CHAPTER 13

AGGREGATE DEMAND: COMPONENTS AND RELATED CONCEPTS

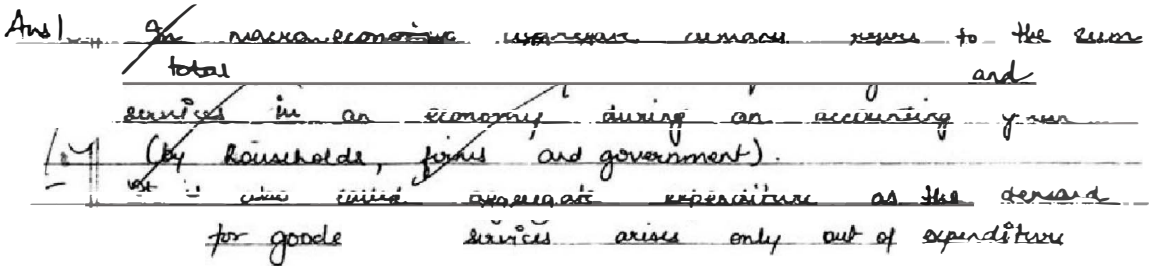
IMPORTANT QUESTIONS

Very Short Answer Type Questions

1 mark each

R **Q. 1.** What is 'Aggregate Demand' in macro-economics? **[OD Set-I, II, III 2015]**

Ans.



[Topper Answer 2015]

Detailed Answer :

Aggregate Demand refers to the total demand for goods and services in an economy, measured in terms of total expenditure. **1**

R **Q. 2.** What is 'Aggregate Supply' in macroeconomics? **[Delhi Set-I, II, III 2015]**

OR

Define Aggregate Supply.

[Delhi Set-I, III 2014]

Ans. Aggregate Supply refers to the value of final goods and services planned to produced in an economy during a given year. **1**

R **Q. 3.** Give the meaning of Autonomous Consumption. **[Foreign Set-I, II, III 2010]**

Ans. It refers to the minimum level of consumption, even when income is zero. It is indicated by C in the consumption function

$C = C + b(y)$ **1**

R **Q. 4.** Define Average Propensity to Consume (APC)? **[Delhi Set-II Comptt. 2012]**

Ans. The ratio of total consumption expenditure to total income is called APC.

$$APC = \frac{C}{Y}. \quad \textbf{1}$$

R **Q. 5.** Define Marginal Propensity to Consume. **[Delhi Set-I, 2014]**

Ans. Marginal Propensity to Consume (MPC) is the ratio of change in consumption expenditure to "Change in Income".

$$MPC = \frac{\Delta C}{\Delta Y} = \frac{\text{Change in Consumption}}{\text{Change in Income}} \quad \textbf{1}$$

A **Q. 6.** How is the value of Marginal Propensity to Save calculated? **[Delhi Set-I, II, III Comptt. 2012]**

Ans. $MPS = 1 - MPC$

OR

$$MPS = \frac{\Delta S}{\Delta Y} \quad \textbf{1}$$

R **Q. 7.** Give the meaning of Marginal Propensity to Save. **[OD Set-II 2010]**

Ans. It is the ratio of change in saving to change in income

$$MPS = \frac{\Delta S}{\Delta Y} \quad \textbf{1}$$

R **Q. 8.** Give the meaning of Full Employment. **[Delhi Set-II 2014; OD Set-I, II, III 2014]**

Ans. Full Employment is a situation in which all those who are able and willing to work at the prevailing wage rate find work. **1**

R **Q. 9.** What is Involuntary Unemployment? **[Delhi Set-I 2014]**

Ans. Involuntary Unemployment occurs when those who are able and willing to work at the going wage rate do not get work. **1**

Short Answer Type Questions–I

3 marks each

R **Q. 1.** What is Aggregate Demand ? State its components. **[OD Set-I, II, III 2016]**

Ans. Aggregate Demand refers to the value of final goods and services which all sectors of an economy are planning to buy during a year. **1**

Components :

(i) Private final consumption expenditure
(ii) Government final consumption expenditure
(iii) Investment expenditure
(iv) Net exports. **½×4=2**

[CBSE Marking Scheme, 2016]

Detailed Answer :

Aggregate Demand implies the total demand of final goods and services by all the people in an economy. It expresses the total demand in terms of money. In this manner, it can be defined as the actual aggregate expenditure incurred by all the people in an economy on different goods and services.

The components of aggregate demand are enlisted below :

(i) Private Consumption Expenditure (C) : Private consumption expenditure refers to the total expenditure incurred by all the households in an economy on different types of final goods and services in order to satisfy their wants. Consumption depends on the level of the disposable income. There are two types of consumption expenditure Autonomous Consumption Expenditure and Induced Consumption Expenditure.

(ii) Private Investment Expenditure (I) : Private investment expenditure refers to the planned (ex-ante) total expenditure incurred by all the private investors on creation of capital goods such as, expenditure incurred on new machinery, tools, buildings, raw materials, etc. Broadly, investment can be categorised in two types : Autonomous Investment Expenditure and Induced Investment Expenditure.

(iii) Government Expenditure (G) : Government expenditure refers to the total planned expenditure incurred by the government on consumption and investment purposes to enhance the welfare of the society and to achieve higher economic growth rates.

(iv) Net Exports (X – M) : Net exports refers to the difference between the demand for domestically produced goods and services by the rest of the world (exports) and the demand for goods and services produced abroad by the residents of a country. In other words, it is the difference between the exports and imports. **3**

R **Q. 2.** Give the meaning of Average Propensity to Save. What is its relation with Average Propensity to Consume.

[Delhi Set-I, II, III Comptt. 2014]

Ans. Average Propensity to Save (APS)—It is the ratio of saving and income *i.e.*

$$APS = \frac{Savings}{Income}$$ **1½**

Relation Average Propensity to Consume—The sum of Average Propensity to Save (APS) and Average Propensity to Consume (APC) is one.

$$APS + APC = 1$$ **1½**

U **Q. 3.** Explain how the economy achieves equilibrium level of income using Consumption + Investment (C + I) approach. **[SQP 2016]**

Ans. C + I approach

Aggregate demand, given by C + I, is the planned demand by the various sectors of the economy. Whether this planned demand is realized or not, depends on amount of goods and services (aggregate output or Y) produced in the economy. Thus, it is only when planned expenditure is equal to the aggregate output does the economy achieve equilibrium.

i.e., AD = Y

If AD > Y, inventory level with producers falls and they increase output.

This happens till AD = Y

Opposite happens if AD < Y.

[CBSE Marking Scheme, 2016] 3

U **Q. 4.** Differentiate between Aggregate Demand and Aggregate Supply. **[OD Set-I Comptt. 2013]**

Ans. Aggregate Demand : It refers to total value of final goods and services which all the sectors of an economy are planning to buy at a given level of income during a period of an accounting year. **1½**

Aggregate Supply : It refers to money value of goods and services that all the producers are willing to supply in an economy in a given time period. **1½**

[CBSE Marking Scheme, 2013]

U **Q. 5.** Explain the meaning of Marginal Propensity to Consume. What is its relationship with Marginal Propensity to Save ?

[Delhi Set-I Comptt. 2011]

Ans. Marginal Propensity to Consume—Change in Consumption due to change in income is known as Marginal Propensity to Consume.

Marginal Propensity to Consume plus Marginal Propensity to Save is always equal to 1.

$$MPC + MPS = 1.$$ **3**

U **Q. 6.** Distinguish between Propensity to Consume and Propensity to Save, with the help of numerical examples.

[OD Set-I 2012]

Ans. Propensity to Consume is the ratio of change in consumption over change in income. In short, MPC = $\frac{\Delta C}{\Delta Y}$.

Propensity to Save is the ratio of change in saving over change in income. In short, MPS = $\frac{\Delta S}{\Delta Y}$

MPC and MPS are shown in the following table :

Y	C	ΔC	MPC = $\frac{\Delta C}{\Delta Y}$	S	ΔS	MPS = $\frac{\Delta S}{\Delta Y}$
0	50	—	—	—	—	—
100	100	50	0.5	0	—	—
200	150	50	0.5	50	50	—
300	200	50	0.5	100	50	0.5
400	250	50	0.5	150	50	0.5
500	300	50	0.5	200	50	0.5

3

U **Q. 7.** Distinguish between Consumption Function equation and Saving Function equation.

[Delhi Set I 2012]

Ans. Consumption Function equation :

$C = \bar{C} + MPC\,(Y)$ **1**

Where C = Total Consumption

$\bar{C}$ = Autonomous Consumption

MPC = Marginal Propensity to Consume ½

Y = Income

Saving Function equation :

$S = -\bar{S} + MPS\,(Y)$ **1**

$\bar{C}$ = Autonomous consumption

S = Total Saving

MPS = Marginal Propensity to Save

Y = National Income ½

[CBSE Marking Scheme, 2012]

U **Q. 8.** Distinguish between Marginal Propensity to Consume and Average Propensity to Consume. Give a numerical example.

[Delhi Set-I Foreign Set-I 2016]

Ans. Marginal Propensity to Consume is the ratio of change in consumption expenditure (ΔC) to change in total income (ΔY).

Suppose ΔC = 70 and ΔY = 100

then, $MPC = \frac{70}{100} = 0.7$ **1½**

(Or any other example)

Average Propensity to Consume is the ratio of total consumption expenditure (C) to total income (Y).

Suppose C = 80 and Y = 100

then, $APC = \frac{80}{100} = 0.8.$ **1½**

(Or any other example)

[CBSE Marking Scheme, 2016]

Detailed Answer :

Average Propensity to Consume	Marginal Propensity to Consume
Average propensity to Consume refers to the ratio of Consumption Expenditure to the corresponding level of income.	Marginal propensity to consume refers to the ratio of change in Consumption Expenditure (ΔC) to change in total income (ΔY).
APC = $\frac{\text{Consumption (C)}}{\text{Income (Y)}}$	MPC = $\frac{\text{Change in Consumption } (\Delta C)}{\text{Change in Income } (\Delta Y)}$
It can be greater than 1, equal to 1 or less than 1.	Its value lies between 0 and 1.
It can never be zero.	Its value can be zero.
Ex. Supposing at a given level of income of 300 crore consumption is 250 crore then APC will be 250/300 which is equal to 0.83.	*Ex.* Suppose income increases by 100 crore and consumption increases by 50 crore then MPC = 50/100 which is equal to 0.5.

3

A **Q. 9.** Which of the following cannot have a negative value ? Give reasons.

(i) Average propensity to save.

(ii) Marginal propensity to save.

[OD Set-III Comptt. 2015]

Ans. (i) APS can have a negative value because at very low level of income there is dissaving. **1½**

(ii) MPS cannot have a negative value as it is the ratio of ΔS and ΔY and ΔS and ΔY can at the most be zero. **[CBSE Marking scheme, 2015] 1½**

A **Q. 10.** An economy is in equilibrium. Find Investment Expenditure

National Income = 1,200

Autonomous Consumption Expenditure = 150

Marginal Propensity to Consume = 0.8

[OD Set-II 2016]

Ans. $Y = C + MPC(Y) + I$

$1,200 = 150 + (0.8 \times 1,200) + I$

$I = 1,200 - 150 - 960$

$I = 90$

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

Given,

$Y = ₹ 1,200$

$C = ₹ 150$

$b = 0.8$

We know, at equilibrium

$Y = C + I$

$\Rightarrow \quad 1,200 = C + bY + I$

$\Rightarrow \quad 1,200 = 150 + 0.8 \times 1,200 + I$

$1,200 = 1,110 + I$

Therefore, $I = ₹ 90$ **3**

A **Q. 11.** An economy is in equilibrium. Find Investment Expenditure :

National Income = 1,000

Autonomous Consumption = 100

Marginal Propensity to Consume = 0.8

[OD Set-III 2016]

Ans. $Y = C + MPC(Y) + I$

$1,000 = 100 + 0.8\ (1,000) + I$

$I = 1,000 - 100 - 800 = 100$

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

Given, $Y = ₹ 1,000$

$C = 100$

$MPC = 0.8$

At equilibrium : $Y = C + I$

Therefore, $1,000 = C + MPC\ (Y) + I$

$1,000 = 100 + 0.8(1,000) + I$

$I = ₹ 100$ **3**

A **Q. 12.** $S = -100 + 0.2\ Y$ is the saving function in an economy. Investment expenditure is 5,000. Calculate the equilibrium level of income.

[Delhi Set-I Comptt. 2015]

Ans. $S = -100 + 0.2y$

At equilibrium $S = I$

$I = -5,000$

$5,000 = -100 + 0.2y$

$0.2y = 5,100$

$y = 25,500$ **3**

[CBSE Marking scheme, 2015]

A **Q. 13.** Calculate equilibrium level of income :

(a) Autonomous consumption = 200

(b) Marginal propensity to consume = 0.9

(c) Investment expenditure = 1,000

[Delhi Set-II Comptt. 2015]

Ans. $Y = C + I$ and $C = 200 + 0.9\ Y$; $I = 1,000$

$Y = 200 + 0.9Y + 1,000$

$\Rightarrow \quad 0.1Y = 1,200$

$Y = 12,000$ **[CBSE Marking scheme, 2015] 3**

A **Q. 14.** An economy is in equilibrium. Calculate Marginal Propensity to Consume :

National Income = 1,000

Autonomous Consumption Expenditure = 200

Investment Expenditure = 100

[OD Set-I 2016]

Ans. $Y = C + MPC(Y) + I$

$1,000 = 200 + MPC\ (1,000) + 100$

$MPC = \frac{1000\text{-}200\text{-}100}{1000} = \frac{700}{1000}$

$= 0.7$

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

Given, $Y = ₹ 1,000$

$C = 200$

Investment Expenditure = ₹ 100

At equilibrium: $Y = C + I$

Therefore, $1,000 = C + MPC\ (Y) + I$

$\Rightarrow \quad 1,000 = 200 + MPC\ 1,000 + 100$

$MPC = 0.7$ **3**

A **Q. 15.** In an economy, autonomous consumption is 500, marginal propensity to save is 0.2 and investment expenditure is 2,000. Calculate its equilibrium level of income.

[OD Set-III Comptt. 2015]

Ans. $MPS = 0.2$, So $MPC = 0.8$

$C = 500 + 0.8Y$

$Y = C + I\ ;\ 500 + 0.8Y + 2,000$

$0.2Y = 2,500$

$Y = 12,500$ **3**

[CBSE Marking Scheme, 2015]

A **Q. 16.** An economy is in equilibrium. Calculate national income from the following.

Autonomous Consumption = 100

Marginal Propensity to Save = 0.2

Investment Expenditure = 200

[Delhi Set-I 2015]

Ans. Given, $C = 100$

$MPS = 0.2$ or $MPC = 1 - MPS$

$= 1 - 0.2 = 0.8$

$I = 200$

We know,

$Y = C + b(Y) + I.$

or $Y = 100 + 0.8(Y) + 200.$

or $Y - 0.8\ Y = 300$

or $0.2\ Y = 300$

or $Y = \frac{300}{0.2} = 1,500.$

$Y = ₹ 1,500$ **3**

A **Q. 17.** An economy is in equilibrium. Find 'autonomous consumption' from the following :

National Income = 1,000

Marginal Propensity to Consume = 0.8

Investment Expenditure = 100

[Delhi Set-II 2015]

Ans. Given, $Y = 1{,}000$, MPC $= 0.8$, $I = 100$

$C = ?$

We know, $Y = C + b(Y) + I$

or $1{,}000 = C + 0.8(1{,}000) + 100$

or $1{,}000 = C + 800 + 100$

or $C = 1{,}000 - 900$

or $C = 100$ **3**

A Q. 18. An economy is in equilibrium. Find Marginal Propensity to Consume from the following :

National Income = 2,000

Autonomous Consumption = 400

Investment Expenditure = 200

[Delhi Set-III 2015]

Ans. Given $Y = 2{,}000$, $C = 400$, $I = 200$

Find out MPC $= ?$

We know,

$Y = C + b(Y) + I$

or $2{,}000 = 400 + b(2{,}000) + 200$

or $2{,}000 = 400 + 200 + (2{,}000)$

or $2{,}000 - 600 = b\ (2{,}000)$

or $b = \dfrac{1400}{2000} = 0.7$

b or MPC $= 0.7$ **3**

A Q. 19. An economy is in equilibrium. Calculate the Investment Expenditure from the following :

National Income = 800

Marginal Propensity to Save = 0.3

Autonomous Consumption = 100

[OD Set-I 2015]

Ans. Given $Y = 800$

MPS $= 0.3$

or MPC $= 1 - \text{MPS}$

$= 1 - 0.3 = 0.7$

$C = 100.$

Calculate $I = ?$

We know,

$Y = C + b(Y) + I$

or $800 = 100 + 0.7\ (800) + I$

or $800 = 100 + 560 + I$

or $I = 800 - 660$

or $I = 140$ **3**

A Q. 20. An economy is in equilibrium. Calculate the Marginal Propensity to Save from the following :

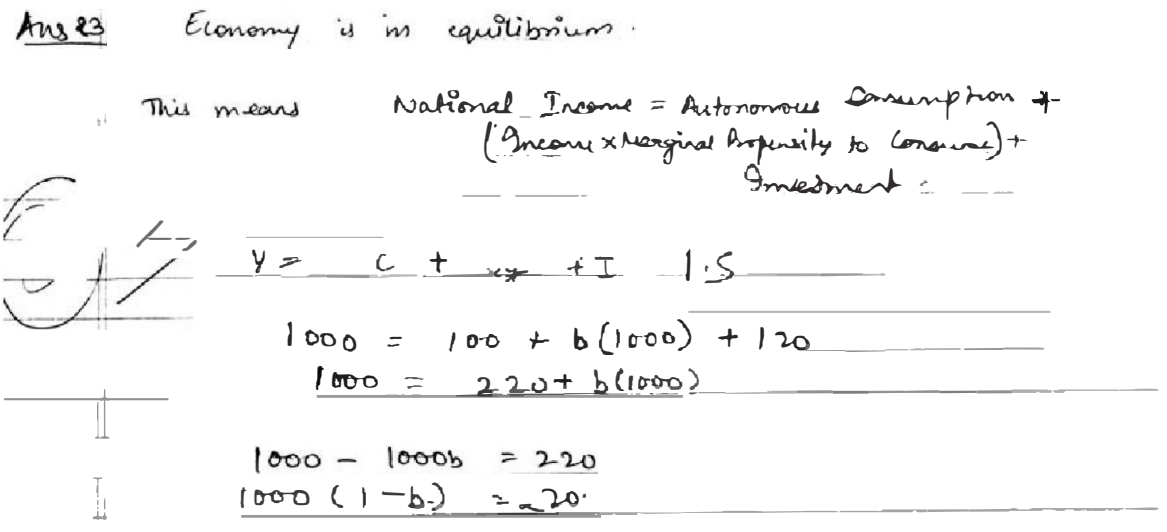
National Income = 1,000

Autonomous Consumption = 100

Investment = 120

[OD Set-II 2015]

Ans.



[Topper Answer 2015]

Detailed Answer :

Given, $Y = 1{,}000$

$C = 100$

$I = 120$

Calculate MPS $= ?$

We know, $Y = C + b(Y) + I$

or $1{,}000 = 100 + b(1{,}000) + 120$

or $1{,}000 = 220 + 1{,}000b$

or $b = \dfrac{1{,}000 - 220}{1{,}000}$

$b = \dfrac{780}{1{,}000}$

or $b = 0.78$

$1 - \text{MPC} = \text{MPS}$

or $1 - 0.78 = \text{MPS}$

or MPS $= 0.22$ **3**

A Q. 21. An economy is in equilibrium. Calculate the National Income from the following :
Autonomous Consumption = 120
Marginal Propensity to Save = 0.2
Investment Expenditure = 150
[OD Set-III 2015]

Ans. Given, $\bar{C} = 120$, MPS = 0.2

or MPC = 1 – 0.2 = 0.8

$I = 150$

$Y = \bar{C} + b(Y) + I$

or $Y = 120 + 0.8\,(Y) + 150$

or $Y - 0.8\,Y = 270$

or $0.2\,Y = 270$

$$Y = \frac{270}{0.2} = 1{,}350$$

$Y = ₹\,1{,}350.$ **3**

A Q. 22. Calculate Investment Expenditure from the following data about an economy which is in equilibrium :
National Income = 1,000
Marginal Propensity to Save (MPS) = 0.25
Autonomous Consumption Expenditure = 200
[Delhi Set I, II, III 2014]

Ans. $Y = C + I$

where $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$ **1**

$1{,}000 = 200 + (1 - 0.25)\,1{,}000 + I$

or $1{,}000 = 200 + 0.75 \times 1{,}000 + I$ **1**

or $1{,}000 = 200 + 750 + I$

or $1{,}000 = 950 + I$

or $I = 1{,}000 - 950$

$I = ₹\,50$ **1**

[CBSE Marking Scheme, 2014]

A Q. 23. Calculate Marginal Propensity to Consume from the following
(i) Equilibrium Income = ₹ 350
(ii) Consumption Expenditure at Zero Income = ₹ 20
(iii) Investment = ₹ 50
[Delhi Set-II Comptt. 2013]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

or $350 = 20 + b(350) + 50$

or $350 = 70 + 350b$

or $350\,b = 280$

$$b = \frac{280}{350} = \frac{4}{5} = 0.8$$

or $b = 0.8$ **3**

A Q. 24. Calculate Investment from the following :
(i) Equilibrium Income = ₹ 500
(ii) Consumption Expenditure at Zero Income = ₹ 50
(iii) Marginal Propensity to Consume = 0.7
[Delhi Set-I, II, III Comptt. 2013]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

Putting the values

$Y = \bar{C} + b(Y) + I$

or $500 = 50 + 0.7\,(500) + I$

or $500 = 50 + 350 + I$

or $I = 500 - 400$

or $I = ₹\,100$ **3**

A Q. 25. Calculate equilibrium level of income from the following :
(i) Consumption Expenditure at Zero Income = ₹ 40
(ii) Marginal Propensity to Consume = 0.8
(iii) Investment = ₹ 80
[Delhi Set-III Comptt. 2013]

Ans. $Y = C + I$

and we know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

or $Y = 40 + 0.8\,Y + 80$

or $Y - 0.8\,Y = 120$

or $0.2\,Y = 120$

or $$Y = \frac{120}{0.2} = 600$$

$Y = ₹\,600$ **3**

A Q. 26. Calculate equilibrium national income from the following :
(i) Consumption Expenditure at Zero Income = ₹ 60
(ii) Marginal Propensity to Consume = 0.9
(iii) Investment = ₹ 100
[OD Set-I Comptt. 2013]

Ans. $Y = C + I$

We Know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

or $Y = 60 + 0.9(Y) + 100$

or $Y = 0.9Y + 160$

or $Y - 0.9Y = 160$

or $0.1Y = 160$

or $$Y = \frac{160}{0.1} = 1{,}600$$

$Y = ₹\,1{,}600.$ **3**

A Q. 27. In an economy, a 40 percent increase in investment results in a 40 percent increase in income. Calculate the Marginal Propensity to Consume. **[Delhi Set-II Comptt. 2012]**

Ans. $\Delta I = 40\%, \Delta Y = 40\%$

$$K = \frac{\Delta Y}{\Delta I} = \frac{0.04}{0.04} = 1$$

We know, $$K = \frac{1}{1 - MPC}$$

$$0.04 \quad \frac{1}{1 - MPC}$$

$$0.04$$

or $1 = \frac{1}{1 - MPC}$

or $1 - MPC = 1$

or $1 - 1 = MPC$

or $MPC = 0$ **3**

A Q. 28. Complete the following table :

Income (Y)	Marginal Propensity to Save (MPS)	Average Propensity to Save (APS)	Consumption Expenditure (C)
200		0.4	120
400	—	—	220
—	—	0.48	260

[OD Set-I Comptt. 2012]

Ans.

Income	MPS	APS	C	S
200	—	0.4	120	80
400	0.5	0.45	220	180
500	0.6	0.48	260	240

$APC = 1 - APS$

$= 1 - 0.4 = 0.6$

$APC = \frac{C}{Y}$.

$\frac{120}{200} = 0.6$

$= \frac{220}{400} = 0.52$

$APC = \frac{260}{500} = 0.52$ **3**

A Q. 29. Complete the following table :

Income ₹	Consumption Exp.	Average Propensity to Save (APS)	Marginal Propensity to Save (MPS)
400	240	0.4	—
800	440	—	—
—	520	0.48	—

[OD Set II Comptt. 2012]

Ans.

Income	C	APS	MPS
400	240	0.4	—
800	440	0.45	0.5
1,000	520	0.48	0.6

3

A Q. 30. Find Consumption Expenditure from the following :

National Income = ₹ 5,000

Autonomous Consumption = ₹ 1,000

Marginal Propensity to Consume = 0.8.

[OD Set-I 2012]

Ans. $Y = C + I$

and we Know $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

or $C = 1{,}000 + 0.8\ (5{,}000)$ **1**

or $C = 1{,}000 + 4{,}000$

or $C = ₹\ 5{,}000$ ½

[CBSE Marking Scheme, 2012]

A Q. 31. Find the Consumption Expenditure from the following :

Autonomous Consumption = ₹ 100

Marginal Propensity to Consume = 0.70

National Income = ₹ 1,000

[Delhi Set III 2012]

Ans. $C = \bar{C} + b(Y)$

or $C = 100 + 0.7\ (1{,}000)$

or $C = 100 + 700$

or $C = ₹\ 800$ **3**

A Q. 32. Find National Income from the following :

Autonomous Consumption = ₹ 100

Marginal Propensity to Consume = 0.60

Investment = ₹ 200

[OD Set-II 2012]

Ans. Here, $\bar{C} = ₹\ 100$, MPC or $b = 0.60$, $I = ₹\ 200$

$b = 0.6$

$I = S = ₹\ 200$

Now, we know that $Y = C + S$

or $Y - S = C$

or $Y - S = \bar{C} + bY$ $[\because C = \bar{C} + bY]$

or $Y - 200 = 100 + 0.6\ Y$

or $Y - 0.6\ Y = 100 + 200$

or $1.4\ Y = 300$

$Y = \frac{300}{0.4} = ₹\ 750$

Hence, National Income (Y) = ₹ 750 **3**

A Q. 33. Find Investment from the following :

National Income = ₹ 600

Autonomous Consumption = ₹ 150

Marginal Propensity to Consume = 0.70

[OD Set-III 2012]

Ans. Here, $Y = ₹\ 600$

$\bar{C} = ₹\ 150$

MPC or $b = 0.70$

We know that, $Y = C + S$

or $Y - C = S$

or $S = Y - C$

or $S = 600 - [\bar{C} + bY]$ **1½**

or $S = 600 - [150 + 0.7 \times 600]$ **1**

or $S = 600 - [150 + 420]$

or $S = 600 - 570$

or $S = ₹\ 30$

As, $I = S = ₹\ 30$

Hence, Investment = ₹ 30 ½

A Q. 34. Find the investment from the following :

National Income = ₹ 500

Autonomous Consumption = ₹ 100

Marginal Propensity to Consume = 0.75

[Delhi Set-II 2012]

Ans. $Y = C + I$

and we know $C = C + b(Y)$

$Y = C + b(Y) + I$ **1½**

$500 = 100 + 0.75\,(500) + I$ **1**

or $500 = 100 + 375 + I$

~~or $500 - 475 = I$~~

or $I = ₹\,25$

A **Q. 35.** Find Equilibrium National Income :

Autonomous Consumption Expenditure = 120
Marginal Propensity to Consume = 0.9
Investment Expenditure = 1,100

[Foreign Set-I 2016]

Ans. $Y = C + MPC(Y) + I$ **1**

$Y = 120 + 0.9\,(Y) + 1{,}100$

$0.1Y = 120 + 1{,}100 = 1{,}220$ **1**

$Y = ₹\,12{,}200$ **1**

[CBSE Marking Scheme, 2016]

A **Q. 36.** An economy is in equilibrium. Find Marginal Propensity to Consume :

Autonomous Consumption Expenditure = 100
Investment Expenditure = 100
National Income = 2,000

[Foreign Set-II 2016]

Ans. $Y = C + MPC(Y) + I$ **1½**

$200\,\theta = 100 + MPC(2000) + 100$ **1**

$MPC = \dfrac{200 - 100 - 100}{200} = \dfrac{200}{1800} = 0.9$ **½**

[CBSE Marking Scheme, 2016]

A **Q. 37.** An economy is in equilibrium. Find Autonomous Consumption Expenditure :

National Income = 1,600
Investment Expenditure = 300
Marginal Propensity to Consume = 0.8

[Foreign Set-III 2016]

Ans. $Y = C + MPC(Y) + I$ **1**

$1600 = C + 0.8(1600) + 300$ **1**

$C = 1600 - 1280 - 300 = 20$ **1**

[CBSE Marking Scheme, 2016] 3

A **Q. 38.** If in an economy :

(a) Consumption function is given by $C = 100 + 0.75\,Y$, and

(b) Autonomous investment is ₹ 150 crores.

Estimate (i) Equilibrium level of income and (ii) Consumption and Savings at the equilibrium level of income. **[SQP 2016]**

[Foreign Set-I 2012]

Ans. $C = 100 + 0.75\,Y$

$I = 150$

(i) At equilibrium level of income :

$Y = C + I$

$Y = 100 + 0.75\,Y + 150$

$Y = 0.75Y = 250$

$Y = 250/0.25 = 1{,}000$ (in ₹ crores) **1**

(ii) $C = 100 + 0.75Y = 100 + 0.75(1000) = 100 + 750$
$= 850$ (in ₹ crores)

$Y = C + S$ or $S = Y - C = 1{,}000 - 850 = 150$
(in ₹ crores) **1**

[CBSE Marking Scheme, 2016]

A **Q. 39.** From the following data calculate investment expenditure

(i) Marginal propensity to save = 0.2

(ii) Equilibrium level of income = 22500

(iii) Autonomous consumption = 500

[OD Set-I Comptt. 2016]

Ans. $Y = C + (1 - MpS)Y + I$ **1½**

$22{,}500 = 500 + (1 - 0.2)\,22{,}500 + I$ **1**

$I = 22{,}500 - 500 - 18{,}000 = 4000$ **½**

(Calculation based on I = Y – C is also correct)

(No marks if only the final answer is given)

[CBSE Marking Scheme, 2016]

A **Q. 40.** In an economy investment expenditure is 1,000, autonomous consumption is 500 and marginal propensity to save is 0.2. Calculate its equilibrium level of income.

[OD Set-II Comptt. 2016]

Ans. $Y = C + (1 - MPS)Y + I$ **1½**

$Y = 500 + (1 - 0.2)Y + 1{,}000$ **1**

$0.2Y = 1{,}500,\ Y = 7{,}500$ **½**

(No Marks if only the final answer is given) **½**

[CBSE Marking Scheme, 2016] 3

A **Q. 41.** Calculate consumption expenditure in the economy whose equilibrium level of income is 20,000, autonomous consumptionis 500 and marginal propensity to save is 0.5.

[OD Set-III Comptt. 2016]

Ans. $C = \bar{C} + (1 - MPS)Y$ **1½**

$= 500 + (1 - 0.5)\,20{,}000$ **1**

$C = 500 + 10{,}000 = 10{,}500$ **½**

(No Marks if only the final answer is given)

[CBSE Marking Scheme, 2016] 3

A **Q. 42.** From the following data calculate the equilibrium level of national income :

(i) autonomous consumption = 500

(ii) marginal propensity to save = 0.2

(iii) Investment = 2000

[Delhi Set-I Comptt. 2016]

Ans. $Y = C + (1 - MPS)Y + I$ **1**

$Y = 500 + (1 - 0.2)Y + 2{,}000$ **1**

$0.2Y = 2{,}500,\ Y = 12{,}500$ **½**

(No marks if only the final answer is given)

[CBSE Marking Scheme, 2016]

A **Q. 43.** From the following data calculate marginal propensity to consume.

(i) Equilibrium level of income = 2,000

(ii) Autonomous consumption = 200

(iii) Investment expenditure = 800

[Delhi Set-II Comptt. 2016]

Ans. $Y = C + MPS.Y + I$ **1½**

$2000 = 200 + MPC\ (2000) + 800$ **1**

$2000\ MPC = 2000 - 200 - 800$ **½**

$MPC = \frac{1000}{2000} = 0.5$ **½**

(No Marks if only the final answer is given)

[CBSE Marking Scheme, 2016]

A **Q. 44.** Calculate investment expenditure in the economy from the following data :

(i) Equilibrium level of income = 10,000

(ii) Autonomous consumption = 500

(iii) Marginal propensity to consume = 0.75

[Delhi Set-III Compt. 2016]

Ans. $Y = C + MPS.Y + I$ 1½

$10,000 = 500 + 0.75\ (10,000) + I$ **1**

$I = 10,000 - 500 - 7,500$ **½**

$I = 2,000$ **½**

(No marks if only the final answer is given)

[CBSE Marking Scheme, 2016]

Short Answer Type Questions–II

4 marks each

A **Q. 1.** Calculate Autonomous Consumption Expenditure from the following data about an economy which is in equilibrium.

National Income = 1,200

Marginal Propensity to Save = 0.20

Investment Expenditure = 100

[Delhi Set-II 2014]

Ans. $Y = C + I$

and $C = \bar{C} + b(Y)$

or $Y = \bar{C} + b(Y) + I$

$MPC = 1 - MPS$

$= 1 - 0.2 = 0.8$

$1,200 = \bar{C} + 0.8 \times 1,200 + 100$

or $\bar{C} = 1,200 - 960 - 100$

$= 1,200 - 1,060$

$= ₹\ 140$ **1**

[CBSE Marking Scheme, 2014]

A **Q. 2.** Calculate Marginal Propensity to Consume from the following data about an economy which is in equilibrium:

National Income = 1,500

Autonomous Consumption Expenditure = 300

Investment Expenditure = 300

[Delhi Set-I, III 2014]

Ans.

$Y = C + I$

and $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$ **1½**

or $1,500 = 300 + (b)1,500 + 300$

or $1,500 - b(1,500) = 300 + 300$

or $1,500\ (b) = 1,500 - 600$ 1½

or $1,500\ (b) = 900$

or $(b) = \frac{900}{1,500} = 0.6$

b or $(MPC) = 0.6$ **1**

A **Q. 3.** Calculate Autonomous Consumption Expenditure from the following data about an economy which is in equilibrium :

National Income = 900

Marginal Propensity to Save = 0.10

Investment Expenditure = 80

[Foreign Set-I, II, III 2014]

Ans. $Y = C + I$

and $C = \bar{C} + b(Y)$

or $Y = \bar{C} + b(Y) + I$ **1½**

$MPC = (1 - MPS) \therefore (1 - 0.1) = 0.9$

$900 = \bar{C} + 0.9\ (900) + 80$ **1½**

or $900 = \bar{C} + 810 + 80$

or $\bar{C} = 900 - 890$

or $\bar{C} = 10$ **1**

[CBSE Marking Scheme, 2014]

A **Q. 4.** Calculate Marginal Propensity to Consume from the following data about an economy which is in equilibrium :

National Income = 800

Autonomous Consumption Expenditure = 100

Investment Expenditure = 100

[Foreign Set-II 2014]

Ans. $Y = C + I$

Where, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$ **1½**

$800 = 100 + b(800) + 100$ **1**

$800\ b = 800 - 200$

or $800\ b = 600$ **1**

or $b = \frac{600}{800} = 0.75$

$b = 0.75$ **½**

A **Q. 5.** Calculate "Investment Expenditure" from the following data about an economy which is in equilibrium :

National Income = 700

Marginal Propensity to Consume = 0.8

Autonomous Consumption Expenditure = 70

[Foreign Set-III 2014]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

or $Y = \bar{C} + b(Y) + I$ **1½**

$700 = 70 + 0.8\ (700) + I$ 1½

or $700 = 70 + 560 + I$

or $I = 700 - 630$

or $I = 70$ **1**

[CBSE Marking Scheme, 2014]

A **Q. 6.** Calculate Marginal Propensity to Consume from the following data about an economy which is in equilibrium :

National Income = 2,000
Autonomous Consumption Expenditure = 200
Investment Expenditure = 100

[OD Set-I 2014]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$ **1½**

or $2{,}000 = 200 + b(2{,}000) + 100$ **1½**

or $2{,}000 - 300 = 2{,}000\,b$

or $2{,}000\,b = 1{,}700$

$b = \frac{1{,}700}{2{,}000} = 0.85$ **1**

$b = 0.85$

[CBSE Marking Scheme, 2014]

A **Q. 7.** Calculate Investment Expenditure from the following data about an economy which is in equilibrium :

National Income = 1000
Marginal Propensity to Save = 0.20
Autonomous Consumption Expenditure = 100

[OD Set-II 2014]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

MPC + MPS = 1 $\therefore$ MPC = 1 – MPC

MPC = 1 – 0.2

= 0.8

$1{,}000 = 100 + (0.8)(1{,}000) + I$ **1½**

or $1{,}000 = 100 + 800 + I$

or $I = 1{,}000 - 900$

or $I = 100.$ **1**

[CBSE Marking Scheme, 2014]

A **Q. 8.** Calculate Investment Expenditure from the following data about an economy which is in equilibrium :

National Income = 500
Marginal Propensity to Save = 0.30
Autonomous Consumption Expenditure = 100

[OD Set-II 2014]

Ans. $Y = C + I$

We know, $C = \bar{C} + b(Y)$

$Y = \bar{C} + b(Y) + I$

We know, MPC + MPS = 1

MPC = 1 – MPS = 1 – 0.30

or MPC = 0.70

Now, $500 = 100 + 0.7\,(500) + I$

or $500 = 100 + 350 + I$

or $I = 500 - 450$

or $I = 50$ **1**

[CBSE Marking Scheme, 2014]

A **Q. 9.** Complete the following table : **[Delhi Set-I, II, III Comptt. 2012]**

Income (Y)	Marginal Propensity to Consume (MPC)	Saving (S)	Average Propensity to Consume (APC)
100		40	0.60
200	—	90	—
—	—	125	0.50

Ans.

Y	MPC	S	APC	C
100	—	40	0.60	60
200	0.5	90	0.55	110
250	0.3	125	0.50	125

4

A **Q. 10.** Complete the following table : **[OD Set-III Comptt. 2012]**

Income (Y)	APC	MPC	Consumption Expenditure
1,000	0.50		500
2,000	0.55	—	—
2,500	0.60	—	—

Ans.

Income	APC	MPC	Consumption (C)
1,000	0.5	—	500
2,000	0.55	0.4	900
2,500	0.6	0.2	1000

4

Long Answer Type Questions

6 marks each

U **Q. 1.** **(a)** Define Aggregate Demand. What are its component ?

(b) From the following data about an economy, calculate its equilibrium level of income.

(i) Marginal Propensity to Consume = 0.75
(ii) Autonomous Consumption = 200
(iii) Investment = 6,000

[OD Set-II Comptt. 2014]

Ans. (a) Aggregate Demand—It refers to the total value of final goods and services that all sector of the economy taken together are planning to buy at a given level of income during a period of time.

Components are :

(i) Private Consumption Expenditure (C)
(ii) Investment Expenditure (I)
(iii) Government Expenditure (G)
(iv) Net Exports (X – M) **2**

(b) $Y = C + I$ **1**

Whereas, $C = C + b(Y)$
or
$Y = C + b(Y) + I$ **1**

or $Y = 200 + 0.75\,(Y) + 6,000$ **1**

or $Y - 0.75Y = 6,200$

or $0.25Y = 6,200$

or $Y = \dfrac{6,200}{0.25}$

$= 24,800$

or $Y = ₹\,24,800$ **1**

[CBSE Marking Scheme, 2014]

U **Q. 2.** (a) Distinguish between Aggregate Demand and Aggregate Supply.

(b) From the following data about an economy calculate its equilibrium level of income.

(i) Marginal Propensity to Consume = 0.8
(ii) Investment = 5,000
(iii) Autonomous Consumption = 500

[Delhi Set-III Comptt. 2014]

Ans. (a) Aggregate Demand (AD) : It is the total demand for goods and services in an economy measured in terms of total expenditure. It is denoted by AD.
Aggregate Supply (AS) : It refers to flow of goods and services in can economy during one year. This in *Ex-ante* output during the year, or the output which the producers intend to produce during the year. **2**

(b) $Y = C + I$

Whereas, $C = C + b(Y)$

$Y = C + b(Y) + 500$ **2**

or $Y = 500 + 0.8(Y) + 5,000$ **1½**

or $Y - 0.8Y = 5,500$

or $0.2Y = 5,500$

or $Y = \dfrac{5,500}{0.2}$

or $Y = ₹\,27,500$

[CBSE Marking Scheme, 2014]

U **Q. 3.** (a) Distinguish between Autonomous Investment and Induced Investment.

(b) On the basis of the following information about an economy, calculate its equilibrium level of income.

(i) Autonomous Consumption = 100
(ii) Marginal Propensity to Consume = 0.75
(iii) Investment = 5,000

[Delhi Set-I Comptt. 2014]

Ans. (a) Autonomous Investment : It is the expenditure on capital formation, which is independent of the change in income, rate of interest and rate of profit.
Induced Investment : It is the investment which is undertaken as a result of a change in the level of income or consumption. It depends upon profit expectations. **2**

(b) $Y = C + I$

and $C = C + b(Y)$

Here $Y = C + b(Y) + I$ **2**

Since $S = I = 5,000$

or $Y = 100 + 0.75\,(Y) + 5,000$ **1½**

or $Y - 0.75\,Y = 5,100$

or $0.25Y = 5,100$

or $Y = \dfrac{5,100}{0.25} = \dfrac{5,100}{25} \times 100$

$Y = ₹\,20,400$ ½

[CBSE Marking Scheme, 2014]

U **Q. 4.** (a) Distinguish between Autonomous Consumption and Induced Consumption.

(b) From the following data about an economy, Calculate its equilibrium level of income.

(i) Marginal Propensity to Consume = 0.5
(ii) Autonomous Consumption = 300
(iii) Investment = 6,000

[Delhi Set-II Comptt. 2014]

Ans. (a) Autonomous Consumption—The expenditure which is not influenced by income is called Autonomous Consumption. Or it refers to minimum level of consumption even when income is zero. It is indicated by C in consumption function : $C = C + bY$
Induced Consumption—The consumption expenditure which changes with change in income is called Induced Consumption. **2**

(b) $Y = C + I$

but $C = C + b(Y)$ **2**

$Y = 300 + 0.5\,(Y) + 6,000$ **1½**

or $Y - 0.5\,Y = 6,300$

or $0.5Y = 6,300$

or $Y = \dfrac{6,300}{0.5}$

or $Y = ₹\,12,600$ ½

[CBSE Marking Scheme, 2014]

U **Q. 5.(a) Distinguish between Autonomous Consumption and Induced Consumption.**

(b) From the following data about an economy, Calculate its equilibrium level of income

(i) Autonomous Consumption = 400

(ii) Marginal Propensity to Consume = 0.5

(iii) Investment = 4.000

[OD Set III Comptt. 2014]

Ans. (a) For part (a) See Q. No. 4 of this section.

(b) $Y = C + I$

Where $C = C + b(Y)$

$Y = C + b(Y) + I$

or $Y = 400 + 0.5(Y) + 4,000$

or $Y - 0.5Y = 4,400$

or $0.5Y = 4,400$

or $Y = \frac{4,400}{0.5}$

or $Y = ₹ 8800$

[CBSE Marking Scheme, 2014] 6

U **Q. 6.** Explain the Consum tion Function and Savin Function. **[Foreign Set-I, II, III 2014]**

Ans. Consumption Function—The relationship between the consumption expenditure and the income is known as Consumption Function.

$C = f(Y)$

Where C = Consumption Expenditure

f = Function

Y = Income

Algebraic Expression of Consumption Function—The algebraic expression of Consumption Function is given by

$C = C + b(Y)$

Here, C = Consumption Expenditure

C = Minimum Level of Consumption at zero income

b = Marginal Propensity to consume

Y = Income

It is of two types :

(i) Average Propensity to Consume (APC)—The ratio between the consumption expenditure and income is called Average Propensity to Consume.

$$APC = \frac{C}{Y}$$

(ii) Marginal Propensity to Consume (MPC)—The ratio between the change in consumption expenditure with change in income is called Marginal Propensity to Consume.

$$MPC = \frac{\Delta C}{\Delta Y}$$ **3**

Saving Function—The relationship between saving and income is known as Saving Function.

$S = f(Y)$

Saving is the residual of income after consumption.

$S = Y - C$

Algebraic Expression of Saving Function—It is given by

$S = (-)\bar{S} + b(Y)$

It is of two types :

(i) Average Propensity to Save (APS)—The ratio between total saving and the total income in an economy at a given level of income is termed as Average Propensity to Save (APS).

$$APS = \frac{S}{Y}$$

(ii) Marginal Propensity to Save (MPS)—The ratio between the change in saving with the change in income is known as Marginal Propensity to Save.

$$MPS = \frac{\Delta S}{\Delta Y}$$ **3**

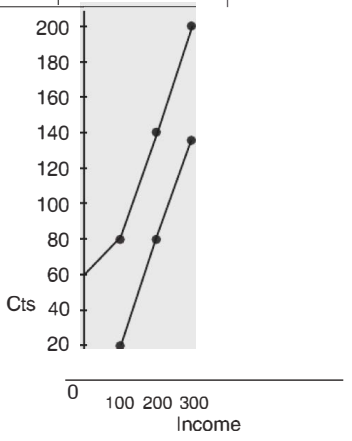
[CBSE Marking Scheme, 2014]

A **Q. 7.** C = 20 + 0.6Y.

Presuming the income levels to be ₹ 100, ₹ 200 and ₹ 300 crore. Calculate that level of income where consumption is equal to income. **[SQP 2016]**

Ans. C = 20 + 0.6Y.

Y	C	S
100	80	20
200	140	70
300	200	100



[CBSE Marking Scheme, 2016] 6

A **Q. 8.** C = 100 + 0.4 Y is the consumption function of an economy, where C is Consumption Expenditure and Y is National Income. Investment Expenditure is 1,100. Calculate

(i) Equilibrium level of National Income.

(ii) Consumption Expenditure at equilibrium level of National Income. **[Delhi Set-I, II, III 2013]**

Ans. $Y = C + I$ **1**

$Y = 100 + 0.4Y + 1,100$ **1**

or $Y - 0.4Y = 1,200$

or $0.6Y = 1,200$ **½**

or $Y = \frac{1,200}{0.6}$

$= 2,000$

$Y = 2,000$ ½

Now $C = 100 + 0.4Y$ (Given)

or $C = 100 + 0.4\ (2,000)$ **2**

or $C = 100 + 800$

$C = 900$ **1**

[CBSE Marking Scheme, 2013]

A **Q. 9.** Complete the following table : **[Delhi Set I 2013]**

Income (₹) (Y)	Consumption Expenditure (₹)	Marginal Propensity to Save (MPS)	Average Propensity to Save (APS)
0	80	—	—
100	140	0.4	—
200	—	—	0
—	240	—	0.20
—	260	0.8	0.35

Ans.

Income ₹ (Y)	C	MPS	APS
0	80	—	—
100	140	0.4	**(–) 0.4**
200	**200**	**0.4**	0
300	240	**0.4**	0.20
400	260	0.8	0.35

6

A Q. 10. Complete the following table : **[Delhi Set-II 2013]**

Income ₹ (Y)	Saving ₹	Average Propensity to Consume (APC)	Marginal Propensity to Consume (MPC)
0	–40	—	—
50	–20	—	—
100	0	—	0.6
150	30	0.8	—
200	50	—	—

Ans.

Y	S	C	APC	ΔC	MPC
0	–40	40	—	—	—
50	–20	70	**1.4**	30	**0.6**
100	0	100	**1**	30	0.6
150	30	120	0.8	20	**0.4**
200	50	150	**0.75**	30	0.6

6

A **Q. 11.** In an economy, $S = -100 + 0.6Y$ is the saving function, where S is saving and Y is National Income. If Investment Expenditure is 1,100, Calculate :

(i) Equilibrium Level of National Income.

(ii) Consumption Expenditure at equilibrium level of National Income. **[Delhi Set-II 2013]**

Ans. We know, $S = I$ **1**

$-100 + 0.6Y = 1,100$ **1**

or $0.6Y = 1,100 + 100$ ½

or $0.6Y = 1,200$

or $Y = \frac{1200}{0.6} = 2,000$

$Y = 2,000$ ½

Now, $Y = C + I$ **1**

$2,000 = C + 1,100$

or $C = 2,000 - 1,100$ **1**

or $C = 900$ **1**

[CBSE Marking Scheme, 2013]

A **Q. 12.** $C = 50 + 0.5\ Y$ is the Consumption Function of an Economy, where C is Consumption Expenditure and Y is National Income and

Investment Expenditure is 2,000 in an economy. Calculate :

(i) Equilibrium level of National Income.

(ii) Consumption Expenditure at equilibrium level of National Income. **[Delhi Set-III 2013]**

Ans. Given $C = 50 + 0.5\,Y$

$I = 2{,}000$

(i) $Y = C + I$ **1**

$Y = 50 + 0.5\,Y + 2{,}000$ **1**

or $Y - 0.5\,Y = 50 + 2{,}000$

or $0.5\,Y = 2{,}050$

or $Y = 4{,}100$

National Income = 4,100

(ii) $C = 50 + 0.5\,Y$ (Given)

or $C = 50 + 0.5\,(4{,}100)$ **2**

or $C = 50 + 2{,}050$ ½

or $C = 2{,}100$ ½

∴ Consumption Expenditure = 2,100

[CBSE Marking Scheme, 2013]

A **Q. 13.** Complete the following table : **[Delhi Set-III 2013]**

Consumption Expenditure	Savings ₹ (S)	Income ₹ (Y)	Marginal Propensity to Consume (MPC)
100	50	150	
175	75	—	—
250	100	—	—
325	125	—	—

Ans.

(C)	(S)	(Y) = (C + S)	MPS $\frac{\Delta C}{\Delta Y}$
100	50	150	—
175	75	250	0.75
250	100	350	0.75
325	125	450	0.75

6

A **Q. 14.** From the data given below about an economy. Calculate :

(a) Investment Expenditure.

(b) Consumption Expenditure.

(i) Equilibrium level of income ₹ 5,000

(ii) Autonomous Consumption ₹ 500

(iii) Marginal Propensity to Consume 0.4

[OD Set-I 2013]

Ans. (a) $Y = C + I$ **1**

$C = 500 + 0.4\,Y$ **1**

So, $Y = 500 + (0.4Y \times 5{,}000) + I$ **1**

$5{,}000 = 500 + 0.4 \times 5{,}000 + I$

$I = 2{,}500$ **1**

(b) $C = 500 + 0.4 \times 5{,}000$

$= 2{,}500$

[CBSE Marking Scheme, 2013]

A **Q. 15.** In an economy C = 200 + 0.75Y is the Consumption Function where C is Consumption Expenditure and Y is National Income. Investment Expenditure is 4,000. Calculate equilibrium level of Income and Consumption Expenditure. **[OD Set-II 2013]**

Ans. $Y = C + I$ **1**

and we know, $C = 200 + 0.75\,Y.$

ϖ $Y = 200 + 0.75\,Y + 4{,}000$ **2**

or $Y - 0.75\,Y = 4{,}200$

or $0.25\,Y = 4{,}200$

or $Y = \frac{4200}{0.25} = 16\,800$

$Y = 16{,}800$ **1**

$C = 200 + 0.75\,(16{,}800)$ **1**

or $C = 200 + 12{,}600$

$C = 12{,}800$ **1**

[CBSE Marking Scheme, 2013]

A **Q. 16.** From the following data about an economy, Calculate (a) Equilibrium level of National Income and (b) Total Consumption Expenditure at Equilibrium level of National Income.

(i) C = 200 + 0.5Y is the Consumption Function where C is Consumption Expenditure and Y is National Income.

(ii) Investment Expenditure is 1,500. **[OD Set-III 2013]**

Ans. $Y = C + I$ **1**

We know $C = C + b(Y)$

$= 200 + 0.5(Y)$

or $Y = 200 + 0.5\,(Y) + 1{,}500$ **2**

or $Y - 0.5\,Y = 1{,}700$

or $0.5\,Y = 1{,}700$

or $Y = 3{,}400$ ½

$C = 200 + 0.5\ (3{,}400)$ **2**

or $C = 200 + 1{,}700$

or $C = 1{,}900$ ½

[CBSE Marking Scheme, 2013]

R **Q. 17.** State whether the following statements are true or false. Give reasons for your answer :

(i) Inventories accumulate when planned investment is less than planned saving.

(ii) Inflationary gap exists when aggregate demand is greater than aggregate supply.

(iii) Average propensity to save can be negative.

[Delhi Set-I, II, III Comptt. 2016]

Ans. (i) True, because I < S means AD < AS which will lead to accumulation of inventions. **2**

(ii) False, because inflationary gap exists when AD > AS at full employment. **2**

(iii) True, APS can be negative because AD can exceed AS upto a level of income. **2**

(No marks if the reason is not given)

[CBSE Marking Scheme, 2016]

Quick Review

Short Run : According to **J. M. Keynes**, "A period of time during which level of output is determined exclusively by the level of employment in the economy, is termed as short run."

Full Employment : It refers to a situation, where all those workers who are able to work and willing to work get employment at prevailing wage rate.

In an economy :

Income Equilibrium Level = Output Equilibrium Level = Employment Equilibrium Level

(Y) (O) (N)

Classical Concept of Equilibrium

It is based on **J.B. Say's** Law, " Supply creates its own demand". Main contribution of classical concept of equilibrium are as follows :

(i) Every Economy works at full employment level.

(ii) Economy has a capacity of self-adjustment. Whatever is produced in an economy is automatically consumed, *i.e.*, supply creates its own demand.

(iii) Over production in an economy is impossible, because every additional production generates additional income and as a result total income equals total saving.

(iv) General unemployment in the economy is not possible because no possibility of over production arises in the economy.

(v) Wage flexibility helps in elimination of unemployment.

(vi) Interest rate flexibility maintains the equality between saving and investment.

Short Run Equilibrium, *i.e.*, Keynesian Approach

(a) AD = AS Approach

Employment is determined at a point where AD = AS.

If AD > AS, firm will employ more factors of production and it will again attain AD = AS.

If AD < AS, firm will cut employment and it will bring again AD = AS.

Change in Equilibrium : Equilibrium position described above may be of full employment or may not be of full employment. It only determines the level of income. Therefore, for full employment we have to twist AD or AS. But AS depends on technological factors therefore if AD increases, it will raise the level of employment.

(b) S = I Approach

According to Keynes income-employment 'equilibrium is determined at a point where S = I.

If S > I then equilibrium income will have a tendency to reduce.

If S < I then equilibrium income will have a tendency to increase.

Ex-Ante Saving : It is the planned or desired or intended saving during a particular period.

Ex-Ante Investment : It is the planned or desired or intended investment during a particular period.

- **Ex-Post Saving :** It is realised saving. It is equal to Ex-Ante saving + Unplanned saving.
- **Ex-Post Investment :** It is realised investment. It is equal to Ex-Ante investment + Unplanned investment.
- **Ex-Post (S) = Ex-Post (I) :** At all levels of income and they are necessarily be equal.
- **Ex-Ante (S) = Ex-Ante (I) :** Only at equilibrium level of income.

Very Short Answer Type Questions

1 mark each

R **Q. 1.** What is Ex-Ante Aggregate Demand ?

[OD Set-I 2010]

Ans. It is a planned Aggregate Demand. **1**

U **Q. 2. When is there the equilibrium level of National Income ?** **[OD Set-III 2010]**

Ans. When Aggregate Demand is equal to Aggregate Supply. **1**

R **Q. 3.** What is meant by Ex-Ante Investment ?

[Delhi, Foreign Set I, II, III 2010]

Ans. It refers to desired (or planned) investment corresponding to different income levels in the economy. **1**

R **Q. 4.** Give the meaning of Ex-Ante Saving.

[Delhi Set I 2010]

Ans. It is the planned or expected saving. **1**

Short Answer Type Questions

3 marks each

U **Q. 1.** Explain the meaning of under-employment equilibrium. **[OD Set-II Comptt. 2015]**

Ans. When aggregate demand is equal to aggregate supply at less than full employment it is a situation of under employment equilibrium *i.e.*, when equilibrium is at less than full employment.

[CBSE Marking Scheme, 2015] 3

U **Q. 2.** "Economists are generally concerned about the rising Marginal Propensity to Save (MPS) in an economy". Explain why ? **[SQP 2016]**

Ans. Since the sum of MPC and MPS is unity. Any increase in Marginal Propensity to Save (MPS) would directly lead to decrease in Marginal Propensity to Consume (MPC). This means that it may lead to lesser proportion of the additional income going for consumption which is a vital factor of Aggregate Demand Expenditure. This may further lead to fall in equilibrium level of income in the economy.

[CBSE Marking Scheme, 2016] 3

U **Q. 3.** Explain how the economy achieves equilibrium level of income using Savings Investment (S-I) approach. **[SQP, 2016]**

Ans. As per the S-I approach, equilibrium if achieved where Ex-Ante Savings are equal to Ex-Ante Investments. Saving and investments indicate leakages and injections are equal to each other.

[CBSE Marking Scheme, 2016] 3

A **Q. 4.** Calculate the equilibrium level of income in the economy. **[Delhi Set-II, Comptt. 2015]**

Ans.

$$C = 500 + (0.9)\,Y$$

Investment Expenditure = 3,000

$$Y = C + I$$

$$Y = 500 + 0.9Y + 3,000$$

$$0.1Y = 3,500$$

$$Y = 35,000$$

[CBSE Marking Scheme, 2015] 3

A **Q. 5.** If in an economy's saving function is given by S = (–) 50 + 0.2 Y and Y = ₹ 2,000 crore; consumption expenditure for the economy would be ₹ 1,650 crore and the autonomous investment is ₹ 50 crore and the marginal propensity to consume is 0.8. True or False ? Justify your answer with proper calculations.

[SQP 2016]

Ans. Yes, all given values are correct.

$$S = -50 + 0.2Y$$

$$S = -50 + 0.2\,(2,000)$$

$$= 50 + 400$$

$$= ₹\ 350 \text{ crore}$$

At equilibrium level of income:

$$Y = C + S$$

$$2,000 = C + 350$$

$$C = 2,000 - 350$$

$$= 1,650 (\text{in } ₹ \text{ crore})$$

$$MPC + MPS = 1$$

$$MPC + 0.2 = 1$$

$$MPC = 1 - 0.2 = 0.8$$ **3**

[CBSE Marking Scheme, 2016]

Long Answer Type Questions

6 marks each

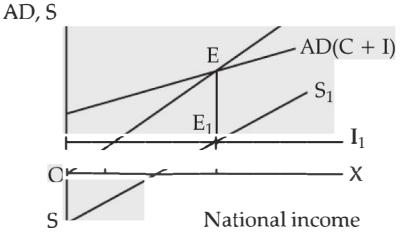
U **Q. 1.** Explain National Income determination through the two alternative approaches. Use diagram. **[Foreign Set-I, II, III 2014]**

OR

Derive the two alternative conditions of expressing National Income Equilibrium. Show these equilibrium conditions on a single diagram. **[Foreign Set-I 2016]**

Ans.

$$AD = AS \quad ...(i)$$
$$(C + I) = (C + S)$$
$$S = I \quad ...(ii)$$

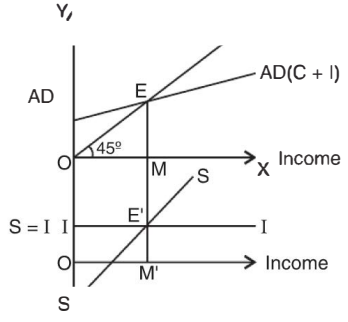


AD = AS is at E where AD curve intersect 45° line at E

S = I is at E′, when Saving Curve intersects Investment Curve at equilibrium National Income is OM.

[CBSE Marking Scheme, 2016] 6

Detailed Answer :



3

The two Alternative Approaches of National Income determination are :

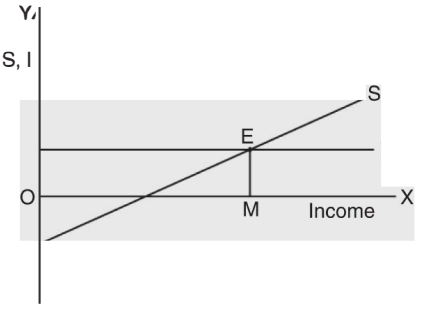
(i) AD = AS which is on E in the upper part of the diagram when AD curve intersects the 45° line with equilibrium income OM. **1½**

(ii) S = I which is at E′ in the lower part of the diagram, when saving curve intersects the investment curve at E′ with OM, as the equilibrium income level. **1½**

U **Q. 2.** When is an Economy in Equilibrium ? Explain with the help of saving and investment functions. Also explain the changes that take place in an economy when the economy is not in equilibrium. Use diagram.

[OD Set-I, II, III 2014]

Ans.



2

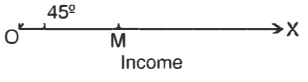
The economy is in equilibrium at that income level at which saving = investment. The equilibrium level of income is OM as at this level S = I. **1**

When the economy is not in equilibrium, saving is not equal to investment : Suppose S > 1 it means AD < AS. This leads to piling up of inventories with the producers. In order to bring down inventories to the desired level, producers cut down production which brings down AS. The trend continues till AD = AS again and S = I where the economy is in equilibrium. Similarly, if S < I, then AD > AS. There is decrease in inventories. Producers increase production, AS rises. This continues till AD = AS. **3**

[CBSE Marking Scheme, 2014]

U **Q. 3.** Explain national income equilibrium through aggregate demand and aggregate supply. Use diagram. Also explain the changes that take place in an economy when the economy is not in equilibrium. **[Delhi Set-I 2014]**

Ans.



1

The National Income is in equilibrium when AD = AS. In the figure, the equilibrium is at E, the interaction of the AD curve and the 45° line. The equilibrium income is OM. **2**

When the economy is not in equilibrium *i.e.* AD is not equal to AS. Suppose, AD is greater than AS (AD > AS). It will lead to fall in inventories with the producers. The producer in turn will produce more to reach the desired level of inventories stock. This raises AS till it becomes equal to AD.

We can explain by AD < AS also.

[CBSE Marking Scheme, 2014] 3

U **Q. 4.** Explain the changes that take place when Aggregate Demand and Aggregate Supply are not equal. **[Delhi Set-I, II, III Comptt. 2015]**

Ans. When AD < AS inventories accumulate. As a result, producers reduce production, AS falls. This process continue till AD = AS.

If AD > AS, inventories fall. To make up for this producer's increase production. AS increases. This process continues till AD= AS. **6**

[CBSE Marking Scheme, 2015]

Detailed Answer :

(i) When AD > AS, it means that the buyers are planning to buy more goods and services than the producers are planning to produce (i.e., supply). In this situation, inventories start falling and come below the desired level, the producers expand production. This raises the income level, which keeps on rising till AD and AS are equal again.

(ii) When AD < AS, it means that the buyers are planning to buy less than what the producers are planning to rpoduce. As a result, inventories start rising and move above the desired level. So the producers cut back on production and lay off workers. This reduces the income level *i.e.,* AS. This downward trend continues till AD and AS once again become equal.

U **Q. 5.** Given Saving Curve, derive Consumption Curve and state the steps in doing so. Use diagram. **[OD Set-I, II, III 2016]**

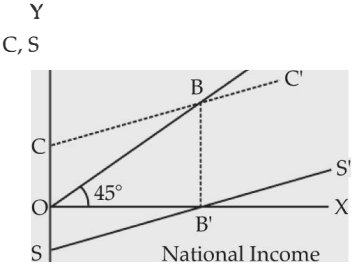
Ans. Given Saving Curve SS'

(i) Draw a 45º line from the origin.

(ii) Take OC equal to OS on the Y-axis.

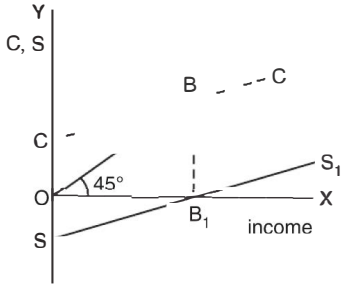
(iii) Draw a perpendicular line from B to B' on OX-axis which intersect 45º line at point B.

(iv) Join C and B and extend it to get consumption curve CC'.



[CBSE Marking Scheme, 2016] 6

Detailed Answer :



Steps :

(i) SS' is the given S-curve. Draw a 45° line from origin

(ii) Take OC equal to OS on the Y-axis.

(iii) Draw a perpendicular (or line parallel to the Y-axis) from B_1 till it intersects the 45° line at B.

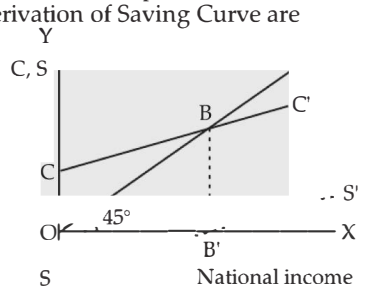
(iv) Join C and B and extend the same to get C-curve.

2 + 4 = 6

U **Q. 6.** Given Consumption Curve, derive Saving Curve and state the steps taken in the process of derivation. Use diagram.

[Delhi Set-I, II, III 2016]

Ans. Given Consumption Curve CC' the steps in derivation of Saving Curve are



(i) Take OS equal to OC.

(ii) Draw a 45° line on OX-axis from point O intersecting CC' at point B.

(iii) Draw a perpendicular from B to intersect X-axis at B'.

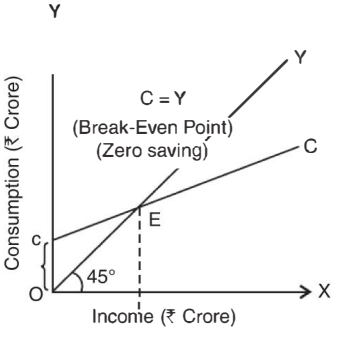
(iv) Joint S and B' and extend it to derive Saving Curve SS'. **[CBSE Marking Scheme, 2016] 6**

Detailed Answer :

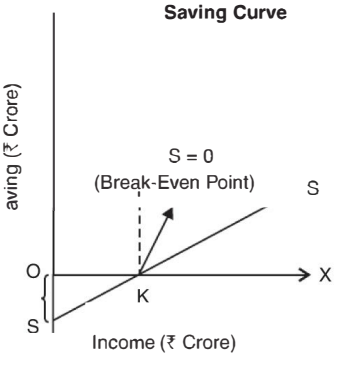
Consumption and Saving Curves are Complementary Curves.

(i) We know that income (Y) is the sum total of consumption (C) and savings (S) as income is either consumed or saved. It means, consumption and saving curves are complementary curves.

Consumption Curve



Saving Curve



(ii) We can derive saving curve from the consumption curve. In the diagram, CC is the consumption curve and the 45° line (OY) represents income. Consumption, at zero level of income, is equal to OC (autonomous consumption). The amount of saving is indicated by vertical distance between consumption curve and income line. So savings, at zero level of income, will be OS (= – OC). It means, the saving curve will start from point S on the negative Y-axis.

(iii) CC intersects OY at point E (Break-even point) where savings are zero. Draw a perpendicular on the X-axis (point K) at the income level where the consumption curve and 45° line intersect each other. Join S and K to obtain saving curve.

(iv) Beyond point E (Break-even point) consumption is less than income. Therefore, savings are positive as saving curve is above the X-axis. As income increases, saving also increases. **6**

U **Q. 7.** In an economy planned spending is greater than planned output. Explain all the changes that will take place in the economy.

[OD Set-I, II, Comptt. 2015]

Ans. Planned spending refers to people planning to purchase final goods and services during the year. Planned output means the production units planning to produce final goods and services during the year.

When planned spending is higher than planned output, the producers find the stocks falling below the desired level. They start raising production. This raises income levels till inventories (stocks) reach the desired level and economy is in equilibrium. **3+3=6**

U **Q. 8.** (i) Explain the distinction between Ex-Ante measures and Ex-post measures.

(ii) From the following data about an economy, calculate its equilibrium level of income.

(i) Autonomous Consumption = 200

(ii) Marginal Propensity to Consume = 0.9

(iii) Investment = 1,000 **[OD Set-I Comptt. 2014]**

Ans. (i) Ex-Ante—Planned or desired value of the variables are their Ex-Ante measures.

Ex-Post—Realised value of the variables are their Ex-Post measures. **2**

(ii) $Y = C + I$

Whereas,

$C = \bar{C} + b(Y)$ **1**

$Y = \bar{C} + b(Y) + I$ **1**

or $Y = 200 + 0.9\,(Y) + 1{,}000$ **1**

or $Y - 0.9\,Y = 1{,}200$

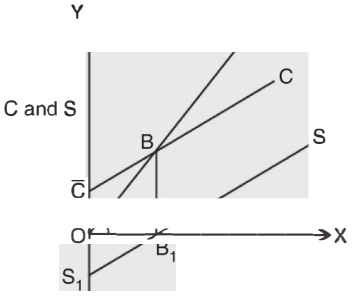
or $0.Y = 1{,}200$

or $Y = \dfrac{1{,}200}{0.1}$

or $Y = ₹\,12{,}000.$ **1**

U **Q. 9.** Outline the steps required to be taken in deriving saving curve from the given consumption curve. **[Delhi Set I, Foreign 2014]**

Ans.



1

Steps—

(i) C C is the given consumption curve on Y axis. Take OS_1 equal to O C .

(ii) Draw a 45° line from the point of origin. It intersects C C at B.

(iii) From point B draw a perpendicular on OX which cuts OX at B_1.

(iv) Join S_1 and B_1 by a straight line and extend it to S.

(v) SS_1 is the saving curve. **1×5=5**

[CBSE Marking Scheme, 2014]

U **Q. 10.** Outline the steps required to be taken in deriving the consumption curve from the given saving curve. Use diagram.

[OD 2014; OD Set I, Comptt. 2011)

Ans. Refer to Q.No-5. of this section.

TOPIC-3
Investment Multiplier and Its Working

Quick Review

Multiplier : It establishes relation between investment and income. It measures the change in income due to change in investment.

$$K = \frac{\Delta Y}{\Delta I} = \frac{\text{Change in Income}}{\text{Change in Investment}}$$

➤ **Relationship between Multiplier and Marginal Propensity to Consume (MPC) :** The size of multiplier is determined by the Marginal Propensity to Consume. There is a direct relation between MPC and K. Higher the MPC, higher is value of K and *vice-versa.*

$$K = \frac{}{1 - MPC}$$

and $$K = \frac{1}{MPS}$$

if MPC = Zero, K = 1

MPC = 1 K = ∞

Value of K lies between 1 and infinity.

➤ Forward and Backward action of multiplier

Multiplier is two-edge instrument and hence, it works in both direction.

1. **Forward Action :** Additional investment creates additional income many more times.
2. **Backward Action :** Withdrawal of investment decreases income many more times.

Very Short Answer Type Questions

1 mark each

R **Q. 1.** What can be the minimum value of Investment Multiplier. **[Delhi Set I, II, III Comptt. 2012]**

Ans. Minimum value of Investment Multiplier is one.**1**

A **Q. 2.** If the value of Marginal Propensity to Save is 0.4, what will be the value of Investment Multiplier ? **[OD Set-I Comptt. 2012]**

Ans. If MPS = 0.4 then value of

$$K = \frac{1}{MPS}$$

$$\frac{1}{0.4} = \frac{1}{1} \times \frac{10}{4}$$

K = 2.5 **1**

R **Q. 3.** The value of multiplier is : choose the correct alternative **[Delhi Set-I, II, III, 2015]**

(a) $\frac{1}{MPC}$ **(b)** $\frac{1}{MPS}$

(c) $\frac{1}{1 - MPS}$ **(d)** $\frac{1}{MPC - 1}$

Ans. (b) $\frac{1}{MPS}$ **1**

R **Q. 4.** If MPC = 1, the value of multiplier is : (choose the correct alternative) **[OD Set-I, II, III 2015]**

(a) 0 **(b)** 1

(c) Between 0 and 1 **(d)** Infinity

Ans. (d) Infinity **1**

Short Answer Type Questions–I

3 marks each

R **Q. 1.** Give the meaning of :

(i) Involuntary Unemployment, and

(ii) Inflationary Gap.

[Delhi Set-I Comptt. 2015]

Ans. (i) Involuntary unemployment exists when willing and able bodied people do not get employment at prevailing wage rate.

(ii) The excess of aggregate demand over aggregate supply at full employment is called inflationary gap. **[CBSE Marking Scheme, 2015] 1½+1½=3**

R **Q. 2.** Give the meaning of :

(i) Autonomous consumption, and (ii) Full employment **[Delhi Set-II Comptt. 2015]**

Ans. (i) Consumption expenditure at zero level of income.

(ii) Full employment is the situation when all those who are able and willing to work get employment at prevailing wage rate.

[CBSE Marking Scheme, 2015] 1½+1½=3

U **Q. 3.** What is investment multiplier ? How is its value determined ? What can be its minimum and maximum value ?

[Delhi Set-I Comptt. 2016]

OR

Explain the meaning of Investment Multiplier. What can be its minimum and maximum value ? **[Delhi Set-I, II, III Comptt. 2014]**

Ans. When investment expenditure increases, there is multiple increase in income. The rates of increase in income to increase in investment expenditure are the value of multiplier. Its value equals

$$\frac{1}{1 - MPC} \text{ Or } \frac{1}{MPS} \text{ Or } \frac{\Delta Y}{\Delta I}$$

Its minimum value is 'one' while the maximum value is infinity.

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

Investment Multiplier—The ratio of increase in

income to increase in investment $\left(\frac{\Delta Y}{\Delta I}\right)$ is called Investment Multiplier.

Investment Multiplier, $K = \frac{1}{MPS}$ or $K = \frac{1}{1 - MPC}$

The minimum value of K may be 1 and maximum value is ∞ (infinity) **3**

U **Q. 4.** Explain the relationship between Investment Multiplier and Marginal Propensity to Consume. **[Delhi Set-I 2011]**

Ans. Investment Multiplier $\frac{1}{1-MPC}$. It shows a direct relationship between MPC and the value of multiplier. Higher the proportion of increased income spend on consumption, higher will be the value of investment multiplier.

[CBSE Marking Scheme, 2011] 3

U **Q. 5.** What is the relationship between :

(i) Average propensity to consume and average propensity to save.

(ii) Marginal propensity to consume and investment multiplier. **[Delhi Set-I, II, III Comptt. 2015]**

Ans. (i) The sum of APC and APS is equal to 1.

(ii) The higher the MPC, the greater is the value of multiplier. **1½+1½=3**

U **Q. 6.** What is the relationship between :

(i) Marginal propensity to save and marginal propensity to consume.

(ii) Marginal propensity to save and investment multiplier. **[Delhi Set-II Comptt. 2015]**

Ans. (i) The sum of MPC and MPS is equal to 1

(ii) The higher the MPS, the lower is the value of multiplier. **1½+1½=3**

[CBSE Marking Scheme, 2015]

A **Q. 7.** In an economy Investment is increased by ₹ 300 crore. If Marginal Propensity to Consume is 2/3, calculate increase in National Income.

[Delhi Set-I 2016]

Ans. $\Delta Y = \Delta I \frac{1}{1-MPC}$

$300 \frac{1}{1-\frac{2}{}}$

$= 300 \times 3 = 900$ crore.

(Answer based on $\Delta Y = K \times \Delta I$ is also correct)

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

$\Delta I = 300$ crore

$MPC = 2/3$

$MPS = 1 - \frac{2}{3} = \frac{1}{3}$

$K = \frac{1}{MPS} = \frac{1}{1/3} = 3$

$\Delta Y = K \times \Delta I$

$= 3 \times 300$ crore

$= 900$ crore **3**

A **Q. 8.** Suppose Marginal Propensity to Consume is 0.8. How much increase in Investment is required to increase National Income by ₹ 2,000 crore? Calculate.

[Delhi Set-I, II, III 2016]

Ans. $\Delta Y = \Delta I \frac{1}{1-MPC}$

$2,000 = \Delta I \frac{1}{1-0.8}$

$2,000 = \frac{\Delta I}{0.2}$

$\Delta I = 400$ crore.

(Answer based on $\Delta Y = K \times \Delta I$ is also correct)

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

$K = \frac{1}{1-MPC}$ ...(i)

$K = \frac{\Delta Y}{\Delta I}$ ...(ii)

Equating (i) and (ii),

$\frac{\Delta Y}{\Delta I} \quad \frac{1}{1-MPC}$

$\frac{2000}{\Delta I} \quad \frac{1}{1-0.8}$

$\Delta I = ₹ 400$ crore **3**

A **Q. 9.** In an economy, an increase in Investment by ₹ 100 crore led to 'increase' in National Income by ₹ 1,000 crore. Find Marginal Propensity to Consume. **[Delhi Set-III 2016]**

Ans. $\Delta Y = \Delta I \frac{1}{1-MPC}$

$2000 = 100 \frac{1}{1-MPC}$

OR

$1,000 - 1,000\ MPC = 100$

$MPC = \frac{900}{1,000} = 0.9$

(Any other relevant formula)

[CBSE Marking Scheme, 2016] 3

Detailed Answer :

$\Delta I = 100$ crore

$\Delta Y = 1,000$ crore

$K = \frac{\Delta Y}{\Delta I} = \frac{1,000}{100} = 10$

$\frac{1}{MPS} = 10$

MPS = 0.1

MPC = 1 – MPS = 1 – 0.1 = 0.9 **3**

A Q. 10. In an economy 20 percent of increased income is saved. How much will be the increase in income if investment increases by 10,000 ? Calculate. **[OD Set-II Comptt. 2015]**

Ans. $MPS = \frac{20}{100}$

$K = \frac{1}{MPS} = \frac{1}{\frac{1}{5}} = 5$

$\Delta Y = K.\ \Delta I$

$= 5 \times 10,000 = 50,000$

[CBSE Marking Scheme, 2015] 3

A Q. 11. In an economy, investment increases from 300 to 500. As a result of this equilibrium level of Income increases by 2,000. Calculate the marginal propensity to consume.

[OD Set-I Comptt. 2015]

Ans. $\Delta I = 500 - 300 = 200$

$K = \frac{\Delta Y}{\Delta I} = \frac{2,000}{200} = 10$ **1**

$K \quad \frac{1}{MPS}$ **1**

$10 \quad \frac{1}{MPS}$

So $MPS \quad \frac{1}{10}$

hence $MPC = 1 - MPS = \frac{}{10} = 0.9$ **1**

(Any other alternate source)
[CBSE Marking Scheme, 2015]

A Q. 12. In an economy, a 20 percent increase in investment results in a 100 percent increase in income. Calculate marginal propensity to consume. **[Delhi Set-I Comptt. 2012]**

Ans. $K = \left(\frac{\Delta Y}{\Delta I}\right)$

$K = \frac{100}{20} = 5$

We know, $K = \frac{}{1 - MPC}$

or $5 = \frac{1}{1 - MPC}$

or $5 - 5\ MPC = 1$

or $5 - 1 = 5\ MPC$

or $MPC = \frac{4}{5} = 0.8$ **3**

A Q. 13. In an economy, income increases from ₹ 5,000 crore to ₹ 6,000 crore as a result of 20 percent increase in investment.Calculate the value of investment multiplier. **[OD Comptt. 2012]**

Ans. $\Delta I = 20\%$

$\Delta Y = 1,000$ or 20%

$K = \frac{\Delta Y}{\Delta I}$

$K = \frac{20\%}{20\%} = 1$ **3**

Short Answer Type Questions–II

4 marks each

A Q. 1. Marginal Propensity to Consume is zero. Calculate the change in income if investment falls by ₹ 1,000 crores. **[OD Set-II Comptt. 2012]**

Ans. $MPC = 0$

$K = \frac{1}{1 - MPC}$

$\frac{1}{1-0} \quad \frac{1}{1}$

or $K = 1$

and $K = \frac{\Delta Y}{\Delta I}$

$1 = \frac{\Delta Y}{1000}$ or $\Delta Y = 1\ 000$

Therefore, change in income is ₹ 1,000 crore. **4**

A Q. 2. Find the value of multipliers given (i) Marginal Propensity to Consume = 1 and (ii) Marginal Propensity to Save = 1.

[OD Set-II Comptt. 2012]

Ans. (i) Here, $MPC = 1$

Hence, Multiplier (K) $= \frac{1}{1 - MPC} = \frac{1}{1-1} = \infty$

So, Multiplier = ∞ (infinity) **2**

(ii) Here, $MPS = 1$

Now, $K = \frac{1}{MPS} \quad \frac{1}{1}$

Hence, Multiplier (K) = 1 **2**

A Q. 3. As a result of increase in investment by ₹ 60 crore. National Income rises by ₹ 240 crore. Calculate Marginal Propensity to Consume.

[OD Set-III 2011]

Ans. Here, ΔI = ₹ 60 crore, ΔY = ₹ 240 crore

Hence, Multiplier (K) $= \frac{\Delta Y}{\Delta I} = \frac{240}{60} = 4$

Now, $K = \frac{1}{1 - MPC}$

or $4 = \frac{1}{1 - MPC}$

or $4 - 4\ MPC = 1$

or $4\ MPC = 4 - 1$

or $MPC = \frac{3}{}$

$= 0.75$ **4**

Long Answer Type Questions

6 marks each

U **Q. 1.** Explain the working of the Investment Multiplier with the help of a Numerical example. **[Foreign Set-I, II, III 2013]**

Ans. Investment Multiplier refers to increase in national income as a multiple of a given increase in Investment. Its value is determined by MPC. The value equals :

$$\text{Multiplier} = \frac{1}{1-\text{MPC}} \text{ or } \frac{1}{\text{MPS}} \quad \textbf{2}$$

Suppose increase in investment is ₹ 1000 and MPC = 0.8. The increase in National Income is in the following sequence.

(i) Increase in investment raises income of those who supply investment goods by ₹ 1000. This is the first round increase.

(ii) Since MPC = 0.8, the income earners spend ₹ 800 on consumption. This raises the income of the suppliers of consumption goods by ₹ 800. This is second round increase.

(iii) In the similar way, the third round increase in ₹ 640 = 800 × 0.8. In this way national income goes on increasing round after round.

(iv) The total increase in income is ₹ 5,000 which equals.

$$\Delta Y = \Delta I \times \frac{1}{1-\text{MPC}}$$

$$\Delta Y = 1{,}000 \times \frac{1}{1-0.8} = ₹\,5{,}000 \quad \textbf{4}$$

[CBSE Marking Scheme, 2013]

R **Q. 2.** What is the range of values of investment multiplier ? Clarify the relation of investment multiplier with marginal propensity to consume (MPC) and with marginal propensity to save (MPS). **[SQP 2016]**

Ans. Range of Investment Multiplier = one to infinity.

Relation : If MPC rises, investment multiplier also rises, positive relation, whereas if MPS rises, investment multiplier falls; inverse relation. (Relation to be supported by numerical examples or explanation)

[CBSE Marking Scheme, 2016] 6

Detailed Answer :

Value of Investment Multiplier :

(a) Minimum value of multiplier is 1 because minimum value of MPC can be zero.

(b) Maximum value of multiplier may be–(infinite) because maximum value of MPC can be 1.

Relationship of K(investment multiplier) with MPC and MPS

(i) There is direct relationship between k and MPC. If MPC is high, k will also be high but if MPC is low, k will also be low.

Thus, k varies directly with value of MPC. In short, higher the value of MPC, higher will be the value of multiplier and *vice versa*.

(ii) There is inverse relationship between k and MPS. If MPS is high, k will be low but if MPS is low, k will be high. **6**

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