



**MASTER OF SCIENCE IN APPLIED ECONOMICS (MSAE)**  
**Sample Question (Econ Major)**  
**Time Duration: 50 Minutes**  
**Total Points: 90**

**Instructions:** Answer all the questions in this booklet and in the spaces provided. There are three sections. Section 1 deals with microeconomics, Section 2 with macroeconomics and Section 3 with statistics. Marks are indicated in parentheses. All three sections must be passed separately.

## Section 1: Microeconomics

1. The following two equations describe supply and demand in a market respectively.

$$13P - Q_S = 27$$

$$2Q_D + 8P - 48 = 0$$

Here,  $Q_D$  represents quantity demanded,  $Q_S$  is the quantity supplied and  $P$  represents price.

Find the equilibrium market quantity and price. (Hint: in equilibrium,  $Q_D = Q_S$ )

**[15 points]**

2. The income elasticity of demand for product  $H$  is negative and equal to  $-0.4$ .

(a) Is  $H$  an inferior good or a normal good? **[5 points]**

(b) If the quantity demanded of  $H$  changes from 20 units per week to 16 units per week, calculate the associated percentage change in income. **[5 points]**

(c) Has income increased or decreased? **[5 points]**

## Section 2: Macroeconomics

Assume that the consumption function is given by

$$C = 100 + 0.60(Y - T)$$

Planned Investment is 200, Government Purchases are 120 and Taxes equal 50.

(a) What is the equilibrium level of income? [Hint: The total income of a country is referred to as GDP] **[15 points]**

(b) Given the initial information for (a), what level of government purchases is needed to achieve an income of 1,800? **[15 points]**

## Section 3: Statistics

For the probability distribution shown in the following table, calculate the weighted mean. **[30 points]**

$X$	8	12	16	20	24
$P(X)$	$1/8$	$1/6$	$3/8$	$1/4$	$1/12$