

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY  
FACULTY OF COMMERCE  
DEPARTMENT OF BANKING  
BACHELOR OF COMMERCE HONOURS DEGREE IN BANKING**

**APPLIED ECONOMICS I - CBA 4103**

**FINAL EXAMINATION**

**APRIL 2009**

**TIME: 3 HOURS**

**INSTRUCTIONS TO CANDIDATES**

- The paper contains **SIX (6)** questions.
- Answer question one (1) and any other three (3) questions.
- All questions carry equal marks [**25 marks**].
- Start the answer to each question on a fresh page of the answer sheet.
- Indicate on your answer booklet whether you are in the conventional or parallel programme

**INFORMATION FOR CANDIDATES**

**Questions may be written in any order, but must be legibly numbered.**

**The businesses in this question paper are intended to be fictitious.**

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**[Turn over]**

## QUESTION 1

- a) If the following is the demand for money function

$M = 0,14Y + 76(r - 2)^{-1}$ , where Y is the annual national income, r is the Interest rate.

Compute  $\frac{dM}{dY}$  &  $\frac{dM}{dr}$  and discuss their economic interpretations. [8 marks]

- b) Given  $Y = C + I$

$C = f(Y)$ , where Y is the national income, C is consumption and I is investment.

Suppose that  $C = f(Y) = 95,05 + 0,712Y$ ,

- i. Find Y in terms of I. [2marks]
  - ii. Find the expression of  $\frac{dY}{dI}$  and give its economic interpretation [4 marks]
- c) The following is an equilibrium national income model:

$$Y - C(Y) - I(i) - G_0 = 0 \quad (0 < C' < 1; I' < 0),$$

$$kY + L(i) - MS_0 = 0 \quad (k \text{ is a positive constant ; } L' < 0)$$

- i. Is the first equation in the nature of an equilibrium condition? [2marks]
- ii. What is the total quantity of money demanded in this model? [1 marks]
- iii. Analyze the comparative statics of the model when money supply changes (monetary policy) and when government expenditure changes (fiscal policy) and interpret their economic meanings.

[8 marks]

**TOTAL**

**[25 MARKS]**

## QUESTION 2

- a) A firm has the following total cost and demand functions:

$$C = \frac{1}{3}Q^3 - 7Q^2 + 111Q + 50$$

$$Q = 100 - P$$

- i. Write out the total revenue function R in terms of Q [2 marks]
- ii. Formulate the total profit function  $\Pi$  in terms of Q [3 marks]
- iii. Find the profit maximizing level of output Q [5 marks]
- iv. What is the maximum profit [3 marks]

b) A two product firm faces the demand and cost functions below:

$$Q_1 = 40 - 2P_1 - P_2$$

$$Q_2 = 35 - P_1 - P_2$$

$$C = Q_1^2 + 2Q_2^2 + 10$$

- i. Find the output level that satisfy the first order condition for maximum profit [7 marks]
- ii. What is the maximum profit? [5 marks]

**TOTAL [25 MARKS]**

### **QUESTION 3**

a) Given the classical Keynesian national income model of

$$Y = C + I_0 + G_0$$

$$C = a + b Y \quad (a > 0; 0 < b < 1)$$

Where  $Y$  and  $C$  are endogenous variables on one hand, and  $I_0$  &  $G_0$  are exogenously determined investment and government expenditures on the other hand.

- i. Explain the parameters **a** and **b** in the model above [4 marks]
- ii. Establish the static (equilibrium) values of national income ( $\bar{Y}$ ) and consumption ( $\bar{C}$ ) and clearly explain your results [9 marks]

b) A one commodity market has the following supply and demand curves:

$$Q = a - bP$$

$$Q = -c + dP$$

- i. Give the economic meaning of parameters  $a$ ,  $b$ ,  $c$ ,  $d$  [6 marks]
- ii. Find the equilibrium values of ( $\bar{Q}$ ) and ( $\bar{P}$ ). [6 marks]

**TOTAL [25 MARKS]**

#### **QUESTION 4**

- a) With the aid of an appropriate economic example, clearly explain the essence of the Lagrangean multiplier method. [4 marks]
- b) Given  $U = (x + 2)(y + 1)$  and  $P_x = 4$ ,  $P_y = 6$ ,  $B = 130$
- Write the Lagrangean function of the above utility function [6 marks]
  - Find the optimal levels of purchases of  $x$  and  $y$  [6 marks]
  - Estimate the effect of increasing the budget to 150 [6 marks]
  - Give the economic interpretation of the Lagrangean multiplier  $\lambda$  obtained in i above [3 marks]

**TOTAL**

**[25 MARKS]**

#### **QUESTION 5**

- a) To what extent do the following theories explain household savings behaviour?
- Absolute income hypothesis [4 marks]
  - The general intertemporal model [4 marks]
  - The permanent income hypothesis [4 marks]
  - The life cycle hypothesis [4 marks]
- b) What are the policy implications of the above theories? [9 marks]

**TOTAL**

**[25 MARKS]**

#### **QUESTION 6**

- a) Using the following theories, explain clearly the factors that determine investment in any country.
- The Tobin's Q theory [6 marks]
  - The neoclassical theory [6 marks]
  - The accelerator theory [6 marks]
- b) How applicable are these theories in Zimbabwe? [7 marks]

**TOTAL**

**[25 MARKS]**