BCOM Y1S2: HBC 2241: INTRODUCTION TO MACROECONOMICS
CAT 1 & 2
Attempt ANY TWO questions

QUESTION ONE

(a) The Goods and money markets for an economy are given by the following;

Goods Market
C= 89 + 0.6Y
I = 120-150r
Money Market
Mt = 0.1Y- 250r + 240
Ms = 275

Where C is consumption, Y is income, r is the rate of interest, Mt is the transactional, precautionary and speculative demand for money and Ms the money supply. Compute the equilibrium income and interest rate **[4 marks]**

Answer:
Y= 89 + 0.6Y + 120 -150r
0.4Y+150r = 209…… [1]
0.1Y - 250r = 25…… [2]
r = 0.06 =, Y= 500

(b) The government wants to reduce the fiscal deficit, but it is worried about the negative consequences such a policy might have on the level of output. What combination of monetary and fiscal policies would you recommend to decrease the deficit? Use suitable diagrams to illustrate. **[5 marks]**

A fiscal contraction (increase in taxes or decrease in government expenditure) reduces the fiscal deficit but has negative effects on the level of output (shift IS curve down). To mitigate the negative effect on output, the fiscal contraction can be implemented together with a monetary expansion (shift LM curve to the right). The monetary expansion promotes investment through lower interest rates. Eventually, the increase in investment can compensate the decrease in the public expenditure (or increase in taxes). [4 marks]

(c) How could the government offset the inflationary pressure of a fiscal expansion

While an expansionary fiscal policy shifts the IS to the right, increases Y and the inflationary pressure, the government can sell T-bills through open market transactions, which reduces money supply, and in turn, shifts the LM to the left to offset the increase in Y and the inflationary pressure. The result of the fiscal expansion, in this case, will be an increase in the interest rate. [4 marks]

(d) Highlight the likely effect of the introduction of ATMs on Gross Domestic Product **[4 marks]**

The introduction of the ATMs reduces demand for money [lowers the liquidity preference, people can easily go to the bank to withdraw money and this means lower average money holdings], This increases the money supply, this rise in money supply shifts the LM to the right, resulting in lower interest rate and higher GDP. [4 marks]

(e) The government is planning to leverage a 5% tax on every ATM and debit card transaction. The government projects that this will increase output since it shall be an incentive for people to spend rather than to keep their money in the bank. Advise the government on the probable implication(s) of such a policy. **[5 marks]**

The tax on ATM transactions does not change the demand for money. Rather, it increases the proportion of money held as currency. This decreases the money multiplier, and therefore, the money supply for a given level of Central Bank money. The fall in money supply leads to a left-ward shift in the LM curve, and an increase in the equilibrium interest rate and a decrease in equilibrium output [4 marks]

(f) Compute Y*****, C***** and Investment for the following model:

Y= C + I + Go
C= 100 + 0.8Y
Io = 80 + 0.1Y
Go = 200

Where C is consumption, Y is income, I is investment, Go is autonomous government spending, **[4 marks]**

Solution: Y= 100 + 0.8Y + 80 + 0.1Y + 200
Y- 0.9Y= 380
Y= 380/0.1
Y= 3800
C= 100+0.8(3800) = 3140
I= 80 + 0.1(3800) = 460

(g) Consider the following consumption and tax functions

C= 120 + 0.7Yd
T= to +t1Y
Y= 400
Where C is consumption, Y is income, Yd is disposable income given by [Y-T], T is taxes, to is lump sum tax, t_1Y is proportional tax **[4 marks]**

Compute;

i. The level of consumption expenditure if no taxes are levied
C= 120 + 0.7(400) =400

ii. The level of consumption if a lump sum tax of 20 is levied on income
C= 120 + 0.7(380) = 386

iii. The level of consumption if in addition to the lump sum tax of 20 in (ii); a proportional tax of 0.1(10%) is levied on income

C= 120 +0.7(Y- (20 + 0.1(400))
C= 120 + 0.7(400-60)
C= 120 + 0.7(340) = 358 [4 marks]

QUESTION TWO

(a) Discuss the methods Central Banks use to control the quantity of money circulating in an economy **[10 marks]**
Answer

1. **Open Market Operations –** Refers to the sales or purchases of marketable securities which are conducted in the open market by the central bank. The central bank sells its holdings of market securities in order to order to mop up excess liquidity. On the other hand, when the central bank anticipates liquidity deficiency then it injects additional liquidity by purchasing the existing stock of securities.
   [2 marks]
2. **Special deposits** -A central bank may have the power to require banks to lodge special deposits with it. Calls for special deposits are usually expressed as a uniform percentage of each bank's total eligible liabilities. Since special deposits are compulsory, by using them the central bank can be sure of reducing the banks' liquid assets and then are equivalent to an open market sale. (2 marks)
3. **Interest rate policy-** Changes in the rate of interest at which the central bank provides liquidity to the banking system are often linked to open market operations. Raising interest rates depresses the demand for loanable funds which slows down the growth of money supply**. [2 marks]**
4. **Lending ceilings-** Restrict the maximum amount that CBs lend to customers **[2 marks]**
5. **Changing the Cash reserve ratio for CBs-**The liquidity ratio can be defined as the proportion of total assets of a bank which can be held in the form of cash and liquid assets. **[2 marks]**
6. **Requests/Persuasion-** Persuade CBs to lower/raise their interests rates in order to increase/decrease the liquidity **[2 marks]**

[Any 5, well explained @ 1 mark]

(b) Show the relationship between the price of a bonds and interest rates, first on a well labelled diagram and then using a suitable numerical example **[10 marks]**

Answer:
Intuitive explanation: **[2 marks]**
Numerical example: Suppose a bond is issued for Kes 200 and its annual return (coupon) is Kes 20. The annual rate of interest is 10%. If the market rate of interest falls to 5% the price of the bond will increase to Kes 400. The rationale behind this is that in order to secure the same return of Kes 20 in any other financial asset Kes 400 would have to be invested. **[5 marks]**
Diagrammatic illustration [3 marks]

QUESTION THREE

(a) Using practical examples evaluate A. Ando Modigliani's life cycle hypothesis **[10 marks]**

Answer:

- The life cycle hypothesis developed by A. Ando and M. Modigliani in the 1950s and claims that each individual household will make an estimate of its expected life-time income and will then devise a long-term consumption plan based on this estimate **(1 mark).**
- Typically, in the early years of income earning (say, from 18 to 30), households spend more than their current incomes. This period of "dissaving" is possibly largely because of the availability of consumer credit facilities **(2 marks).** In the middle years of income earning (say, from age 30 to 60), the typical household will spend less than its income, **2 marks** partly to repay earlier debts and partly to accumulate wealth for use in later years **(1 mark)**
- After retirement this accumulated wealth is gradually depleted as once again dissaving occurs **(1 mark)**

Correctly drawn and labelled diagram 3 marks

(b) Discuss the Keynesian sources of demand for money **[10 marks]**

Keynes identified three reasons why people hold wealth as money rather than as interest-bearing Securities

- **The transactions motive:** Households need money for their day-to-day purchases. The level of transactions demand depends on an individual's income and on how often the individual is paid and engages in monetary transactions**.** **[2 marks]**
- **The precautionary motive:** in this case money is held in order to finance unexpected and therefore unplanned expenditures. Precautionary demand depends mainly on the level of income**.** **[2 marks]**
- **Speculative demand:** in this case people may choose to keep ready money to take advantage of profitable opportunities that may arise in financial markets such as investing in bonds. There is an inverse relationship between the rate of interest and the speculative demand for money as depicted in the figure below **[3 marks]**

Correctly drawn and labelled diagram **[3 marks]**

QUESTION FOUR

(a) Given:

$Y = C + I_o + G_o$…… (1)

$C = a + b(Y-T)$…… (2)

$T = d + tY$…… (3)

Compute the equilibrium values of Y*, C* and I* **[5 marks]**

Answer:

$Y = C + Io + Go$……..(1)

$C = a + b(Y-T)$……(2)

$T = d + tY$…… ……(3)

Substitute 3 & 2 into 1

$Y = a + b(Y-T) + I_o + G_o$

$Y = a + b(Y- d -tY) + I_o + G_o$

$Y- bY + btY = a + I_o + G_o$

$Y^* = a + Io + G_o$

(1-b + bt)

$T^* = d + t\ a + I_o + G_o$

1-b + bt

$C^* = a + b\ a + I_o + G_o - d + t\ a + I_o + G_o$

1- b + bt) 1- b +bt

(b) Using practical examples, discuss the determinants and role of aggregate consumption and investment in an economy **[15 marks]**

Answer: Definition of consumption as the flow of households' spending on goods and services which yield utility in the current period: **[1 mark]**

Definition of Investment as firms' spending on goods which are not for current consumption but which yield a flow of consumer goods and services in the future. (1 mark)

Any 5 determinants/models of consumption and investment @ **2 marks**- Consumption: absolute income hypothesis; permanent income hypothesis, relative income hypothesis, lifecycle hypothesis. Investment: interest rates, security, political stability, business expectations, **[10marks; any 5 determinants @ 2 marks]**

Consumption is the largest component of aggregate demand in the economy and plays a vital role in business cycle fluctuations. Analysing consumption is also important for capital accumulation and growth**.** **[1 mark]**

Both Investment and Consumption play an important role in determining equilibrium national income and employment and a change in either of them will cause national income to change through the multiplier effect

[1mark]

Consumption and Investment are useful for the purposes of economic analysis to break down consumption and known its composition.. For instance of durables, washing machines, non-durables…**1 mark.** Economist pay considerable attention to consumption expenditure because they are interested in welfare which ultimately derives from the utility people gets from consumption **1 mark [any 5 ideas @ 1 mark]**

QUESTION FIVE

(a) Using the Keynes's analysis of the speculative demand for money, explain how money demand will be affected if people suddenly decide that the normal level of the interest rate has declined. **(4 marks)**

Solution: The demand for money will decrease. People would be more likely to expect interest rates to fall and therefore more likely to expect bond prices to rise. The increase in the expected return on bonds relative to money will then mean that people would demand less money

(b) Explain the effect on interest rates and aggregate output of: (i). an autonomous export boom (ii). an increase in government spending **(4 marks)**

Solution: The increase in net exports shifts the *IS* curve to the right, and the equilibrium level of interest rates and aggregate output will rise. While the increase in government spending shifts the IS curve to the right, and the equilibrium level of interest rates and aggregate output will rise.

(c) Explain how aggregate output and the price level change when:

i. the Central Bank increases money supply at the same time that Parliament enacts and implements an income tax cut **(4 marks)**

Solution: Both the increase in the money supply and the income tax cut will increase the quantity of output demanded at any given price level and so will shift the aggregate demand curve to the right. The intersection of the aggregate demand and aggregate supply curve will be at a higher level of both output and price level in the short run. However, in the long run, the aggregate supply curve will shift leftward, leaving output at the natural rate level, but the price level will be even higher.

ii. a national sales tax is reintroduced **(4 marks)**

Solution: Because goods would cost more, the national sales tax would raise production costs, and the aggregate supply curve would shift to the left. The intersection of the aggregate supply curve with the aggregate demand curve would then be at a higher level of prices and a lower level of aggregate output; aggregate output would fall, and the price level would rise.

(d) Show in a demand and supply diagram the effect on the equilibrium level of the interest rate and the slope of the LM curve of a fall in aggregate output **(4 marks)**

Solution: When aggregate output falls, the demand for money falls, shifting the money demand curve to the left, which causes the equilibrium interest rate to fall. Because the equilibrium interest rate falls when aggregate output falls, there is a positive association between aggregate output and the equilibrium interest rate, and the LM curve slopes up.

(e) An important way in which the Central Bank decreases the money supply is by selling bonds to the public. Using a supply and demand analysis for bonds, show the effect of this action has on interest rates. **(4 marks)**

Solution: When the CBK sells bonds to the public, it increases the supply of bonds, thus shifting the supply curve B^s to the right. The result is that the intersection of the supply and demand curves B^s and B^d occurs at a lower price and a higher equilibrium interest rate, and the interest rate rises. With the liquidity preference framework, the decrease in the money supply shifts the money supply curve *Ms* to the left, and the equilibrium interest rate rises. The answer from the loanable funds framework is consistent with the answer from the liquidity preference framework.

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QUESTION FIVE

(a) Explain the **causes** and **effects** of the global financial crisis commenting critically on the **responses** that were effected by governments to end this crisis **[10 marks]**

(b) Assess the plausibility of the main conclusions of Classical and Keynesian theory of employment **[10 marks]**

a) What are the main objectives of macroeconomics theory? (4 Marks)

b) Discuss the main problems of measuring national income specifically in developing countries. (6 Marks)

c) Discuss the causes of income inequalities in Kenya and explain the measures that could be taken to reduce income inequality. (10 marks)

d) Discuss the factors determining the level of households' consumption in developing countries. (6 marks)

e) Explain the Irvin Fisher's quantity theory of money. (4 marks)

QUESTION TWO

a) Describe factors affecting the size of a national income (8 marks)

b) Briefly explain the Keynesian theory of consumption (6 marks)

c) National income accounting is very paramount to any country that is conscious about its growth and development. Discuss the difficulties in estimation of national income (8marks)

QUESTION THREE

a) Discuss benefits developing countries would realize from international trade (8 marks)
b) Discuss the arguments for and against protection of local industries from foreign competition (6 marks)
c) Explain the functions of Central Banks. (6 marks)

(Total: 20 marks)