



MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

**FOURTH YEAR SUPPLEMENTARY EXAMINATION FOR
BACHELOR OF ECONOMICS**

EET 301: MACROECONOMIC THEORY III

DATE: 27/9/2019

TIME: 11:00 – 1:00 PM

INSTRUCTIONS TO CANDIDATES

- (i) Answer question one (Compulsory) and any other two questions**
- (ii) Do not write on the question paper**
- (iii) Show your workings clearly**

QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Explain the major goals of macroeconomic policy (8 marks)
- b) Given the following Macroeconomic model

$$Y = C + I + G + X$$

$$C = 100 + 0.9Y^d \quad (\text{Consumption function})$$

$$I = 200 - 500r \quad (\text{Investment function})$$

$$M = 0.8Y - 2000r \quad (\text{Real money demand})$$

$$X = 100 - 0.12Y - 500r \quad (\text{Net export})$$

$$G = 200 \quad (\text{Government purchases})$$

$$T = 0.2 \quad (\text{Tax rate})$$

$$L = 800 \quad (\text{Real money supply})$$

Required

- (i) Derive the equations for IS and LM curves. (4 marks)
- (ii) Compute the r and y at which the two markets are clearing (3 marks)
- (iii) Compute the values of C , I , and M . (3 marks)
- c) Demonstrate using the four quadrant diagram how a decrease in taxes and an increase in government expenditure affects different macroeconomic variables (12 marks)

QUESTION TWO (20 MARKS)

- a) Using the equilibrium condition for determination of equilibrium national income:
Illustrate graphically the effects of an increase in the desire to save on equilibrium income under these circumstances:
 - i) When $\bar{i}$ and g are independent of y and (4 marks)
 - ii) When $\bar{i}$ and g are increasing functions of y . (4 marks)
- b) When taxes are fixed, the National Income equilibrium condition can be written as:

$$c(y - t) + \bar{i} + g = y = c(y - t) + s(y - t) + \bar{t} \dots\dots\dots (a)$$

Using Equation (a), derive the following:

- i.) Investment Multiplier (3 marks)
- ii.) Balanced Budget Multiplier (4 marks)
- c) Suppose now tax revenues are an increasing function of income. Rewrite the National Income equilibrium condition (a) and using the new equation, derive the following:
 - i) Investment Multiplier (3 marks)
 - ii) Government Expenditure/ Purchases Multiplier (2 marks)

QUESTION THREE (20 MARKS)

- a) Using the Product market and the money market equilibrium conditions:
 - i) Derive the Fiscal Policy Multiplier (7 marks)
 - ii) Given the following equations, calculate the fiscal policy multiplier and interpret it. (4 marks)

$$C = 100 + 0.8Y^d \text{ (Consumption function)}$$

$$I = 10 - 10r \text{ (Investment function)}$$

$$L = Y - 100r \text{ (Real money demand)}$$

$$G = 10 \text{ (Government purchases)}$$

$$T = 0.25 \text{ (Tax rate)}$$

$$M = 295 \text{ (Real money supply)}$$

- iii) Derive the expression for the slope of the IS Curve (3 marks)
- iv) When is fiscal Policy most effective, fairly effective and ineffective? Explain. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Using the equilibrium conditions in product and money markets derive the monetary policy Multiplier. (6 marks)
- b) Given the following equations from a certain economy:

$$C = 100 + 0.8Y^d \quad (\text{Consumption function})$$

$$I = 10 - 10r \quad (\text{Investment function})$$

$$L = Y - 100r \quad (\text{Real money demand})$$

$$G = 10 \quad (\text{Government purchases})$$

$$T = 0.25 \quad (\text{Tax rate})$$

$$M = 295 \quad (\text{Real money supply})$$

Required

- i) Calculate the monetary multiplier policy and interpret it. (4 marks)
- ii) Suppose equilibrium income increases by 40, by how much must real money stock increases for the new level of income to be in equilibrium. (2 marks)
- iii) Derive the slope of the LM curve and demonstrate how it affects the effectiveness of monetary policy (8 marks)

QUESTION FIVE (20 MARKS)

- a) What is Monetary and Fiscal Policy Mix? (2 marks)
- b) Suppose for instance, the economy is experiencing interest rates that are too high to encourage investments, explain how a policy mix can be used to correct the situation in this economy. (6 marks)

- c) Proof that a profit maximizer in a perfectly competitive market will employ labour up to the point where the value of marginal product of labour equals the price of labour. Use the information to derive the curve for demand for labour (6 marks)
- d) Demonstrate graphically how a worker assigns his or her time between work and Leisure. Indicate the optimal point under the work-leisure decision for a utility maximizing worker. (6 marks)