



Strathmore
UNIVERSITY

Strathmore Institute of Mathematical Sciences
BBS FENG/FE
SPECIAL EXAMINATION
BSE 2208: MACROECONOMICS II

DATE: 29th July, 2024

Time: 2 Hours

Instructions

- Answer Question ONE (COMPULSORY) and any other TWO questions
1. (a) Consider the following Neoclassical model of the economy, where r is in percentage terms. Show all your work.

Supply	Demand
$Y = F(K, L) = \sqrt{KL}$	$C = 20 + 0.8(Y - T)$
$MPL = 0.5\sqrt{K/L}; MPK = ?$	$I = 50 - 5r$
$K = 900; L = 100$	$G = 40, T = 50$

- (i) Calculate the income that goes to workers and owners of capital. (6 Marks).
- (ii) Find the interest rate that produces equilibrium in either the goods market or the loanable funds market (3 Marks)
- (b) Assume the currency (C) is KES. 500 billion and bank reserves (R) are KES.2 trillion. The minimum allowable reserve requirement set by the Central Bank of Kenya is 10% of deposits. What is the money supply if banks lend the maximum allowable and households decide to hold 20% of deposits in the form of cash? (3 Marks).
- (c) In the country of Wiknam, the velocity of money is constant. Real GDP grows by 3 percent per year, the money stock grows by 8 percent per year, and the nominal interest rate is 9 percent. what is
- (i) the growth rate of nominal GDP? (4 Marks).
- (ii) the inflation rate? (3 Marks).
- (d) Using the IS-LM model, show graphically and explain the effects of a monetary contraction. What is the effect on the equilibrium interest rate and level of output (4 Marks)

- (e) Briefly explain how the net capital outflow and the trade balance are related. **(4 Marks)**
- (f) Suppose that an economy has the Philips curve;

$$\pi = \pi_{-1} - 0.5(u - 5)$$

where π and u represent inflation and unemployment respectively. What is the natural rate of unemployment? **(3 Marks)**

2. (a) Explain how each of the following events affects the monetary base, the money multiplier, and the money supply.
- The Central bank buys bonds in an open market operation **(4 Marks)**
 - The Central Bank reduces its lending to banks through Term Auction Facility **(4 Marks)**
- (b) Discuss SIX costs of expected/unexpected inflation **(12 Marks)**
3. (a) Consider the recent climate talks. Assume countries agree to a 1.5C maximum increase in average global temperatures by reducing the amount of carbon emissions from manufacturing firms. Use the AD-SRAS-LRAS model to show graphically how this will impact a macroeconomy in the short and long-run. Label your initial equilibrium “A”, short-run equilibrium “B”, and the long-run equilibrium “C”. Explaining the transition of the economy and how a central bank could use monetary policy to counteract the climate policy **(10 Marks)**
- (b) In the context of Mundell-Fleming model, explain what is meant by concept of the “impossible trinity” **(10 Marks)**
4. (a) Consider the impact of an increase in thriftiness in the Keynesian cross model. Suppose the consumption function is

$$C = \bar{C} + c(Y - T)$$

where C is a parameter called autonomous consumption that represents exogenous influences on consumption and c is the marginal propensity to consume

- What happens to equilibrium income when the society becomes more thrifty, as represented by a decline in \bar{C} **(4 Marks)**
 - What happens to equilibrium saving? **(4 Marks)**
- (b) Use the IS-LM model to predict the short-run effects of each of the following shocks on income, the interest rate, consumption, and investment. In each case, explain what the Central bank should do to keep income at its initial level. Be sure to use a graph in each of your answers.
- After the invention of a new high-speed computer chip, many firms decide to upgrade their computer systems **(6 Marks)**
 - A wave of credit card fraud increases the frequency with which people make transactions in cash. **(6 Marks)**

5. (a) A small open economy is described by the following equations:

$$C = 50 + 0.75(Y - T)$$

$$I = 200 - 20r$$

$$NX = 200 - 50\epsilon$$

$$M/P = Y - 40r$$

$$G = 200$$

$$T = 200$$

$$M = 3000$$

$$P = 3$$

$$r^* = 5$$

- (i) Derive the IS^* and LM^* curves (**4 Marks**)
- (ii) Calculate the equilibrium exchange rate, level of income, and net exports (**3 Marks**)
- (iii) Assume a floating exchange rate. calculate what happens to the exchange rate, the level of income, net exports, and the money supply if the government increases its spending by 50. Use a graph to explain what you find. (**5 Marks**)
- (b) Explain the differences between demand-pull inflation and cost-push inflation (**4 Marks**)
- (c) Explain what circumstances might it be possible to reduce inflation without causing a recession. (**4 Marks**)

*****END*****