equation can be used to decompose the total effect of a price change into the substitution and income effects. Using the expenditure function in question (d) above, decompose a price change into a substitution and income effects. [8 Marks]

**ANSWER ANY TWO (2) QUESTIONS FROM THE FOLLOWING:**

**Question 2**

**(Total = 30 Marks)**

- a) Differentiate between First Degree and Third Degree price discrimination by a monopoly firm. [5 Marks]
- b) Explain the conditions that should exist for a monopoly firm to practice price discrimination. [5 marks]
- c) You are an analyst that has been hired to advice a discriminating monopoly firm with the demand functions:

$$Q_1 = 32 - 0.4P_1 \quad - \quad \text{Market 1}$$

$$Q_2 = 18 - 0.1P_2 \quad - \quad \text{Market 2}$$

The cost function for the firm is  $TC(Q) = 50 + 40Q$  where  $Q = Q_1 + Q_2$ . Your job is to do an analysis in order to advice whether this firm should continue segmenting the market or not. [20 Marks]

**Question 3**

**(Total = 30 Marks)**

- a) Write brief explanatory notes on the following concepts
  - i) Pareto Efficiency
  - ii) Contract Curve
  - iii) Walras Law [3 Marks Each]
- b) Consider an economy with three (3) goods: (1) Cloth, (2) Wine, and (3) Bread. There are 10 thousand units of each of the goods available in the economy. The demand functions for wine and bread are given by the following functions respectively:

$$D_2 = -2\frac{P_2}{P_1} + \frac{P_3}{P_1} + 11$$

$$D_3 = -\frac{P_2}{P_1} - 2\frac{P_3}{P_1} + 18$$

- i) Determine the relative prices of Wine and Bread with respect to the price of Cloth [6 Marks]
- ii) Using Walras law determine the excess demand function of Cloth. [10 Marks]
- iii) Prove that the excess demand for Cloth is homogenous of degree zero (0) in relative prices. [5 Marks]

**Question 4**

**(Total = 30 Marks)**

- a) What is a **Zero Sum Game**? [3 Marks]
- b) What is a **Dominated Strategy**? [3 Marks]
- c) Create a normal form game of your choice with the relevant payoffs that illustrates the concept of a dominated strategy. (Game should have two players and three strategies) [6 Marks]
- d) The **Prisoner's dilemma** game shows that rational individuals might not choose to cooperate even if it might seem that it is in their best interest to do so. Analyse this statement with an example of your choice of a Prisoner's dilemma game. [13 Marks]
- e) Represent the **Prisoner's dilemma** game in (c) above as an extensive form. [5 Marks]