



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**MAIN EXAMINATION**

**UNIVERSITY EXAMINATIONS  
2020/2021 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
MASTER OF ARTS IN ECONOMICS**

**COURSE CODE: ECO 808**

**COURSE TITLE: ADVANCED MACROECONOMICS**

**DATE: THURSDAY, 21-12-2023**

**TIME: 2:00 -5:00**

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**INSTRUCTIONS TO CANDIDATES**

**ATTEMPT QUESTION ONE AND ANY OTHER THREE**

**TIME: 3 Hours**

**MMUST observes ZERO tolerance to examination cheating**

**This Paper Consists of 4 Printed Pages. Please Turn Over.**

### QUESTION ONE

- a) Discuss the importance and limitations of comparative static analysis in macroeconomics outlining its limitations. (20 marks)
- b) Consider the following characterization of the IS-LM and DGE models;

IS-LM

$$y = c(y, r) + i(y, r) + g$$

$$m - p = L(y, r)$$

DGE

$$\Delta c = -\frac{1}{\sigma}(r - \theta) = 0$$

$$y = c + i + g$$

$$y = f(k)$$

$$\Delta k = i$$

$$f_k = r$$

where  $y$  is output,  $c$  is consumption,  $i$  is investment,  $k$  is the capital stock,  $g$  is government expenditure,  $r$  is the real interest rate,  $m$  is the log nominal money supply and  $p$  is the log price level.

- i) Discuss the main differences in the two models and on the underlying approaches to macroeconomics. (10 marks)
- ii) Discuss the implication of the two models for effectiveness of monetary and fiscal policy. (10 marks)

### QUESTION TWO

- a) Discuss how a country's international monetary arrangements affect its conduct of monetary policy. (10 marks)
- b) Discuss factors that influence how a country carries out its monetary policy. (10 marks)

### QUESTION THREE

Consider an abstract closed economy with an economically active government with the following assumption:

No external dealings and monetary repercussions but  $G \neq 0, T \neq 0$

The model specification is provided as follows;

$$Y = C + I + G_0$$

$$C = C_0 + C(Y^d, r) \text{ but } Y^d = Y - T$$

$$I = I_0 + I(Y, r)$$

$$T = T_0 + T(Y)$$

- i) Compute the solution for National income equilibrium. (10 marks)
- ii) Predict the comparative static analysis on how; (5 marks)
  - a) Exogenous spending affect  $\bar{Y}$  ?
  - b) Exogenous taxation affect  $\bar{Y}$  ?
- iii) Explain the impact of government economic activity . (5 marks)

#### QUESTION FOUR

- a) Uses of the national accounts National accounts statistics are important for economic policy and analysis. Discuss the roles played by the national accounts statistics. (10 marks)
- b) "About once every five years, the system of National accounts (SNA) is rebased to keep up with the evolution of prices in the economy". What happened during Kenya's rebasing in 2014, why did Kenya need to rebase its GDP and what was the impact of rebasing?

(10 marks)

#### QUESTION FIVE

The output gap of an economy  $x$  depends on the real interest rate  $r$  in the following way;

$$x_t = -\alpha(r_t - r^*) + \varepsilon_t^d \quad (5.1)$$

where  $\varepsilon_t^d$ : stochastic demand shock with an expected value  $E_{t-1} \varepsilon_t^d = 0$

The central bank controls inflation by means of an interest rate rule, setting the real interest  $r$  conditional on expected inflation  $E_{t-1} \pi_t$

$$r_t = r^* + \beta E_{t-1} \pi_t \quad (5.2)$$

The current inflation rate  $\pi_t$  is given by the Phillips curve

$$\pi_t = \gamma x_t + E_{t-1} \pi_t + \varepsilon_t^s \quad (5.3)$$

where  $\varepsilon_t^s$ : stochastic supply shock with an expected value  $E_{t-1} \varepsilon_t^s = 0$

Required:

(20 marks)

- a) Provide one example each of a supply shock and a demand shock.
- b) What is the meaning of  $r^*$  and which factors are reflected in this variable?
- c) Using the assumption of rational expectation, determine the expectations  $E_{t-1} \pi_t$  and  $E_{t-1} x_t$
- d) Demonstrate how supply and demand shocks affect the output gap  $x$  and the inflation rate  $\pi$  in this model. Discuss your results.

