ECS1601
SOME SUGGESTED SOLUTIONS (2015 Revision)

OCTOBER/NOVEMBER 2014
SECTION A
QUESTION 1

(i) **Define the Gross Domestic Product (GDP) (4)**
The total value of all final goods and services produced within the boundaries of a country in a specific period of time.

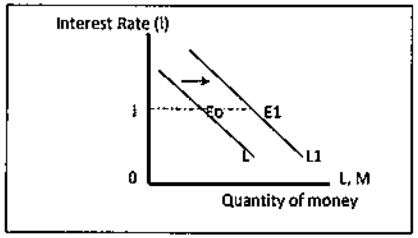
(ii) **Define Fiscal Policy (3)**
Action taken by government in respect of government spending, taxes and borrowing in order to influence the economy.

(iii) **What are the two main sub-accounts of the balance of payments? (2)**
Current Account
Financial Account.

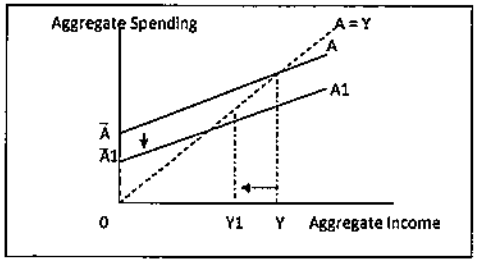
(iv) **What are the main sources of economic growth viewed from the demand side? (3)**
Increase in aggregate demand; increase in exports; import substitution

QUESTION 2

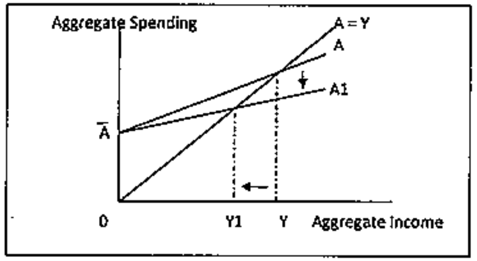
(i) **Use the following diagrams to show how the equilibrium in the money market changes if the GDP increases. Remember to label your diagram. (3)**



(ii) **Given a Keynesian model of an open economy, illustrate on the following diagram the impact of an increase in autonomous imports on the equilibrium level of income. (3)**

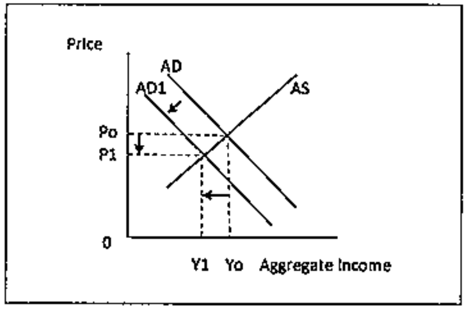


(iii) **Given a Keynesian model of an open economy, illustrate on the following diagram the impact of an increase in the marginal propensity to import on the equilibrium level of income. (3)**



NOTE: this same graph could be used to represent and increase in the tax rate or a decrease in the marginal propensity to consume! Make sure you understand why.

(iv) **Use the following diagram to illustrate the effect of an increase in interest rates on prices and production in the AD-AS model. Remember to label your diagram. (3)**



QUESTION 3

(i) **Given the following information**
In a country with a population of 75 million people there are 19 million children under the age of 15 years, 26 million employed, 8 million pensioners, 6 million unemployed and 1 million full-time students. Calculate the unemployment rate.

Unemployment rate = [No. of unemployed ÷ EAP] x 100
= [6 ÷ (26m + 6m + 1m)] x 100
= [6 ÷ 33] x 100 = 18.2%

NOTE: EAP refers to the economically active population. Much the same as the Labour Force (LF).

(ii) Given the following information:

$C = 100 + 0.8Y$

$Y = 2000$

Calculate:

- **Induced consumption if Y = 2000**

  Induced consumption = cY

  = 0.8(2000)

  = 1600

- **Consumption spending if Y = 2000**

  Consumption spending = 100 + 0.8Y

  = 100 + 1600

  = 1700

- **Savings if Y = 2000**

  Derive the saving function from the consumption function:

  $S = -100 + 0.2Y$

  $= -100 + 0.2(2000)$

  $= -100 + 400$

  $= 300$

(iii) Given the following information:

$C = 400 + 0.6Y$

$I = 500$

Calculate:

- **The multiplier**

  $\alpha = \frac{1}{1-c}$

  $= \frac{1}{1-0.6} = 2.5$

- **The equilibrium level of income**

  $Y = \alpha(\bar{A})$

  $= \frac{1}{1-c}(\bar{C} + \bar{I})$

  $= 2.5 \times (400 + 500)$

  $= 2250$

QUESTION 4

(i) Explain the impact of an increase in the tax rate on the equilibrium level of income in a Keynesian model of an economy. (4)

When the tax rate increases disposable income (Yd) decreases.

Households and companies will have less income to spend and so aggregate spending (A) will decrease.

Because the tax rate impacts on the marginal propensity to consume, the slope of the A curve will change (swivel downwards).

The equilibrium level of income will decrease because people are spending less.

(ii) Explain using a Keynesian model of the economy why the decrease in economic activity in Europe has a negative effect on the level of employment in South Africa. (5)

European countries are important trading partners for South Africa (SA) and so a decline in economic activity in these countries will lead to a decrease in SA exports.

A decrease in exports causes aggegate spending to decrease in SA and the aggregate spending curve (A) will shift downwards.

This decrease in A will lead to a decrease in output in the economy and equilibrium level of output (Y) will decrease.

A decrease in Y means that fewer people are likely to be employed, so employment will decrease and unemployment will increase.

(iii) Explain how monetary policy can be used to combat demand-pull inflation. (5)

Monetary policy

Monetary policy refers to the action taken by the central bank in respect of money supply and interest rates with a view to influencing the economy.

If aggregate demand in an economy increases faster than aggregate supply, the economy is likely to experience demand-pull inflation.

One of the ways to try and combat such inflation is to decrease aggregate demand. Contractionary/restrictive monetary policy can be used to try and achieve this. This is done by increasing the interest rate.

The increase in the interest rate will help to "cool down" the economy. People will be less likely to borrow money so the expansion of credit will slow down. People will spend less and the message will be delivered that prices are too high and spending should slow down giving aggregate supply a chance to catch up.

SECTION B: MCQs for OCT/NOV 2014

1. 1	11. 3	21. 3	31. 2
2. 2	12. 1	22. 2	32. 2
3. 2	13. 2	23. 3	33. 3
4. 2	14. 3	24. 2	34. 4
5. 3	15. 2	25. 2	35. 1
6. OS	16. 1	26. 3	36. 2
7. 1	17. 3	27. 3	37. 4
8. 1	18. 2	28. 2	38. 1
9. 3	19. 2	29. 1	39. 3
10. 2	20. 2	30. 2	40. 2

MAY/JUNE 2013

QUESTION 1

(i) Define the Gross Domestic Product (GDP) (4)

The total value of all final goods and services produced within the boundaries of a country in a specific period of time.

(ii) Name the three criteria for a good tax. (3)

Neutrality; Equity; Administrative simplicity

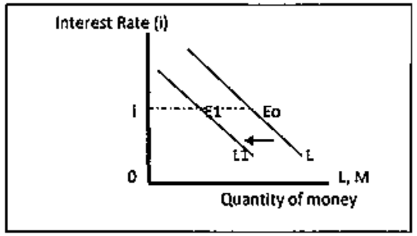
(iii) What are the two main sub-accounts of the balance of payments? (2)

Current Account

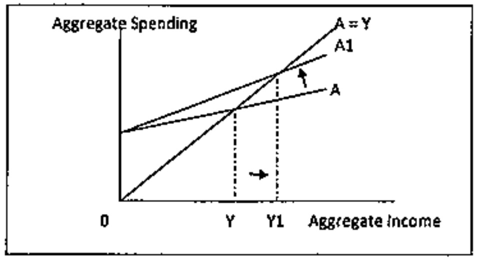
Financial Account

QUESTION 2

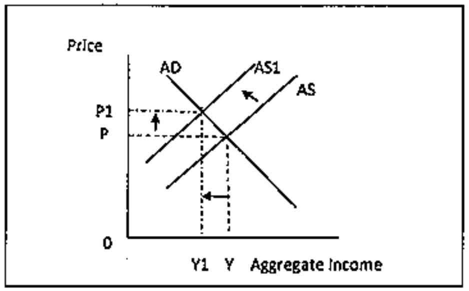
(i) Use the following diagram to show how the equilibrium in the money market changes if the level of income in the economy decreases. Remember to label your diagram. (3)



(ii) Use the following diagram to illustrate the effect of a decrease in proportional income tax on the equilibrium level of income in a simple Keynesian model of a closed economy. Remember to label your diagram. (3)



(iii) Use the following diagram to illustrate the effect of a decrease in productivity on prices and production in the AD-AS model. Remember to label your diagram. (3)



QUESTION 3

(i) Gabriel's disposable income increases from R2 000 to R2 500. As a result the saving increases from R300 to R450. Calculate his marginal propensity to consume. (3).

Marginal Propensity to consume = ΔC/ΔY OR 1 - mps
ΔY = R2500 – R2000 = R500
ΔS = R450 – R300 = R150
mps = ΔS/ΔY = 150/500 = 0.3
mpc = 1 – 0.3 = 0.7

(ii) Given the following information. [It seems UNISA has taken these longer calculations out of the syllbus for 2015]

C = 100 + 8/9Yd
I = 200
G = 150
t = ¼
X = 200
Z = 150 + 1/6Y

Calculate (Show all your calculations):

- The size of the multiplier (2)

$$\alpha = \frac{1}{1-\frac{8}{9}\left(1-\frac{1}{4}\right)+\frac{1}{6}} = 2$$

- The equilibrium level of income (3)

$Y = \alpha(\bar{A})$
$= 2 \times (100 + 200 + 150 + 200 - 150)$
$= 2 \times 500$
$= 1000$

- The value of induced imports at the equilibrium level of income. (2)

$$mY = \frac{1}{6} \times 1000 = 166.67$$

QUESTION 4

(i) Explain the effect of a strong South African rand on the demand for fruit pickers in the Western Cape. (4)

A strong rand means that the rand has appreciated against other currencies. When this happens exports become relatively more expensive on the international markets and people will buy less of South Africa's products. The demand for exported fruit from the Western Cape is likely to decrease and this will impact negatively on the fruit pickers as they will have less work and possibly lower wages.

(ii) The table below shows the GDP at current prices of country A for the years 1 and 2

YEAR	GDP at current prices
1	100
2	110

Given the information in the table, explain why it is impossible to tell whether the 10% increase in GDP from year 1 to year 2 represents economic growth. (3)
GDP at current prices includes the effects of rises in prices. For this reason it is not possible to tell whether the increase in GDP is from an increase in price or an increase in production for the specific period. In order to identify an increase in actual production, it is necessary to adjust GDP at current prices to GDP at constant prices (real GDP).

(iii) **Explain the effect of a decrease in the marginal propensity to import on the size of the multiplier. (3)**
When income increases in an open economy, a portion of that income is spent on imports. This is called the marginal propensity to import (*m*). If *m* decreases then it means that more of the increase in any income will be spent in South Africa and therefore the multiplier will increase. [Multiplier $= 1/(1 - c(1-t) + m)$ so if m decreases then the multiplier will increase]

(iv) **Explain the impact of an increase in the tax rate on the equilibrium level of income in a Keynesian model of an economy. (4)**

An increase in the tax rate will reduce disposable income and therefore aggregate spending will decrease. As a result of the decrease in aggregate spending, the equilibrium level of income will decrease. In the Keynesian model this would be illustrated by a downward swivel of the A line and a leftward movement of equilibrium income (Y) along the output axis.

(v) **Define monetary policy and explain how it can be used to combat demand-pull inflation (8)**
Monetary policy can be defined as measures taken by the monetary authorities to influence the quantity of money or the rate of interest with a view to achieving stable prices, full employment and economic growth. When the SARB increases the interest rate, it is using contractionary monetary policy to decrease the money supply in the economy and consequently the demand for credit. This, in turn, will lead to a decrease in aggregate demand (AD) and a leftward shift of the AD curve in the AD-AS model. As a result the general price level will decrease as will the level of output.

SECTION B: MCQs for MAY/JUNE 2013

1. 4	11. 1	21. 2	31. 1
2. 2	12. 3	22. 3	32. 2
3. 4	13. 2	23. 4	33. 3
4. 1	14. 4	24. 2	34. 3
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6. 4	16. 2	26. 4	36. 2
7. 1	17. 1	27. 4	37. 4
8. 2	18. 4	28. 3	38. 3
9. 4	19. 2	29. 4	39. 1
10. 2	20. 4	30. 4	40. 4

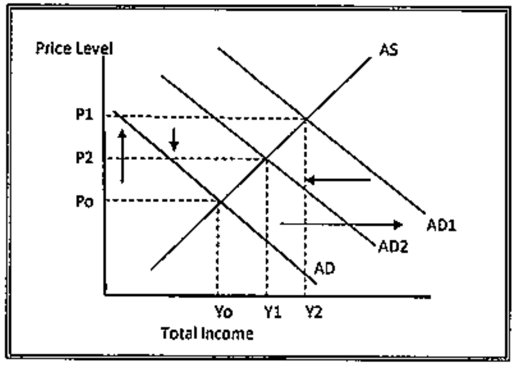
MAY/JUNE 2012
SECTION A
QUESTION 1

(i) **Name the three flows associated with the government in the circular flow model. (3)**
Government spending; Taxation; Transfer payments

(ii) **Name the four lags associated with the implementation of monetary policy. (4)**
Recognition lag; decision lag; implementation lag; impact lag.

QUESTION 2
(i) Illustrate on the following diagram how the imposition of an excise tax effects the equilibrium price and quantity of cigarettes. Remember to label your diagram. (3) **[NB: OLD SYLLABUS – this section is not included in the 2015 syllabus]**

(ii) **You are the chief economic advisor for the government of Mahala. Mahala is experiencing demand-pull inflation despite the stated objective of the government to achieve price stability. Explain, with the aid of the following diagram, what steps the government of Mahala should take to achieve this objective (9)**
- **Clearly indicate on the diagram any changes to aggregate demand or aggregate supply, prices and production that might result from the actions taken by the government. The diagram counts three (3) marks.**
- **In your explanation you must deal with the following:**
  The instruments of fiscal policy, how they are applied and what effects they have. Your explanation counts six marks.



EXPLANATION:
Fiscal policy refers to the policy of a government in respect of government spending, taxes and borrowing in order to influence the economic activity.

The budget is the main instrument while the variables of fiscal policy are government spending and tax rates. If the government wishes to reduce inflation it would use contractionary (restrictive) fiscal policy and could decrease government spending and/or increase taxes. In both cases this would lead to a decrease in the general price level but also a decrease in the level of output/GDP (Y). In the above graph the inflation was the result of a large increase in aggregate demand (AD to AD1) without an increase in aggregate supply

(AS). The use of contractionary fiscal policy would cause AD to decrease and the AD curve would shift to the left (AD1 to AD2). The price level decreases from P1 to P2. There is, however, a problem because the level of income also decreases from Y2 to Y1.

(iii) Given a Keynesian model of an open economy, illustrate on the following diagram the impact of an increase in autonomous imports on the equlibrium level of income. Remember to label your diagram. (3)

Draw the Keynesian model showing a DOWNWARD shift of the aggregate spending curve (A decreases). As a result the equilibrium level of income (Y) will also decrease.

QUESTION 3

Given the following information

C = 400 + 9/10Yd
I = 500
G = 1280
t = 1/3
X = 900
Z = 600 + 1/10Y
Full-employment level of income = 5510

NOTE: These longer calculations appear to have been taken out of the 2015 syllabus.

(i) the marginal propensity to save

The marginal propensity to save = 1 – mpc
= 1 – 9/10 = 1/10 or 0.1

(ii) the multiplier

$$\frac{1}{1-c(1-t)+m} = \frac{1}{1-\frac{9}{10}\left(1-\frac{1}{3}\right)+\frac{1}{10}} = 2$$

(iii) the equilibrium level of income

$Y = \alpha(\bar{A})$
= 2 x (400 + 500 +1280 + 900 – 600)
= 2 x 2480
= 4960

(iv) the increase in exports required to move the economy to full employment level of income.

$$\Delta X = \frac{Yf-Yo}{\alpha} = \frac{5510-4960}{2} = 275 \text{ (increase in exports)}$$

QUESTION 4

(i) Explain the difference between nominal GDP and real GDP. (2)

Nominal GDP is gross domestic product measured at current prices. It includes price increases and cannot be used to measure economic growth.
Real GDP is adjusted to remove the effects of price increases by using the prices from a base year. Changes in real GDP are used to measure economic growth.

(ii) Discuss how an increase in the dollar price of gold will affect the value of the rand on the South African foreign exchange market. (4)

The price of gold is expressed in dollars. When South Africa sells gold internationally it is paid in US dollars. As a result when the price of price increases more dollars will flow into South Africa, that is the supply of US$ will increase. This will result in the price of the US$ in rands decreasing and the rand appreciates against the US$.

(iii) What are the determinants of induced consumption in the Keynesian model of an open economy with a government sector? (4)

Induced consumption refers to that part of consumption that is dependent on income. In an economy with a government sector induced consumption would be expressed as $c(1-t)Y$. The determinants are therefore the marginal propensity (c) to consume; the tax rate (t) and the level of output/income (Y).

(vi) Briefly explain why a decrease in the interest rate would lead to an increase in the income level of the AD-AS model. Comment on the factors which have an influence on the size of the increase in income. (5)

A decrease in the interest rate will lead to an increase in investment spending in the economy. As a result aggregate demand (AD) will increase and the AD curve will shift to the right. The level of income (Y) will increase but so will the general price level. Generally the impact on Y will depend on the elasticities of the AD and AS curves. For example if the AS curve is relatively flat, an increase in AD will result in a relatively large increase in Y with a fairly small increase in P.

(v) Briefly discuss the policy dilemma in an open economy. (5)

Policymakers are faced with a number of different choices and objectives which give rise to a dilemma. They have to consider the inflationary effects of any steps taken to increase the level of output in the economy. In an open economy this is further complicated by exports and imports. It is very seldom that the level of income which secures a balanced balance of payments (YB) is the same as the level of full employment of all factors of production (Yf). The dilemma is that when policies are implemented to increase economic growth (a move towards Yf) they are likely to lead to a worsening of the trade balance (a movement away from YB).

SECTION B: MCQs for MAY/JUNE 2012

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8. 4	18. 2	28. 1	38. 3
9. 2	19. 2	29. 1	39. 3
10. 4	20. 2	30. ??	40. 1