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|--------------|-------------------------|-----------------------------|---------------------|
| Issued On:   |                         | Past Paper Questions [PPQs] | <b>13</b> [80 - 92] |
| Deadline:    |                         | Model Questions [MQs]       | <b>3</b> [23 - 25]  |
| Marks : Time | <b>1 mark = 1 ½ Mnt</b> | Units - Essentials Covered  | <b>Units: 5 - 6</b> |

## National Accounting Process [Unit 5]

-  **[01]** 2012 A/Ls (ECON – II): Q4
- (II) Explain why an economy's total output, in essence, is also its total income **(02 marks)**
- (IV) Which of the following are included in this year's GDP ? Explain your answer in each case
- Interest received on corporate bonds
  - Pension payment received by a retired public servant
  - The purchase of an insurance policy
  - The purchase of 100 shares of a finance company
  - Rent received on an apartment
- (05 marks)**
- (II)
- ✓ The dynamic economic activities of production, exchange and consumption are connected through a perfectly interdependent circular flow of income and expenditure.
  - ✓ Production generates incomes
  - ✓ The value of total output at factor cost prices (even; basic price) in a given year is equal to the total income received by those who contributed to its production
- [02 marks]**
- (IV)
- Included.** It is a productive transaction. Income received by the bondholder for the services derived by the corporation for the loan of money.
  - Excluded.** A transfer payment.
  - Included.** Productive transaction. Insurance is a final service.
  - Excluded.** Non-productive transaction based on financial papers. Merely a transfer of ownership of existing financial assets.
  - Included.** Productive transaction. Payment for the final service of Housing.
- (01 mark each; total of 05 marks)**

**[02] Model Question**

The following information is pertaining to a hypothetical production process (all values in millions)

|   |            |
|---|------------|
| <b>Product (Output)</b>                   | <b>100</b> |
| <b>Raw material</b>                       | <b>30</b>  |
| <b>Utility expenses</b>                   | <b>10</b>  |
| <b>Consumption of Fixed Capital [CFC]</b> | <b>20</b>  |

Estimate:

- (A) Intermediate Consumption [IC]
- (B) Gross Value Added [GVA]
- (C) Net Value Added [NVA]

(A) Intermediate Consumption

$$\begin{aligned}
 &= \text{Raw Materials} + \text{Utility Expenses} \\
 &= 30 + 10 \\
 &= \underline{40}
 \end{aligned}$$

(B) Gross Value Added (GVA)

$$\begin{aligned}
 &= \text{Output Value [GVO]} - \text{Intermediate Value [IC]} \\
 &= 100 - 40 \\
 &= \underline{60}
 \end{aligned}$$

(C) Net Value Added (NVA)

$$\begin{aligned}
 &= \text{GVA} - \text{Consumption of Fixed Capital [CFC]} \\
 &= 60 - 20 \\
 &= \underline{40}
 \end{aligned}$$

**[01 mark each, 03 marks]**

**[03] 2015 A/Ls (ECON – II): Q4**

- (I) What are the three approaches in measuring aggregate economic activity of a country? Why do these three approaches give the same value for aggregate economic activity?
- (II) What are the main sources of national savings in Sri Lanka?
- (III) In what ways are national income statistics are useful

**(04 marks each)**

**(IV)** Suppose you are given the following information about a hypothetical economy: (All figures are in Rs. million)

| Item  | Value | Item   | Value |
|---|-------|--|-------|
| Government purchases                              | 50    | Government transfers to households                 | 25    |
| Gross private domestic investment                 | 70    | Interest payments from the government to household | 15    |
| Gross Domestic Product at Market Price            | 400   | Factor income received from abroad                 | 7     |
| Current account balance of the Balance of Payment | -25   | Factor payment made to abroad                      | 12    |
| Taxes   | 100   | Net foreign current transfers                      | 10    |

**Calculate the following using the above information:**

- (A) Net exports
- (B) Private consumption expenditure
- (C) Disposable Gross National income
- (D) Government savings

**(02 marks each)**

**(I) Output (Production) Approach  
Income Approach  
Expenditure Approach**

**(02 marks, only if all approaches are stated)**

Output, income and expenditure approaches to measuring aggregate productive economic activities of the economy reflects three different dimensions of the same transaction.

Output approach conceptually measures the value of the final goods and services produced in the country within a given year, practically estimated based on the gross value added generated.

Income approach measures the sum of all factor payments that were made to the factor owners, who contribute to the production of all final goods and services (i.e., aggregate primary incomes earned by generating the economy's GVA at market price). As the value of production should be equal to the total cost of the output, the value of total output and the value of total income are identical.

Similarly, under the expenditure approach, the value of aggregate economic activity is measured by summing all the spending on final goods and services that has taken place throughout the year (expenditure on GDP). Thus, we are able to determine the value of GDP for a particular year either by aggregating the total expenditure which was spent on buying total output or by adding up all the money that was derived as income from its production. Buying and selling are two aspects of the same transactions.

**(02 marks) (Total 04 marks)**

- (II) Private Savings  
     - Household Savings  
     - Business Savings  
 Government Savings
- } Domestic Savings

Non-factor income from Abroad/ Net Primary income from Rest of the World (Primary Income A/C Net)  
 Net Foreign Current Transfers (Secondary Income A/C Net)

(III) The usefulness of National Income statistics:

- ✓ In order to monitor the performance of the economy over time
- ✓ In the process of measuring economic growth
- ✓ In performing cross country comparisons, specially based on per capita income
- ✓ In the process of analysing the economy's structure and structural changes
- ✓ Assessing the standard of living and welfare of the population
- ✓ In the process of identifying the functional relationship between key macroeconomic variables
- ✓ Identifying the patterns of functional income distribution
- ✓ A key input or considerations in the economic and social policy formulation process
- ✓ In the process of identifying the total resources of the economy and their utilization
- ✓ In the process forecasting the behaviour of macroeconomic variables

(01 mark each, total 04 marks)

(IV)

(a) Estimating Net Exports

|   |                              |
|---|------------------------------|
| Current A/C balance of BOP                          | (- 25)                       |
| <b>(-) Less</b>                                     |                              |
| Net Primary Income from ROW<br>(PIR – PIP = 7 – 12) | (- 5)                        |
| Net Foreign Current Transfers                       | <u>10</u>                    |
| <b>Net Exports (NX)</b>                             | <b><u>(- 30)</u> Million</b> |

(b) Estimating Private Consumption Expenditure (PFCE)

|          |   |                                    |
|----------|---|------------------------------------|
| GDP (Y)  | = | PFCE (C) + GFCE (G) + GCF (I) + NX |
| 400      | = | C + 50 + 70 + (- 30)               |
| C        | = | 400 – 90                           |
| <b>C</b> | = | <b><u>310</u> Million</b>          |

**(c) Estimating GNDI**

|   |                           |
|---|---------------------------|
| Gross Domestic Product                  | 400                       |
| + NPI (ROW)                             | <u>(- 5)</u>              |
| Gross National Income                   | 395                       |
| Net Foreign Current Transfers           | <u>10</u>                 |
| <b>Gross National Disposable Income</b> | <b><u>405</u> Million</b> |

**(d) Estimating Government Savings**

|                               |                          |                   |
|-------------------------------|--------------------------|-------------------|
| Net Government Income/Revenue | 60                       | [100 – (25 + 15)] |
| Less: Government purchases    | <u>(50)</u>              |                   |
| <b>Government Savings</b>     | <b><u>10</u> Million</b> |                   |

(a),(b),(c) and (d), 01 mark for method and 01 mark for final answer

**[04] Model Question**

Using your knowledge of the methods of evaluating product values, complete the following schedule

| Year | GDP<br>(Current Price) | Price Level<br>(Index) | GDP<br>(Fixed Prices) |
|------|------------------------|------------------------|-----------------------|
| 2017 | 1000                   | ?                      | 1000                  |
| 2018 | 1320                   | 110                    | ?                     |

$$\begin{aligned}
 \text{GDP (Fixed Prices)} &= [\text{GDP (Current Prices)} \div \text{Price Index}] \times 100 \\
 1000 &= [1000 \div \text{Price Level}] \times 100 \\
 \text{Price Levels} &= \underline{\underline{100}}
 \end{aligned}$$

$$\begin{aligned}
 \text{GDP (Fixed Prices)} &= [\text{GDP (Current Prices)} \div \text{Price Index}] \times 100 \\
 1000 &= [1320 \div 110] \times 100 \\
 &= \underline{\underline{100}}
 \end{aligned}$$

**[01 mark each, 02 marks]**

**[05] Model Question**

Using your knowledge of different 'prices' used in national accounting, complete the following formulas

- (A) Producers' Price = Basic Price  $\pm$
- (B) Purchasers' Price = Producers' Price  $\pm$
- (C) Basic Price = Purchasers' Price  $\pm$
- (D) Factor (Cost) Price = Basic Price  $\pm$
- (A) Producers' Price = Basic Price + **Net Tax on Product**
- (B) Purchasers' Price = Producers' Price + [**Transport Cost + Trade Margins**]  
+ **Net Product Tax on Consumers** (if separately given)
- (C) Basic Price = Purchasers' Price Minus (-)  
- **Net Product Tax on Consumers** (if separately given)  
- **Transport Cost & Trade Margins**  
- **Net Tax on Product**
- (D) Factor (Cost) Price = Basic Price – **Other tax on Production** + **Other subsidy on Production**

**National Accounting Process [Unit 6]:**

**[01] 2017 A/Ls (ECON – II - II): Q5 (IV)**

**'The equilibrium level of national income, is not necessarily equal to the full employment level of national income'** Explain this statement.

**[04 marks]**

Equilibrium national income ( $Y_e$ ) and the full employment level of national income ( $Y_f$ ) or potential output ( $Y_p$ ) are conceptually different.

**[01 mark]**

Full employment level of national income or potential output is the maximum sustainable level of national output, an economy can achieve without triggering rising inflationary pressure, at a given point of time.

**[01 mark]**

**Alternatively:**

*Full employment level of output is a level of output an economy can be expected to attain, if all resources are fully employed, at the normal productivity of such resources.*

Equilibrium level of national output or income is at any level of output or income where aggregate planned expenditure of the economy, shall equal overall actual output ( $Y = E$ ). Such level of national income shall not show any tendency to change.

[01 mark]

Full employment level of real national income (read potential output) and equilibrium level of national income (actual real income) need not always be the same.

[01 mark] [Total 04 marks]

**Alternatively:**

*An economy can be in equilibrium with either inflation, where actual output is higher than potential, or with unemployment, where actual output is lower than potential or neither, where actual equals potential level of output.*



[02] 2013 A/Ls (ECON – II - II): Q5 (II)

Distinguish between ‘inflationary gap’ and ‘recessionary gap’

[04 marks]

**Inflationary Output Gap** represents the level by which the actual aggregate demand prevailing in the economy; has exceeded the aggregate demand level required by the economy to achieve and maintain its full employment level of output (i.e. potential output). This is a situation where the **actual output** is **above** the **potential** level of output in the short-run.

[1 ½ marks]

The outcome of such an inflationary output gap would be the creation of **demand-pull inflation**, as a result the nominal output of the economy may increase while the real output remains the same

[½ marks, Sub-total 02 marks]

**Deflationary Output Gap** represents the level by which the actual aggregate demand or expenditure prevailing in the economy; is in deficit to the aggregate demand level required by the economy to achieve and maintain its full employment level of output (i.e. Potential output). This is a situation where the **actual output** is **below** the **potential** level of output.

[1 ½ marks]

The outcome of such a deflationary output gap is the creation of a **recessionary** situation, which leads to an increase in the rate of **unemployment** and deflation due to the **deficiency in aggregate demand**.

[½ marks, Sub-total 02 marks]

[Total 04 marks]

[03] 2012 A/Ls (ECON – II - II): Q5 (I-II)

(I) Explain what is meant by an equilibrium level of national income. What are the conditions required for the equilibrium in national income level

[06 marks]

(II) Why is saving called a 'leakage' [02 marks]

2015 A/Ls (ECON – II - II): Q5 (II)

Explain what is meant by an equilibrium level of national income. What are the conditions required for the equilibrium level in national income in an open economy

[04 marks]

(I) National income is said to be in equilibrium when there is **no tendency** for it **either to increase or to decrease**. The particular value of national income that exists in equilibrium is called the equilibrium national income.

[02 marks]

(1) Aggregate output or income must equal Aggregate expenditure ( $Y = E$ )  
 $Y = C + I + G + (X - M)$

[01 mark]

(2) Leakages equal injections ( $W = J$ )  
 $W = J$

$$S + T + M = I + G + X$$

[01 mark] [04 marks]

(II) A *leakage* represents payments received by households and firms that are *not* passed on through their spending. Household saving is income received by households and not passed on to firms through household consumption expenditure. Savings thus represents a leakage from the circular flow (or aggregate demand).

[02 marks]

[04] 2011 A/Ls (ECON – II - II): Q5 (I-II)

(I) What are the components of aggregate expenditure in an open economy? Define each components

[06 marks]

(II) What is the relationship between the savings and the consumption function?

[02 marks]



- (I) Aggregate Demand (AD) or Overall Expenditure (E) is the total expenditure flow all economic operators or agents (households, business organizations and government) are planning to incur or spend on goods and services, during a given period of time.

[02 marks]

The aggregate demand or expenditure function for an open economic system can be stated as follows:

$$AD (E) = C + I + G + (X-M)$$

**Consumption Expenditure (C)** is the expenditure incurred by household units in order to purchase consumer goods and services.

**Gross Investment / Gross Domestic Capital Formulation (I)** is the expenditure incurred acquire fixed capital assets (plant, machinery, equipment, housing, factories etc) and changes in stocks or inventories.

**Government Purchases / Government Expenditure on Goods and Services/ Public Consumption (G)** is the expenditure incurred on goods and services by the government or public sector

**Net Exports (NX)** is the difference between the Export (X) and Import (M) of goods and services.

[01 mark each, Total 06 marks]

- (II) Savings and Consumption are positive or direct functions of disposable income. Accordingly when disposable income increases by a certain proportion, a part of this increased income is used for consumption, and the balance will be allocated for savings.

[01 marks]

The sum or total of Marginal Propensity to Consume (MPC) and Marginal Propensity to Save (MPS) shall equal 1 (one). Therefore the slope of the consumption function is one minus the slope of the savings function ( $MPC + MPS = 1$  and  $MPS = 1 - MPC$ )

[01 marks]

The value of Autonomous consumption (a) is the inverse of Autonomous savings (-a). Accordingly the consumption and savings equations relevant to linear consumption and savings curves can be presented as follows

$$C = a + b Y_d$$

$$S = -a + (1-b) Y_d$$

[02 marks, Total 4 marks]

[05] 2010 A/Ls (ECON – I - II): Q6 (I - II)

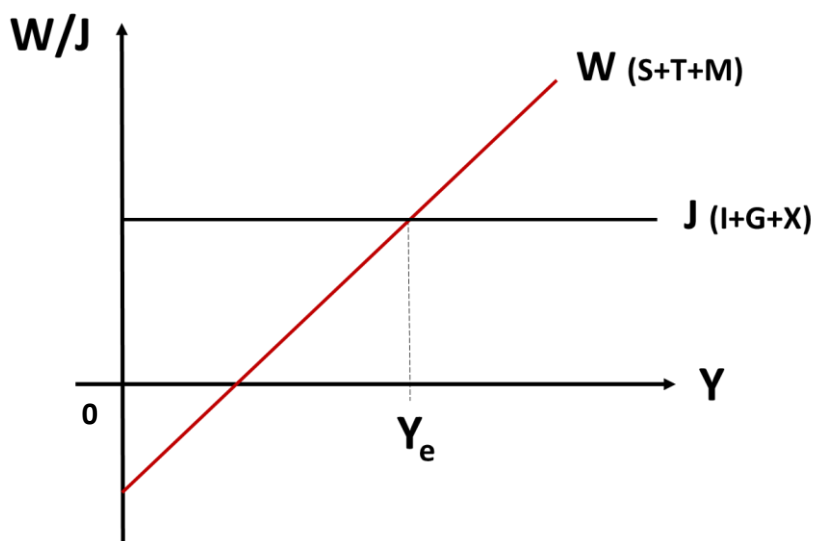
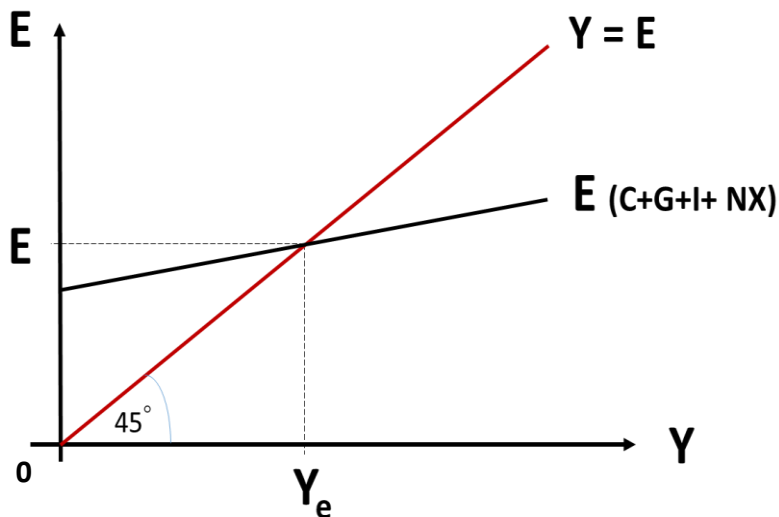
- ➔ (I) explain graphically the determination of the equilibrium GDP through both the aggregate expenditure approach and the leakages-injections approach, for an economy comprising of government sector and foreign trade sector

[06 marks]

- (II) Suppose the aggregate consumption function for a simple economy is as follows:

$$C = 200 + \frac{2}{3} Y$$

- (a) What would the equation be for the aggregate savings function? [03 marks]  
 (b) At which level of income would savings be zero [02 marks]



**(II) (a)** Aggregate Savings equation/function:

$$S = -a + (1-b) Y$$

$$-a = -200 \quad \text{[01 mark]}$$

$$(1-b) = 1/3 \quad \text{[01 mark]}$$

$$S = -200 + 1/3 Y \quad \text{[01 mark] [03 mark]}$$

**(b)**

$$\begin{array}{rclcl}
 S & = & 0 & & \\
 -200 + 1/3 Y & = & 0 & & \\
 1/3 Y & = & 200 & & \\
 Y & = & 600 & \text{OR} & Y = 606.06 \\
 & & & & \text{[02 marks]}
 \end{array}$$

**[06]** 2011 A/Ls (ECON – II): Q5 (III)

For a closed economy with no government, suppose the consumption function is given by  $C = 100 + 0.8Y$ , while investment is given by  $I = 50$

- (a) What is the equilibrium level of income of this economy?
- (b) What is the level of savings in equilibrium?
- (c) If, for some reason, income is at the level of 800, what the level of involuntary inventory accumulation will be
- (d) If investment (I) rises to 100, what will the effect be on the equilibrium income

**(02 marks each)**

(e) Draw a diagram indicating the equilibrium in both (a) and (d)

**(04 marks)**

**(a)**

$$\begin{array}{rclcl}
 Y & = & C + I & & \\
 Y & = & 100 + 0.8Y + 50 & (01 \text{ mark}) & \\
 Y & = & \underline{750} & (01 \text{ mark}) & 
 \end{array}$$

**(b)** Savings at equilibrium:  $S = Y - C$     OR     $S = -100 + 0.2 Y$

$$\begin{array}{rclcl}
 S & = & Y - C & & \\
 S & = & 750 - [100 + 0.8 (750)] & (01 \text{ mark}) & \\
 & = & 750 - 700 & & \\
 & = & \underline{50} & (01 \text{ mark}) & 
 \end{array}$$

Alternative:

$$\begin{array}{rclcl}
 S & = & -100 + 0.2Y & & \\
 S & = & -100 + 0.2 (750) & (01 \text{ mark}) & \\
 S & = & -100 + 150 & & \\
 S & = & \underline{50} & (01 \text{ mark}) & 
 \end{array}$$



➔ [07] 2008 A/Ls (ECON – II - II): Q6 (III)

Suppose the government is considering whether to reduce personal income taxes by Rs. 40 billion or to increase government purchases by Rs. 40 billion to combat a recession. Assume that price level is constant and the Marginal Propensity to Consume (MPC) is 0.8. What effect would each of these measures have on aggregate demand? Which measure is more expansionary? Why?

**(05 marks)**

The impact aggregate demand (expenditure), due to reduction in tax (personal income tax):

As income taxes are decreased, the consumption expenditure increases through the increase in disposable income [ $Y_d = Y - T$ , therefore  $\Delta Y_d \uparrow = Y - \Delta T \downarrow$ ]

$$\begin{array}{ccccccc} \Delta T \downarrow & \rightarrow & \Delta Y_d & \rightarrow & \Delta C & & \\ 40 \downarrow & \rightarrow & 40 \uparrow & \rightarrow & (40 \times 0.8) = 32 & & \end{array}$$

The consumption expenditure shall increase by Rs. 32 billion, in turn eventually national income/output shall increase with a multiplier effect by Rs. 160 billion

$$\begin{array}{l} \Delta Y = \Delta C \times K \\ = 32 \times [1 \div (1-0.8)] \\ = 32 \times 5 \\ = \underline{160} \end{array} \qquad \qquad \qquad \text{(02 marks)}$$

As government purchases is increased, aggregate demand (in turn national income/output) shall increase directly:

$$\begin{array}{ccccccc} \Delta G \uparrow & \rightarrow & \Delta AD & \rightarrow & \Delta Y & & \\ 40 \uparrow & \rightarrow & 40 \uparrow & \rightarrow & 40 \times [1 \div (1 - 0.8)] = 200 & & \end{array}$$

Therefore the expansion/increase in national income is Rs. 200 billion **(02 marks)**

**Accordingly the increase in government purchases is more expansionary.**

**(01 mark, Total 05 marks)**

**Alternative Answer Approach:**

Impact of reducing personal income taxes:

Based on the **Autonomous Tax Multiplier**

$$\begin{aligned} \Delta Y &= \Delta T \times [-b \div (1 - b)] \\ &= -40 \times [-0.8 \div (1-0.8)] \\ &= -40 \times -4 \\ &= \underline{160} \end{aligned} \quad \text{(02 marks)}$$

Impact of increasing government purchases:

$$\begin{aligned} \Delta Y &= \Delta G \times [1 \div (1-MPC)] \\ &= 40 \times [1 \div (1-0.8)] \\ &= 40 \times 5 \\ &= \underline{200} \end{aligned} \quad \text{(02 marks)}$$

**[08]** 2006 A/Ls (ECON – II - II): Q6

(a) Consider an economy with no government, imports, or exports and with fixed prices and interest rates. The aggregate consumption function of the economy is  $C = 150 + 0.60Y_d$  and investment  $(I) = 50$ . (All figures are in Rs. billion)

(I) What is the equilibrium level of aggregate output of this economy (04 marks)

(II) What is the value of the investment multiplier (02 marks)

(b) Suppose a government sector is now added to the original economy described in part (a). The government spends 100 on goods and services and receives taxes of 100

(I) What is the equilibrium level of aggregate output now (04 marks)

(II) Full employment output in this economy is 800. Suppose government spending is raised to attain this level of output, but taxes are not changed. What level of government spending will result in an equilibrium output of 800?

(05 marks)

2006 A/Ls (ECON – II - II): Q6

**(a) (I)**

$$\begin{aligned}
 Y &= E \\
 Y &= C + I \\
 Y &= 150 + 0.6Y_d + 50 \\
 Y &= 200 + 0.6Y \quad [\text{Simple Economy: } Y = Y_d] && \text{(01 mark)} \\
 Y - 0.6Y &= 200 \\
 0.4Y &= 200 \\
 Y &= 200 \div 0.4 \\
 Y &= \underline{500} \text{ (Rs. billions)} && \text{(03 marks)}
 \end{aligned}$$

**(II)**

$$\begin{aligned}
 K &= 1 \div (1 - MPC) && \text{(01 mark)} \\
 &= 1 \div (1 - 0.6) \\
 &= 1 \div 0.4 \\
 &= \underline{2.5} && \text{(01 mark)}
 \end{aligned}$$

**(b) (I)**

$$\begin{aligned}
 Y &= E \\
 Y &= C + I + G \\
 Y &= 150 + 0.6Y_d + 50 + 100 && \text{(02 marks)} \\
 Y &= 300 + 0.6(Y - T) \\
 Y &= 300 + 0.6(Y - 100) \\
 Y &= 300 + 0.6Y - 60 \\
 Y &= 240 + 0.6Y \\
 Y - 0.6Y &= 240 \\
 0.4Y &= 240 \\
 Y &= 240 \div 0.4 \\
 Y &= \underline{600} \text{ (Rs. billion)} && \text{(02 marks)}
 \end{aligned}$$

**(II)**

$$\begin{aligned}
 \Delta Y &= Y_f - Y_e \\
 &= 800 - 600 \\
 &= \underline{200} && \text{(02 marks)} \\
 K &= \Delta Y \div \Delta G \\
 \Delta G &= \Delta Y \div K \\
 \Delta G &= 200 \div 2.5 \\
 &= \underline{80} \text{ (Rs. billions)} && \text{(03 marks)}
 \end{aligned}$$

**[09]** 2005 A/Ls (ECON – I - II): Q6

Some information pertaining to aggregate consumption and investment in a simple economy is given below:

- Autonomous (determined independent of current income) consumption is Rs. 50 million
- Every one rupee increase in income causes 75 cents increase in consumption
- Investment Rs. 100 million

- (a) Using the above information, construct the consumption and savings functions for this economy
- (b) Determine the equilibrium level of national income for this economy
- (c) Draw consumption, savings and investment functions in a diagram and show the determination of equilibrium level of income

**(05 marks each)**

**(A)**

$$\begin{aligned}
 C &= a - b Y \\
 a &= 50 \\
 b &= 0.75 Y \\
 \mathbf{C} &= \mathbf{50 + 0.75 Y} \qquad \qquad \qquad \mathbf{(03 \text{ marks})}
 \end{aligned}$$

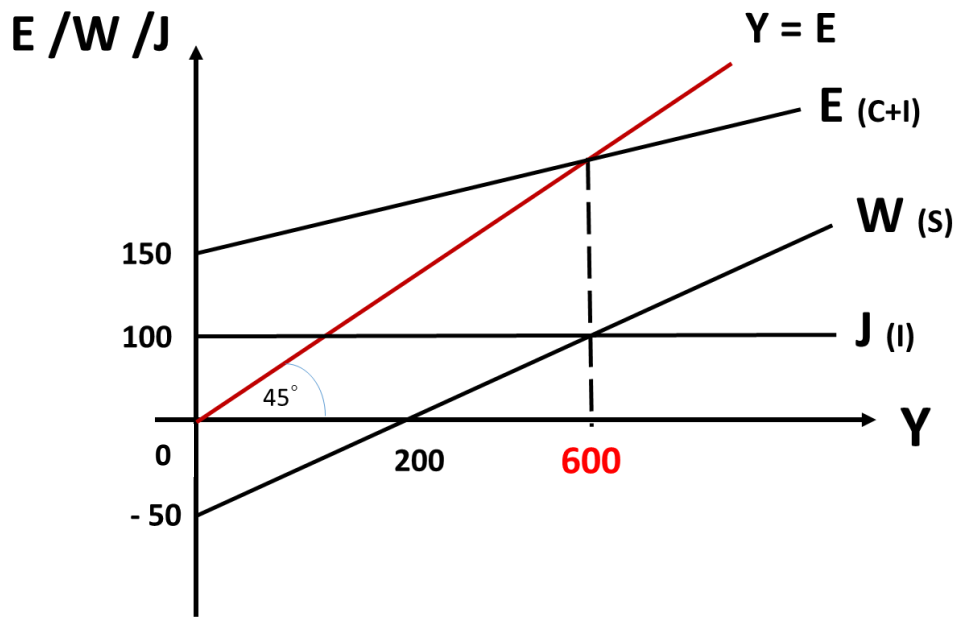
$$\begin{aligned}
 S &= -a + (1 - b) Y \\
 -a &= -50 \\
 (1 - b) &= 1 - 0.75 Y \\
 &= 0.25 Y \\
 \mathbf{S} &= \mathbf{-50 + 0.25 Y} \qquad \qquad \qquad \mathbf{(02 \text{ marks; Total 05 marks})}
 \end{aligned}$$

**(B)**

$$\begin{aligned}
 \text{Therefore } Y &= E \\
 Y &= C + I \\
 Y &= 50 + 0.75 Y + 100 \\
 Y &= 150 + 0.75 Y \\
 Y - 0.75 Y &= 150 \\
 \frac{0.25 Y}{0.25} &= \frac{150}{0.25} \\
 \mathbf{Y} &= \mathbf{\underline{\underline{600}}} \qquad \qquad \qquad \mathbf{(05 \text{ marks})}
 \end{aligned}$$



(C)



[Specimen Diagram]

(05 marks)

➔ [10] 2013 A/Ls (ECON – II - II): Q5 (I) and (IV)

- (I) Briefly explain the meaning of the ‘Investment Multiplier’
- (IV) Suppose that for a particular closed economy, for some given time period, investment was equal to Rs. 100 million, government purchases were equal to Rs. 75 million, net taxes were fixed at 100, and consumption (C) given by the consumption function.

$$C = 25 + 0.8 Y_d \quad \text{Where } (Y_d) \text{ is Disposable Income}$$

- (a) What are the values of the government expenditure multiplier and the tax multiplier?
- (b) Suppose that the full-employment level of income for this economy is Rs. 1,000 million. What would be the increase in government spending required to reach full-employment income level?  
Alternatively, what reduction in tax collection would be sufficient to reach full-employment income level?

(04 marks each)

- (I)** Investment expenditure has the ability to create a multiplier effects on national output or income. When investment expenditure increases, initially income shall increase by the same proportion of increase in investment (first round of multiplier effect), in the second phase when the income of parties engaged in industries' producing capital goods increase, the national income will increase in multiple rounds by creating induced consumption expenditure. This amazing process is termed as the multiplier effect or process. **(02 marks)**

The investment multiplier is defined as the rate between changes in the real national income ( $\Delta Y$ ) caused by a change in investment expenditure ( $\Delta I$ ).

$$K = \frac{\Delta Y}{\Delta I} \quad \text{(01 mark)}$$

The size of the investment multiplier (the value of the multiplier) shall depend on size of the economy's Marginal Propensity to Consume (MPC) or the Marginal Propensity to Save (MPS), which inversely linked to MPC.

$$K = 1 / 1 - MPC \quad \text{OR} \quad K = 1 / MPS \quad \text{(01 mark) (Total 04 marks)}$$

**(IV)**

**(a)**  $KG = 1 \div (1 - MPC)$  **(01 mark)**  
 $= 1 \div (1 - 0.8)$   
 $= 5$  **(01 mark)**

$KT = -b \div (1 - b)$  **(01 mark)**  
 $= -0.8 \div (1 - 0.8)$   
 $= -4$  **(01 mark)**

**(b) Estimating equilibrium national income**

$$\begin{aligned} Y &= 25 + 0.8 Y_d + 100 + 75 \\ Y &= 200 + 0.8 (Y - T) \\ &= 200 + 0.8 (Y - 100) \\ &= 200 + 0.8Y - 80 \\ &= 120 + 0.8Y \\ Y - 0.8Y &= 120 \\ 0.2Y &= 120 \\ Y &= 600 \end{aligned}$$

**Therefore the Output Gap**  $= Y_f - Y_e$   
 $= 1000 - 600$   
 $= 400$

**Increase in Government Spending required:**

$$\begin{aligned} \text{KG} &= \Delta Y \div \Delta G \\ 5 &= 400 \div \Delta G \\ \Delta G &= 400 \div 5 \\ &= \mathbf{80} \end{aligned} \qquad \qquad \qquad \mathbf{(02 \text{ marks})}$$

**Reduction in Tax Collection required:**

$$\begin{aligned} \text{KT} &= \Delta Y \div \Delta T \\ 4 &= 400 \div \Delta T \\ \Delta T &= 400 \div 4 \\ &= \mathbf{100} \end{aligned} \qquad \qquad \qquad \mathbf{(02 \text{ marks})}$$