UNIT 4

Consumption and Investment Functions

INTRODUCTION

CONSUMPTION FUNCTION

The consumption function or propensity to consume refers to income consumption relationship. It is a "functional relationship between two aggregates viz., total consumption and gross national income." Symbolically, the relationship is represented as C= f (Y).

PROPENSITY TO CONSUME AND PROPENSITY TO SAVE.

❖ The relationship between consumption and income is called propensity to consume or consumption function.

❖ C=F(Y).

❖ Consumption function may be represented by an equation.

❖ C=a+b(Y)

❖ C=consumption, a =consumption at zero level of income=MPC (slope of the consumption curve) Y=income.

❖ The consumption equation shows the level of consumption for various level of income.

❖ Propensity to consume is of two types

❖ Average propensity to consume (APC)

❖ Marginal propensity to consume (MPC).

❖ APC= ratio of total consumption to total income.

❖ APC=C/Y.

❖ MPC=ΔC/ΔY.

❖ Propensity to save indicates the tendency of the households to save at a given level of income. It shows the relation between saving and income.

❖ Propensity to save is also of two types.

❖ Average propensity to save (APC)

❖ Marginal propensity to save.(MPC)

THE RELATIONSHIP BETWEEN APC AND MPC

❖ APC means the ratio of total consumption to total income i.e. $APC = \dfrac{c}{y}$ and MPC is the ratio of change in consumption to change in income i.e. $MPC = \dfrac{\Delta c}{\Delta y}$.

❖ If consumption functions be liner with positive expenditure at 0 income level. Its equation is C = a + by and APC is falling while MPC is constant. And APC is always greater than MPC.

PROPENSITIES AND MULTIPLIER

❖ Average propensity to save is the ratio of saving to income	❖ APC=S/Y.
❖ Marginal propensity to save is the ratio of change in saving to change in income	❖ MPS=ΔS/ΔY.
❖ There is relationship between APC and APS.	❖ APC+APS=1
❖ APC=1-APS.	❖ There is relationship between MPC and MPS.
❖ MPC+MPS=1	❖ 1-MPC=MPS.
❖ Multiplier K K=ΔY/ΔC or K=1/MPS or K=I/I-MPC	

INVESTMENT FUNCTION:

Investment function refers to inducement to invest or investment demand. Classical economist considered investment demand simply as a decreasing function of interest rate. Hence,

> where I = induced investment, r = rate of interest

MEANING OF MARGINAL EFFICIENCY OF CAPITAL

(MEC) is the rate of discount which makes the discounted present value of expected income stream equal to the cost of capital.

MEANING OF MARGINAL EFFICIENCY OF INVESTMENT

(MEI) is the expected rate of return on investment as additional units of investment are made under specified conditions and over a period of time.

THE MULTIPLIER EFFECT

❖ A. Changesin spending ripple through the economy to generate event larger changes in real GDP. This is called the multiplier effect.

❖ Multiplier = change in real GDP / initial change in spending.

❖ Alternatively, it can be rearranged to read: Change in real GDP = initial change in spending x multiplier.

THREE POINTS TO REMEMBER ABOUT THE MULTIPLIER:

❖ The initial change in spending is usually associated with investment because it is so volatile, but changes in consumption (unrelated to income), net exports, and government purchases also are subject to the multiplier effect.

- ❖ The initial change refers to an upward shift or downward shift in the aggregate expenditures schedule due to a change in one of its components, like investment.
- ❖ The multiplier works in both directions (up or down).

THE MULTIPLIER IS BASED ON TWO FACTS.

- ❖ Any change in income will cause both consumption and saving to vary in the same direction as the initial change in income, and by a fraction of that change.
- ❖ The fraction of the change in income that is spent is called the marginal propensity to consume (MPC).
- ❖ The fraction of the change in income that is saved is called the marginal propensity to save (MPS).
- ❖ The size of the MPC and the multiplier are directly related; the size of the MPS and the multiplier are inversely related.

> **In equation form Multiplier = 1 / MPS or 1 / (1-MPC).**

THE PRINCIPLE OF ACCELERATOR

The principle of acceleration is based on the fact that the demand for capital goods is derived from the demand for consumer goods. In other words, acceleration is the ratio between induced investment and initial change in consumption. Symbolically

$$\beta = \frac{\Delta I}{\Delta C}$$

When, β = acceleration

$\quad$ = change in induced investment

$\quad$ = change in consumption

Hicks has broadly explained the concept of acceleration as the ratio of induced investment to change in income or output.

CONCEPT OF SUPER MULTIPLIER

The concept of super multiplier was developed by J. R Hicks. Super multiplier refers interaction between acceleration and multiplier. It shows the effect on equilibrium income, output and employment.

Y= C + IA + IP

Y = Aggregate income.

C = Consumption expenditure

IA= autonomous investment

IP= induced private investment

Hicks has combined the k and β mathematically and given it the name of the Super Multiplier.

Unit 4: Consumption and Investment Functions

BOOK EXERCISE QUESTIONS - MULTIPLE CHOICE QUESTIONS

PART - A

1. The average propensity to consume is measured by

   a) C/Y   b) CxY   c) Y/C   d) C+Y

2. An increase in the marginal propensity to consume will:

   a) Lead to consumption function becoming steeper

   b) Shift the consumption function upwards

   c) Shift the consumption function downwards

   d) Shift savings function upwards

3. If the Keynesian consumption function is C=10+0.8 Y then, if disposable income is Rs 1000, what is amount of total consumption?

   a) Rs. 0.8   b) Rs. 800 c) Rs. 810 d) Rs. 0.81

4. If the Keynesian consumption function is C=10+0.8Y then, when disposable income is Rs 100, what is the marginal propensity to consume?

   a) Rs. 0.8   b) Rs. 800 c) Rs. 810 d) Rs. 0.81

5. If the Keynesian consumption function is C=10+0.8 Y then, and disposable income is Rs.100, what is the average propensity to consume?

   a) Rs. 0.8   b) Rs. 800 c) Rs. 810 d) Rs.0.9

6. As national income increases

   a) The APC falls and gets nearer in value to the MPC.

   b) The APC increases and diverges in value from the MPC.

   c) The APC stays constant

   d) The APC always approaches infinity.

7. As increase in consumption at any given level of income is likely to lead

   a) Higher aggregate demand

   b) An increase in exports

   c) A fall in taxation revenue

   d) A decrease in import spending

8. Lower interest rates are likely to :

   a) Decrease in consumption

   b) increase cost of borrowing

   c) Encourage saving

   d) increase borrowing and spending

9. The MPC is equal to :

   a) Total spending / total consumption

   b) Total consumption/total income

   c) Change in consumption /change in income

   d) none of the above.

10. The relationship between total spending on consumption and the total income is the _____

    a) Consumption function

    b) Savings function

    c) Investment function

    d) aggregate demand function

11.11. The sum of the MPC and MPS is _____

    a)1   b) 2   c) 0.1   d) 1.1

12.12. As income increases, consumption will _____

    a)fall   b) not change

    c) fluctuate   d) increase

Unit 4: Consumption and Investment Functions

13. When investment is assumed autonomous the slope of the AD schedule is determined by the _____

a) marginal propensity to invest

b) disposable income

c) marginal propensity to consume

d) average propensity to consume

14. The multiplier tells us how much _____ changes after a shift in

a) Consumption , income

b) investment, output

c) savings, investment

d) output, aggregate demand

15. The multiplier is calculated as

a) 1/(1-MPC)   b) 1/MPS

c) 1/MPC   d) a and b

16. It the MPC is 0.5, the multiplier is _____

a) 2   b)1/2   c) 0.2   d) 20

17. In an open economy import _____ the value of the multiplier

a) Reduces   b) increase

c) does not change   d) changes

18. According to Keynes, investment is a function of the MEC and _____

a) Demand   b) Supply

c) Income   d) Rate of interest

19. The term super multiplier was first used by

a) J.R.Hicks   b) R.G.D. Allen

c) Kahn   d) Keynes

20. The term MEC was introduced by

a) Adam Smith   b) J.M. Keynes

c) Ricardo   d) Malthus

Answers									
1	2	3	4	5	6	7	8	9	10
a	a	c	a	d	a	a	d	c	a
11	12	13	14	15	16	17	18	19	20
a	d	c	d	d	a	a	d	a	b

PART - B

Answer the following questions in one or two sentences

21. What is consumption function?

❖ The consumption function or propensity to consume refers to income consumption relationship.

❖ It is a "functional relationship between two aggregates viz., total consumption and gross national income."

❖ Symbolically, the relationship is represented as

$$C = f(Y)$$

Where, C = Consumption Y = Income f = Function

22. What do you mean by propensity to consume?

❖ Propensity to consume refers to income consumption relationship.

❖ It is a "functional relationship between two aggregates viz., total consumption and gross national income."

23. Define average propensity to consume (APC).

The average propensity to consume is the ratio of consumption expenditure to any particular level of income." Algebraically it may be expressed as under:

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

Where,

C = Consumption   Y = Income

24. Define marginal propensity to consume (MPC).

    The marginal propensity to consume may be defined as the ratio of the change in the consumption to the change in income. Algebraically it may be expressed as under:

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

Where,

ΔC = Change in Consumption

ΔY = Change in Income

MPC is positive but less than unity

25. What do you mean by propensity to save?

❖ The propensity to save refers to income savings relationship.

❖ Saving function is a "functional relationship between two aggregates viz., total savings and gross national income."

    Symbolically, the relationship is represented as

$$S = f\ (Y)$$

Where, S = Savings Y = Income f = Function

26. Define average propensity to save (APS).

❖ The average propensity to save is the ratio of saving to income.

❖ APS is the quotient obtained by dividing the total saving by the total income. In other words, it is the ratio of total savings to total income.

    It can be expressed algebraically in the form of equation as under

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

Where,

S = Saving

Y = Income

27. Define Marginal Propensity to Save (MPS).

❖ Marginal Propensity to Save is the ratio of change in saving to a change in income.

❖ MPS is obtained by dividing change in savings by change in income.

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

ΔS – Change in Saving

ΔY – Change in Income

Since MPC + MPS -1

MPS = MPC and MPC =1 – MPS

    Generally the average ie APC is expressed in percentage and the MPC in fraction.

28. Define Multiplier.

❖ The multiplier is defined as the ratio of the change in national income to change in investment.

❖ If ΔI stands for increase in investment and ΔY stands for resultant increase in income, the multiplier $K = \Delta Y/\Delta I$.

❖ Since ΔY results from ΔI, the multiplier is called investment multiplier.

29. Define Accelerator.

    Accelerator is the numerical value of the relation between an increase in consumption and the resulting increase in investment.

$$Accelerator\ (\beta) = \frac{\Delta I}{\Delta C}$$

ΔI = Change in investment outlays (Say 100)

ΔC = Change in consumption demand (Say 50)

    The accelerator expresses the ratio
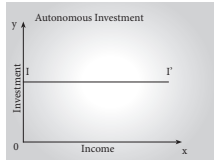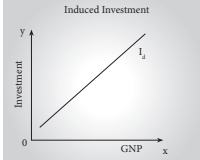
of the net change in investment to change in consumption.

PART - C

Answer the following questions in one Paragraph.

30. State the propositions of Keynes's Psychological Law of Consumption

(1) When income increases, consumption expenditure also increases but by a smaller amount. The reason is that as income increases, our wants are satisfied side by side, so that the need to spend more on consumer goods diminishes. So, the consumption expenditure

(2) The increased income will be divided in some proportion between consumption expenditure and saving. This follows from the first proposition because when the whole of increased income is not spent on consumption, the remaining is saved.

(3) Increase in income always leads to an increase in both consumption and saving. This means that increased income is unlikely to lead to fall in either consumption or saving. Thus with increased income both.

31. Differentiate autonomous and induced investment.

Basics	Autonomous Investment	Induced Investment
Meaning	Independent	Planned
Elasticity	Income inelastic	Income elastic
Motive	Welfare motive	Profit Motive
Diagram		

32. Explain any three subjective and objective factors influencing the consumption function.

A) Subjective Factors

Subjective factors are the internal factors related to psychological feelings. Major subjective factors influencing.

1. The motive of precaution: To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness

2. The motive of foresight: The desire to provide for anticipated future needs. Eg. Old age

3. The motive of calculation: The desire to enjoy interest and appreciation.

4. The motive of improvement: The desire to enjoy for improving standard of living.

5. The motive of financial independence.

6. The motive of enterprise (desire to do forward trading).

7. The motive of pride.(desire to bequeath a fortune)

8. The motive of avarice.(purely miserly instinct)

B) Objective Factors

Objective factors are the external factors which are real and measurable.

1) Income Distribution

If there is large disparity between rich and poor, the consumption is low because the rich people have low propensity to consume and high propensity to save.

2) Price level

Price level plays an important role in determining the consumption function. When the price falls, real income goes up; people will consume more and propensity to save of the society increases.

3) Wage level

Wage level plays an important role in determining the consumption function and there is positive relationship between wage and consumption.

4) Interest rate

Rate of interest plays an important role in determining the consumption function.

5) Fiscal Policy

When government reduces the tax the disposable income rises and the propensity to consume of community increases.

6) Consumer credit

The availability of consumer credit at easy installments will encourage households to buy consumer durables like automobiles, fridge, computer. This pushes up consumption.

7) Demographic factors

Ceteris paribus, the larger the size of the family, the grater is the consumption. Besides size of family, stage in family life cycle, place of residence and occupation affect the consumption function.

8) Duesenberry hypothesis

Duesenberry has made two observations regarding the factors affecting consumption.

a) The consumption expenditure depends not only on his current income but also past income and standard of living.

b) Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups.

9) Windfall Gains or losses

Unexpected changes in the stock market leading to gains or losses tend to shift the consumption function upward or downward.

33. Mention the differences between accelerator and multiplier effect

S. No	BASIS	ACCELERA-TOR	MULTI-PLIER
1	Meaning	The accelerator coefficient is the ratio between induced investment and an initial change in consumption	The multiplier is defined as the ratio of the change in national income to change in investment.
2	Effect	Change in consumption expenditure forms the effect	Change in Investment forms the effect
3	Formula	$\beta = \Delta I / \Delta C$	$K = \Delta Y / \Delta I$
4	Other Name	The accelerator coefficient	Investment multiplier
5	Vital Assumption	Absence of excess capacity in consumer goods industries.	There is no induced investment

34. State the concept of super multiplier.

Meaning of Super Multiplier

❖ In order to measure the total effect of initial investment on income, Hicks has combined the k and β mathematically and given it the name of the Super Multiplier.

Unit 4: Consumption and Investment Functions

❖ The super multiplier is worked out by combining both induced consumption and induced investment.

❖ The combined name of the super multiplier and the accelerator is also called the leverage effect.

Leverage Effect

The combined effect of the multiplier and the accelerator is also called the leverage effect which may lead the economy to very high or low level of income propagation.

Symbolically

$$Y = C + IA + IP$$

Y = Aggregate income.

C = Consumption expenditure

IA= autonomous investment

IP= induced private investment

The super – multiplier, tells us that if there is an initial increase in autonomous investment, income will increase by K times the autonomous investment.

35. Specify the limitations of the multiplier.

The multiplier assumes that those who earn income are likely to spend a proportion of their additional income on consumption. But in practice, people tend to spend their additional income on other items. Such expenses are known as leakages. These leakages are the limitations of the multiplier.

❖ Payment towards past debts.

❖ Purchase of existing wealth

❖ Import of goods and services

❖ Non availability of consumer goods

❖ Full employment situation

PART - D

Answer the following questions in about a page.

36. Explain Keynes psychological law of consumption function with diagram.

Introduction

Keynes propounded the fundamental Psychological Law of Consumption which forms the basis of the consumption function.

Meaning of Psychological law of consumption

The law implies that there is a tendency on the part of the people to spend on consumption less than the full increment of income.

Assumptions:

1. The other variables such as income distribution, tastes, habits, social customs, price movements, population growth, etc. do not.

2. **Existence of Normal Conditions:** The law holds good under normal conditions. People may spend the whole of increased income on consumption.

3. **Existence of a Laissez-faire Capitalist Economy:** The law operates in a rich capitalist economy where there is no government intervention.

Propositions of the Law:

(1) When income increases, consumption expenditure also increases but by a smaller amount.

(2) The increased income will be divided in some proportion between consumption expenditure and saving.

(3) Increase in income always leads to an increase in both consumption and saving.

Unit 4: Consumption and Investment Functions

The three propositions of the law

Income Y	Consumption C	Savings S = Y = C
120	120	0
180	170	10
240	220	20

Diagrammatically, the three propositions are explained in the following figure
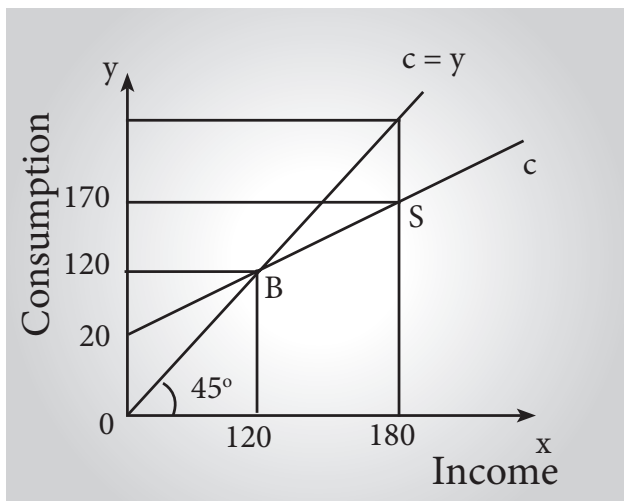
Explanations

Proposition (1):

When income increases from 120 to 180 consumption also increases from 120 to 170 but the increase in consumption is less than the increase in income, 10 is saved.

Proposition (2):

When income increases to 180 and 240, it is divided in some proportion between consumption by 170 and 220 and saving by 10 and 20 respectively.

Proposition (3):

Increases in income to 180 and 240 lead to increased consumption 170 and 220 and increased saving 20 and 10 than before.

37. Briefly explain the subjective and objective factors of consumption function?

J.M Keynes has divided factors influencing the consumption function into two.

A) Subjective Factors

Subjective factors are the internal factors related to psychological feelings. Major subjective factors influencing.

1. The motive of precaution: To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness

2. The motive of foresight: The desire to provide for anticipated future needs. Eg. Old age

3. The motive of calculation: The desire to enjoy interest and appreciation.

4. The motive of improvement: The desire to enjoy for improving standard of living.

5. The motive of financial independence.

6. The motive of enterprise (desire to do forward trading).

7. The motive of pride.(desire to bequeath a fortune)

8. The motive of avarice.(purely miserly instinct)

The Government, institutions and business corporations and firms may also consume mainly because of the following four motives:

1. The motive of enterprise

2. The motive of liquidity

3. The motive of improvement

4. The motive of financial prudence

B) Objective Factors

Objective factors are the external factors which are real and measurable.

1) Income Distribution

If there is large disparity between rich and poor, the consumption is low because the rich people have low propensity to consume and high propensity to save.

2) Price level

Price level plays an important role in determining the consumption function. When the price falls, real income goes up; people will consume more and propensity to save of the society increases.

3) Wage level

Wage level plays an important role in determining the consumption function and there is positive relationship between wage and consumption.

4) Interest rate

Rate of interest plays an important role in determining the consumption function.

5) Fiscal Policy

When government reduces the tax the disposable income rises and the propensity to consume of community increases.

6) Consumer credit

The availability of consumer credit at easy installments will encourage households to buy consumer durables like automobiles, fridge, computer. This pushes up consumption.

7) Demographic factors

Ceteris paribus, the larger the size of the family, the grater is the consumption. Besides size of family, stage in family life cycle, place of residence and occupation affect the consumption function.

8) Duesenberry hypothesis

Duesenberry has made two observations regarding the factors affecting consumption.

a)   The consumption expenditure depends not only on his current income but also past income and standard of living.

b)   Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups.

9) Windfall Gains or losses

Unexpected changes in the stock market leading to gains or losses tend to shift the consumption function upward or downward. namely: Subjective factors and Objective factors

38. Illustrate the working of Multiplier

Definition of Multiplier

❖ The multiplier is defined as the ratio of the change in national income to change in investment.

❖ If ΔI stands for increase in investment and ΔY stands for resultant increase in income, the multiplier $K = \Delta Y / \Delta I$.

❖ Since ΔY results from ΔI, the multiplier is called investment multiplier.

The value of multiplier depends on MPC

Multiplier $K = 1/1\text{-MPC}$

❖ The multiplier is the reciprocal of one minus marginal propensity to consume. Since marginal propensity to save is 1 - MPC. (MPC+MPS =1).

❖ Multiplier is 1/ MPS. The multiplier is therefore defined as reciprocal of MPS. Multiplier is inversely related to MPS and directly with MPC.

Working of Multiplier – Illustration

❖ Suppose the Government undertakes investment expenditure equal to Rs.100

crore on some public works, by way of wages, price of materials etc.

❖ Thus income of labourers and suppliers of materials increases by Rs.100 crore. Suppose the MPC is 0.8 that is 80 %.A sum of Rs.80 crores is spent on consumption (A sum of Rs.20 Crores is saved).

❖ As a result, suppliers of goods get an income of Rs.80 crores. They inturn spend Rs.64 crores (80% of Rs.80 cr).

❖ In this manner consumption expenditure and in crease in income act in a chain like manner.

The final result isΔY

$$= 100+100\times4/5+100 \times[4/5]2+100\times[4/5]3 \text{or,}$$

$\Delta Y = 100+100\times0.8+100\times (0.8)2 + 100 \times(0.8)3$

$= 100 + 80 + 64 + 51.2...$

$= 500$

that is $100\times1/1\text{-}4/5$

$100\times1/1/5$

$100\times5 = $ Rs.500 crores

For instance if $C = 100 + 0.8Y$, $I = 100$,

Then $Y = 100 + 0.8Y + 100$

$0.2Y = 200$

$Y = 200/0.2 = 1000 \rightarrow$ Point B

If I is increased to 110, then

$0.2Y = 210$

$Y = 210/0.2 = 1050 \rightarrow$ Point D

For Rs.10 increase in I, Y has increased by Rs.50.

This is due to multiplier effect.

At point A, $Y = C = 500$

$C = 100 + 0.8 (500) = 500$; $S=0$

At point B, $Y = 1000$

$C = 100 + 0.8 (1000) = 900$; $S = 100 = I$

At point D, $Y = 1050$

$C = 100 + 0.8 (1050) = 940$; $S = 110 = I$

When I is increased by 10, Y increases by 50.

This is multiplier effect (K = 5)

$K = 1 / 0.2 = 5$

39. Explain the operation of the Accelerator.

Meaning of Accelerator

$$\text{Accelerator } (\beta) = \frac{\Delta I}{\Delta C}$$

$\Delta I = $ Change in investment outlays (say 100)

$\Delta C = $ Change in consumption demand (Say 50)

The accelerator expresses the ratio of the net change in investment to change in consumption.

Operation of the Acceleration Principle

i. Let us consider a simple example. The operation of the accelerator may be illustrated as follows.

ii. Let us suppose that in order to produce 1000 consumer goods, 100 machines are required. Also suppose that working life of a machine is 10 years.

iii. This means that every year 10 machines have to be replaced in order to maintain the constant flow of 1000 consumer goods. This might be called replacement demand.

iv. Suppose that demand for consumer

goods rises by 10 percent (ie from 1000 to 1100). This results in increase in demand for 10 more machines.

v.   So that total demand for machines is 20. (10 for replacement and 10 for meeting increased demand). It may be noted here a 10 percent increase in demand for consumer goods causes a 100 percent increase in demand for machines (from 10 to 20).

vi. So we can conclude even a mild change in demand for consumer oods will lead to wide change in investment.

Diagrammatic illustration:

Operation of Accelerator.
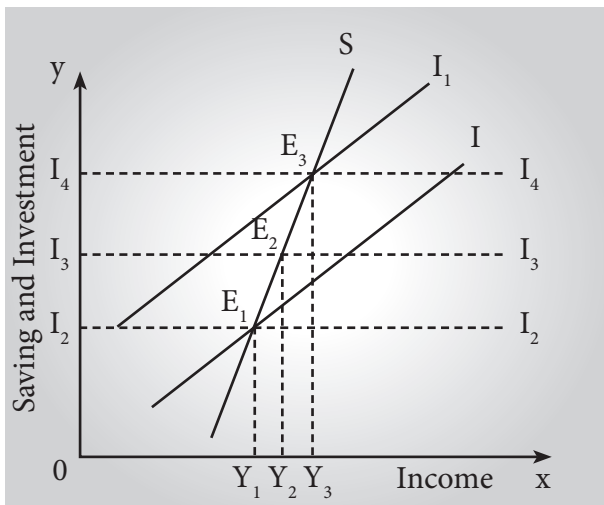
❖ SS is the saving curve. II is the investment curve. At point E1, the economy is in equilibrium with OY1 income. Saving and investment are equal at OI2.

❖ Now, investment is increased from OI2 to OI4. This increases income from OY1 to OY3, the equilibrium point being E3. If the increase in investment by I2 I4 is purely exogenous, then the increase in income by Y1 Y3 would have been due to the multiplier effect.

❖ But in this diagram it is assumed that exogenous investment is only by I2 I3 and induced investment is by I3 I4.

❖ Therefore, increase in income by Y1 Y2 is due to the multiplier effect and the increase in income by Y2 Y3 is due to the accelerator effect. MPC is positive but less than unity.

40. **What are the differences between MEC and MEI.**

❖ Meaning of Marginal Efficiency of Capital (MEC) is the rate of discount which makes the discounted present value of expected income stream equal to the cost of capital.

❖ Meaning of Marginal Efficiency of Investment is the expected rate of return on investment as additional units of investment are made under specified conditions and over a period of time.

Marginal Efficiency of Capital (MEC)	Marginal Efficiency of Investment (MEI)
1. It is based on a given supply price for capital.	1. It is based on the induced change in the price due to change in the demand for capital.
2. It represents the rate of return on all successive units of capital without regard to existing capital.	2. It shows the rate of return on just those units of capital over and above the existing capital stock.
3. The capital stock is taken on the X axis of diagram.	The amount of investment is taken on the X-axis of diagram.
4. It is a "Stock" concept.	4. It is a "flow" concept.
5. It determines the optimum capital stock in an economy at each level of interest rate.	5. It determines the net investment of the economy at each interest rate given the capital stock.

Additional One marks

1. **What is the primary macroeconomic objective?**
   a. acceleration of growth of national income
   b. acceleration of growth of state income
   c. acceleration of growth of private income
   d. acceleration of growth of internationl income

2. **The value of multiplier itself depends on ……………………or marginal propensity to consume.**
   a. savings function
   b. investment function
   c. consumption function
   d. interest function

3. **The ratio of consumption expenditure to any particular level of income is called as..?**
   a. The average propensity to consume
   b. The average propensity to saving
   c. The average propensity to investment
   d. The marginal propensity to consume

4. **The ratio of the change in the consumption to the change in income is called…?**
   a. The average propensity to consume
   b. The marginal propensity to consume
   c. The marginal propensity to save
   d. none of the above

5. **When MPC+MPS=1, which one of the following is wrong?**
   a. MPS = MPC
   b. MPC+MPC >1
   c. MPS=1-MPC
   d. MPC = 1-MPS

6. **The average APC is expressed in …………….and the MPC in…………. ?**
   a. percentage and ratio
   b. ratio and fraction
   c. percentage and fraction
   d. none of the above

7. **What is not the nature of other variables such as income distribution, tastes, habits, social customs, price movements, population growth, etc. in the context of consumption function?**
   a. other things being constant
   b. ceteris paribus
   c. constant extraneous variables
   d. dynamic variables postulate

8. **What is not a proposition of the Law:**
   a. When income increases, consumption expenditure also increases but by a smaller amount.
   b. The increased income will be divided in some proportion between consumption expenditure and saving.
   c. Excess capacity in capital goods industries is assumed
   d. Increase in income always leads to an increase in both consumption and saving.

9. **Assertion** (A)When income increases, consumption expenditure also increases but by a smaller amount.

   Reason (R) As income increases, our wants are satisfied side by side, so that the need to spend more on consumer goods diminishes.
   a. Both (A) and (R) are true and (R) is the correct explanation of (A).
   b. Both (A) and (R) are true, but (R) is not the correct explanation of (A).
   c. (A) is true, but (R) is false.
   d. (A) is false, but (R) is true.

Unit 4: Consumption and Investment Functions

10. Find the missing value.

Income Y	Consumption C	Savings S = Y =C
120	120	0
180	170	10
240	?	20

   a. 220   b. 290   c. 0   d. 20

11. Find the odd on out with context of subjective factor of consumption function

   a. The motive of precaution

   b. The motive of foresight

   c. The motive of calculation

   d. The Average Propensity to Save

12. Find the odd on out with context of objective factor of Consumption function

   a. Price level   b. Wage level

   c. The motive of pride d. Interest rate

13. Who is the proponent of the following statement? "The community with more equal distribution of income tends to have high propensity to consume."

   a. Keynes   b. V.K.R.V. Rao

   c. Hicks   d. Say

14. Who is the proponent of the following statement? "Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups"

   a. J.R. Hicks   b. J. B. Say

   c. Duesenberry   d. J.M. Keynes

15. Find what is associated with the following: Construction of road, bridges, School, Charitable houses.

   a. Induced Investment

   b. Private Investment

   c. Autonomous Investment

   d. None

16. What is the nature of the relationship between the national income and induced investment?

   a. positive   b. negative

   c. zero   d. infinite

17. Which is not a Determinants of Investment Function

   a. Rate of interest

   b. Level of uncertainty

   c. Political environment

   d. Taste and preferences

18. Contended that business expectations and profits are more important in deciding investment?

   a. Hicks   b. Keynes

   c. Keats   d. Joan

19. What is relevant in the context of MEC?

   I. The prospective yield from a capital asset.

   II. The supply price of a capital asset.

   a. I only relevant

   b. II only relevant

   c. Both I and II are relevant

   d. Both are irrelevant

20. Who was first developed the concept of multiplier?

   a. J.A.Schumpeter   b. J.M.Keynes

   c. R.F. Khan   d. Learner

21. 21. Which one of the following factor that is not taken into consideration while making any investment decision

   a. The cost of the capital asset

b.　The expected rate of return from during its lifetime

c.　The Marginal propensity to save

d.　The market rate of interest

22.　**22. Find the value of K, if MPC is 0.75, MPS is 0.25.**

　a. 8　　　b. 4　　　　c. 1　　　d. 2

23.　**………………………..is otherwise known as simultaneous multiplier, timeless multiplier, and logical multiplier**

　a. Dynamic multiplier

　b. Super multiplier

　c. Static multiplier

　d. Government multiplier

24.　**……………………… is also known as 'sequence multiplier'. In real life, income level does not increase instantly with investment**

　a. Dynamic multiplier

　b. Super multiplier

　c. Static multiplier

　d. Government multiplier

25.　**Which of the following is not a kind of multiplier?**

　a. Tax multiplier

　b. Employment multiplier

　c. Foreign Trade multiplier

　d. Technical Multiplier

26.　**Which of the following economist is not associated with accelerator**

　a. Aftalion　　　　b. Hawtrey

　c. Ricardo　　　　d. Bickerdike

27.　**The systematic development of the simple accelerator model was made by…………?**

　a. J.M.Clark　　　b.J.M.Keynes

　c. R.F. Khan　　　d. Learner

28.　**28. Arrange the order of accelerator effects**

Increase in consumer demand

Films get close to fill capacity

Films invest to meet rising demand

　a. I, II, III　　　　b. II, I, III

　c. III, II, I　　　　d. III,I,II

29.　**29. Which of the is not aAssumptions?**

　a.　Formulating Government policies

　b.　Absence of excess capacity in consumer goods industries.

　d.　Supply of funds and other inputs is quite elastic

30.　**30. If there is ……………. in the consumer goods industry, the accelerator principle would not work.**

　a. Full capacity

　b. unused or excess capacity

　c. No capacity

　d. None

31.　**The slope of the consumption function is called**

　a. MPC　　b. MPS　　c. APC　　d. APS

32.　**In a closed economy, the value of multiplier, when MPC is 0.90**

　a. 25　　　b. 90　　　c. 10　　　d. 9

33.　**Ratio of consumption expenditure to any particular level of income**

　a. MPS　　b. APS　　c. APC　　d. MPC

34.　**Psychological law of consumption states that the value of MPC is lies between zero and**

　a. 1　　　b. 2　　　c. 3　　　d. 4

35. **When MPS = 0.2, MPC will be**
    a. 0.8   b. 0.2   c. 1.2   d. 20

36. **In the linear consumption function C = a + bY, coefficient 'a' denotes**
    a. MPC
    b. APC
    c. Autonomous consumption
    d. Induced consumption

37. **When MPC = 0.5, the value of multiplier is**
    a. 5   b. 0.5   c. 2   d. 4

38. **Autonomous investment is**
    a. Income inelastic
    b. Instable
    c. Interest elastic
    d. Income elastic

39. **MEC for a capital good was found out to be 10% and the market rate of interest is 9%, then the investment is**
    a. Not profitable
    b. Profitable
    c. Breakeven
    d. Cannot say

40. **Value of MPC is**
    a. >1   b. <1   c. 0   d. $0 \leq MPC \geq 1$

41. **Schedule that expresses relationship between rate of interest and corresponding amount of investment**
    a. MEI
    b. MEC
    c. Effective Demand
    d. Aggregate Demand

42. **MEC is directly related to**
    a. Prospective yield   b. Supply price
    c. Rate of interest   d. All of the above

43. **According to Keynes the most important determinant of consumption**
    a. Rate of interest
    b. Saving
    c. Income
    d. Investment

44. **In the equation C = 60 + 0.6 Y, MPC is**
    a. 60   b. 0.6   c. 0   d.1

45. **Keynes assumed the presence of -------- economy for the fundamental law of consumption.**
    a. Capitalistic   b. Socialistic
    c. Planned   d. None of the above

46. **According to Keynes the most important determinant of investment**
    a. MEC
    b. Effective demand
    c. Aggregate demand
    d. Rate of interest

47. **In Keynesian terminology, investment means:**
    a. Financial investment
    b. Real investment
    c. Induced investment
    d. None of the above

48. **Rate of change in savings to change in income:**
    a. APS   b. APC   c. MPS   d. MPC

49. **Which of the following can cause shifts in consumption function:**
    a. Psychological attitude
    b. Social practices
    c. Business motives
    d. Changes in price level

Unit 4: Consumption and Investment Functions

50. **APC is determined by the following equation:**
    a. C/Y　　　　　b. S/Y
    c. $\Delta C/\Delta Y$　　　d. $\Delta S/\Delta Y$

51. **Which of the following is not correct:**
    a. MPC declines as income increases
    b. MPC is positive but less than one
    c. MPS is always positive
    d. All the above

52. **According to Keynes, saving is:**
    a. Private virtue but not social virtue
    b. Private and social virtue
    c. Is neither private virtue nor social virtue
    d. Is either social virtue or private virtue

53. **MEC is inversely related to:**
    a. Prospective yield
    b. Supply price
    c. Investment
    d. Rate of interest

54. **Keynes considered subjective and objective factors:**
    a. Important determinants of consumption
    b. Unimportant determinants of consumption
    c. Determinants of investment
    d. Determinants of business's willingness to pay

55. **The sum of marginal propensity to consume plus marginal propensity to save must equal to:**
    a. 0　　b. 1　　c. 100　　d. 1000

56. **Which of the following is correct?**
    a. 1+MPS = MPC
    b. 1- MPC = MPS
    c. MPC + MPS >1

d. MPC+ MPS<1

57. **As the value of MPC increases, the value of multiplier**
    a. Decreases　　b. Increases
    c. Constant　　d. Cannot say

58. **If MPC = 4/5, then value of the multiplier is:**
    a. 20　　　　b. 5
    c. 0.80　　　d. 1.25

59. **The marginal propensity to save is defined as:**
    a. $1-\Delta C/\Delta Y$　　b. S/Y
    c. Y/S　　　　d. Y/ΔS

60. **Which of the following is Keynesian saving function?**
    a. S = f(i)　　　b. S = f(P)
    c. S = f (Y)　　d. S = f (W)

61. **1- C/Y is defined as:**
    a. Average propensity to consume
    b. Marginal propensity co consume
    c. Average propensity to save
    d. Marginal propensity to save

62. **Assertion (A) :The multiplier is directly related to MPC and inversely related to MPS.:**
    Reason (B) : The accelerator principle explains the effect of changing consumption expenditure upon volume of investment.
    a. Both (A) and (R) are true and (R) is the correct explanation of (A).
    b. Both (A) and (R) are true, but (R) is not the correct explanation of (A).
    c. (A) is true, but (R) is false.
    d. (A) is false, but (R) is true.

63. **Match the items in the List – I with items in List – II. Select the correct answer from the code given below :**

Unit 4: Consumption and Investment Functions

List – I	List – II
I. Y	1. C + IA + IP
II. (β)	2. ΔI / ΔC
III. K	3. 1/1- MPC
IV. MPS	4. ΔS / ΔY

	I	II	III	IV
a.	3	2	1	4
b.	2	4	1	3
c.	2	4	1	3
d.	2	3	4	1

64. **Assertion (A) :** The multiplier refers to the change in national income resulting from change in investment.

    Reason (R) : The value of multiplier itself depends on consumption function or marginal propensity to consume.

    a. Both A and R are true and R is the correct explanation of A.

    b. Both A and R are true but R is not the correct explanation of A.

    c. A is true but R is false.

    d. A is false but R is true.

65. **Assertion (A) :** Consumption is an increasing function of income because consumption expenditure increases with increase in income.

    Reason (R) : When income is negative, people spend out of their past savings on consumption because they must eat in order to live.

    a. Both A and R are true and R is the correct explanation of A.

    b. Both A and R are true but R is not the correct explanation of A.

    c. A is true but R is false.

    d. A is false but R is true.

66. **Assertion (A) :J.B. Say propounded the fundamental Psychological Law of Consumption which forms the basis of** the consumption function.

    Reason (R) :The law implies that there is a tendency on the part of the people to spend on consumption less than the full increment of income.

    a. Both A and R are true and R is the correct explanation of A.

    b. Both A and R are true but R is not the correct explanation of A.

    c. A is true but R is false.

    d. A is false but R is true.

67. **Assertion (A) :Subjective factors are the internal factors related to psychological feelings.**

    Reason (R) :Major subjective factors influencing consumption function are MPC and MPS.

    a. Both A and R are true and R is the correct explanation of A.

    b. Both A and R are true but R is not the correct explanation of A.

    c. A is true but R is false.

    d. A is false but R is true.

68. **Assertion (A) :** The progressive tax system increases the propensity to consume of the people by altering the income distribution in favour of poor.

    Reason (R) : When government reduces the tax the disposable income rises and the propensity to consume of community increases.

    a. Both A and R are true and R is the correct explanation of A.

    b. Both A and R are true but R is not the correct explanation of A.

    c. A is true but R is false.

    d. A is false but R is true.

69. **Assertion (A) :** Consumption is influenced by demonstration effect.

Unit 4: Consumption and Investment Functions

The consumption standards of low income groups are influenced by the consumption standards of high income groups.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is not the correct explanation of A.

c. A is true but R is false.

d. A is false but R is true.

70. **Assertion (A) :** The marginal efficiency of capital is also affected by waves of optimism and pessimism in the business cycle.

Reason (R) : If businessmen are optimistic about future, the MEC will be likely to be high. During periods of pessimism the MEC is under estimated and so will be low.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is not the correct explanation of A.

c. A is true but R is false.

d. A is false but R is true.

71. **Assertion (A) :** Additional investment will lead to inflation only, rather than generation of additional real income during full employment.

Reason (R) : Under conditions of full employment, resources are almost already fully employed.

a. Both A and R are true and R is the correct explanation of A.

b. Both A and R are true but R is not the correct explanation of A.

c. A is true but R is false.

d. A is false but R is true.

72. **The marginal propensity to consume is:**

a. increasing if the marginal propensity to save is increasing.

b. the proportion of total disposable income that the average family consumes.

c. the change in consumer spending divided by the change in aggregate disposable income.

d. the change in consumer spending minus the change in aggregate disposable income.

73. **A high marginal propensity to consume implies which of the following?**

a. A small change in consumption when income changes

b. A high savings rate

c. A high marginal tax rate

d. A low marginal propensity to save

74. **The marginal propensity to consume (mpc):**

a. stands for the portion of every additional dollar of aggregate income that goes to consumption spending.

b. is equal to the change in consumption (C) divided by the change in aggregate income (Y).

c. is equal to 1 – mps.

d. all of the above.

75. **Assume a simple, closed economy with no government. The marginal propensity to consume (mpc) = 0.75. Then the value of the multiplier is:**

a. 1.34   b. 0.57   c. 4   d. 1.75

76. **Match the correct codes**

1	Consumption Function	i	f (Y)
2	The Marginal Propensity to Consume	ii	$\Delta C/ \Delta Y$

3	The Average Propensity to save	iii	S/ Y
4	The Marginal Propensity to Save	iv	ΔS / ΔY

Codes

  a. (1) – (i) (2) – (ii) (3) – (iv) (4) – (iii)

  b. (1) – (ii) (2) – (iii) (3) – (iv) (4) – (i)

  c. (1) – (iv) (2) – (iii) (3) – (i) (4) – (ii)

  d. (1) – (i) (2) – (ii) (3) – (iii) (4) – (iv)

77. Match the correct codes

1	The desire to obtain resources to carry out further capital investment without incurring debt.	i	The motive of enterprise
2	The desire to secure liquid resources to meet emergencies, and difficulties.	ii	The motive of liquidity
3	The desire to secure a rising income and to demonstrate successful management.	iii	The motive of improvement
4	The desire to ensure adequate financial provision against depreciation and obsolescence and to discharge debt.	iv	The motive of financial prudence

Codes

  a. (1) – (i) (2) – (ii) (3) – (iv) (4) – (iii)

  b. (1) – (ii) (2) – (iii) (3) – (iv) (4) – (i)

  c. (1) – (iv) (2) – (iii) (3) – (i) (4) – (ii)

  d. (1) – (i) (2) – (ii) (3) – (iii) (4) – (iv)

78. Match the correct codes

1	The average propensity to consume	i	The ratio of change in saving to a change in income.
2	The marginal propensity to consume.	ii	The ratio of saving to income
3	Marginal Propensity to Save	iii	Defined as the ratio of the change in the consumption to the change in income
4	The average propensity to save	iv	The ratio of consumption expenditure to any particular level of income

Codes

  a. (1) – (i) (2) – (ii) (3) – (iv) (4) – (iii)

  b. (1) – (ii) (2) – (iii) (3) – (iv) (4) – (i)

  c. (1) – (iv) (2) – (iii) (3) – (i) (4) – (ii)

  d. (1) – (i) (2) – (ii) (3) – (iii) (4) – (iv)

79. Match the correct codes

1	The motive of precaution	i	The desire to enjoy interest and appreciation
2	The motive of foresight	ii	The desire to enjoy for improving standard of living.
3	The motive of calculation	iii	The desire to provide for anticipated future needs. Eg. Old age
4	The motive of improvement	iv	To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness

Codes

a. (1) – (i) (2) – (ii) (3) – (iv) (4) – (iii)
b. (1) – (ii) (2) – (iii) (3) – (iv) (4) – (i)
c. (1) – (iv) (2) – (iii) (3) – (i) (4) – (ii)
d. (1) – (i) (2) – (ii) (3) – (iii) (4) – (iv)

80. Match the correct codes

1	The motive of enterprise	i	desire to do forward trading
2	The motive of pride	ii	desire to bequeath a fortune
3	The motive of avarice	iii	purely miserly instinct
4	The motive of financial independence	iv	Economic Freedom

Codes

a. (1) – (i) (2) – (ii) (3) – (iv) (4) – (iii)
b. (1) – (ii) (2) – (iii) (3) – (iv) (4) – (i)
c. (1) – (iv) (2) – (iii) (3) – (i) (4) – (ii)
d. (1) – (i) (2) – (ii) (3) – (iii) (4) – (iv)

Answers

1	2	3	4	5	6	7	8	9	10
a	c	a	b	b	c	d	c	a	a
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
d	d	b	c	c	a	d	b	c	c
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
c	b	c	a	d	c	a	a	a	b
31	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**
a	c	c	a	a	c	c	a	b	d
41	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**
a	a	c	b	a	a	b	c	d	a
51	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
c	a	a	b	b	b	b	b	a	c
61	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**
c	b	d	b	c	d	a	a	a	b
71	**72**	**73**	**74**	**75**	**76**	**77**	**78**	**79**	**80**
a	c	d	d	c	a	a	c	c	a

Additional Two Marks

1. Find the missing value in the given schedule of consumption function.

Question		
Income	Consumption	Savings
Y	C	S
0	20	-20
60	70	-10
120	120	?
180	170	10
240	?	20
300	270	?
360	320	?

Answer		
Income	Consumption	Savings
Y	C	S
0	20	-20
60	70	-10
120	120	*0*
180	170	10
240	*220*	20
300	270	*30*
360	320	*40*

2. Write the formulas of APC, MPC, APS and MPS

(i)   The Average Propensity to Consume = $\dfrac{c}{y}$

(ii) The Marginal Prosperity to Consume = $\dfrac{\triangle c}{\triangle y}$

(iii) The average Propensity to Save = $\dfrac{s}{y}$

(iv) The Marginal Propensity to Save = $\dfrac{s}{y}$

3. **What are Ceteris paribus (constant extraneous variables?**

The constant extraneous variables such as income distribution, tastes, habits, social customs, price movements, population growth, etc. do not change and

consumption depends on income alone.

4. When income increases, consumption expenditure also increases but by a smaller amount. Justify.

❖ The reason is that as income increases, our wants are satisfied side by side, so that the need to spend more on consumer goods diminishes.

❖ So, the consumption expenditure increases with increase in income but less than proportionately.

5. Increase in income always leads to an increase in both consumption and saving. – Explain.

This means that increased income is unlikely to lead to fall in either consumption or saving. Thus with increased income both consumption and saving increase.

6. What are Subjective Factors?

i. Subjective factors are the internal factors related to psychological feelings.

ii. According to Keynes, the subjective factors do not change in the short run and hence consumption function remains stable in the short period.

7. Write a note on motives of precaution and foresight.

1. **The motive of precaution:** To build up a reserve against unforeseen contingencies. Eg. Accidents, sickness

2. **The motive of foresight:** The desire to provide for anticipated future needs. Eg. Old age

8. Objective Factors – Define.

Objective factors are the external factors which are real and measurable. These factors can be easily changed in the long run.

9. State the Duesenberry hypothesis.

Duesenberry has made two observations regarding the factors affecting consumption.

a. The consumption expenditure depends not only on his current income but also past income and standard of living.

b. Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups.

10. Define Investment Function

The investment function refers to investment -interest rate relationship. There is a functional and inverse relationship between rate of interest and investment.

$I = f(r)$

I = Investment (Dependent variable)

r = Rate of interest (Independent variable)

11. Write the meaning of investment.

The term investment means purchase of stocks and shares, debentures, government bonds and equities. According to Keynes, it is only financial investment and not real investment.

12. Write a note on autonomous investment

❖ Autonomous investment is the expenditure on capital formation, which is independent of the change in income, rate of interest or rate of profit.

❖ **Examples :** Construction of road, bridges, School, Charitable houses

13. Draw the diagram of autonomous investment

Autonomous Investment
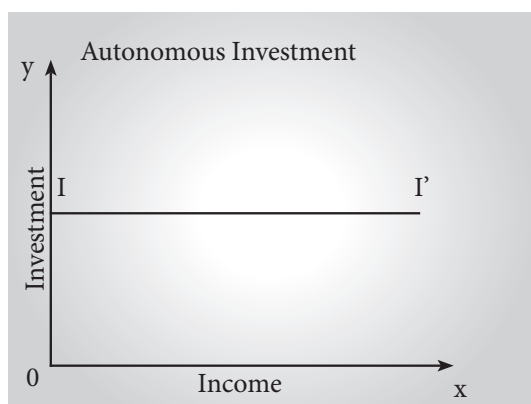
14. Define Induced investment.

❖ Induced investment is the expenditure on fixed assets and stocks which are required when level of income and demand in an economy goes up.

❖ Induced investment is profit motivated. It is related to the changes of national income. The relationship between the national income and induced investment is positive.

❖ So the wages are more or less rigid rather than flexible.

15. Draw the diagram of induced investment.

Induced Investment
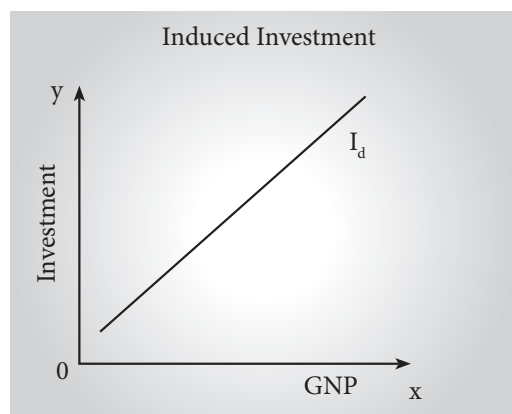
16. Write the Relationship between rate of interest and Investment:

❖ Higher interest rates reduce investment, because higher rates increase the cost of borrowing and require investment to have a higher rate of return to be profitable.

❖ If interest rates rise from 5% to 8 %, then we get a fall in the amount of investment

❖ If interest rates are increased then it will tend to discourage investment because investment has a higher opportunity cost.

17. What is the Meaning of Marginal Efficiency of Capital (MEC)?

The rate of discount which makes the discounted present value of expected income stream equal to the cost of capital.

18. What are the factors MEC depends on?

1. The prospective yield from a capital asset.

2. The supply price of a capital asset.

19. Mention the Factors Affecting MEC:

i. The cost of the capital asset

ii. The expected rate of return from during its lifetime

iii. The market rate of interest

20. Define - Marginal Efficiency of Investment

MEI is the expected rate of return on investment as additional units of investment are made under specified conditions and over a period of time.

21. How do you calculate the value of multiplier?

The value of multiplier depends on MPC

Multiplier $= (K) = 1/1\text{-MPC}$

22. How can investment (I) = Saving (S) be a possible?

$Y = C + S$

Or

$Y = C + I$

Since,

C + S = C + I

Answer : S = I

23. What are positive and negative multipliers?

Positive Multiplier

When an initial increases in an injection (or a decrease in a leakage) leads to a greater final increase in real GDP.

Negative Multiplier

When an initial increases in an injection (or an increase in a leakage) leads to a greater final decrease in real GDP.

24. What is a static multiplier?

❖ Under static multiplier the change in investment and the resulting change in income are simultaneous. There is no time lag.

❖ There is also no change in MPC as the economy moves from one equilibrium position to another.

25. Write a short note on Dynamic multiplier.

❖ Dynamic multiplier is also known as 'sequence multiplier'.

❖ In real life, income level does not increase instantly with investment.

❖ In fact, there is a time lag between increase in income and consumption expenditure.

26. What are the "Leakages of Multiplier?

Leakages of multiplier

i. The multiplier assumes that those who earn income are likely to spend a proportion of their additional income on consumption.

ii. But in practice, people tend to spend their additional income on other items. Such expenses are known as leakages.

27. Mention any two uses of multiplier

concept.

1. Multiplier highlights the importance of investment in income and employment theory.

2. The process throws light on the different stages of trade cycle.

3. It also helps in bringing the equality between S and I.

4. It helps in formulating Government policies.

5. It helps to reduce unemployment and achieve full employment.

28. Write the channel of effects of accelerator

i. Increase in consumer demand

ii. Films get close to fill capacity

iii. Films invest to meet rising demand.

29. What is Definition of "The accelerator coefficient"?

"The accelerator coefficient is the ratio between induced investment and an initial change in consumption."

30. Mention any two limitations of accelerator principle

Limitations

1. The assumption of constant capital-output ratio is unrealistic.

2. Resources are available only before full employment.

3. Excess capacity in capital goods industries is assumed.

4. Accelerator will work only if the increased demand is permanent.

5. Accelerator will work only when credit is available easily.

31. "Super Multiplier" – Define.

❖ Hicks has combined the k and β

mathematically and given it the name of the Super Multiplier.

❖ The super multiplier is worked out by combining both induced consumption and induced investment.

32. Write the definition of "Leverage Effect".

The combined effect of the multiplier and the accelerator is also called the leverage effect which may lead the economy to very high or low level of income propagation.

Symbolically,

$$Y = C + IA + IP$$

Y = Aggregate income.

C = Consumption expenditure

IA = autonomous investment

IP = induced private investment

33. Assume a consumption function that takes on the following algebraic form: C = Rs.100 +0.8Y. Assume that Y = Rs.1000 what is the level of consumption at this income level.

C = Rs.100 + 0.8(Rs.1000) = Rs.100 + Rs.800 = Rs.900.

34. Compare and contrast the MPC and the MPS. Also explain what these two figures must always add up to.

i. The MPC is the marginal propensity to consume.

ii. It is the fraction of an increase in income that is consumed.

iii. The MPS is the marginal propensity to save.

iv. It is the fraction of an increase in income that is saved.

v. The MPC and the MPS must always sum to 1 since there are only two things that one can do with one's income - consume and save.

35. Assume a consumption function of the form C = 200 + 0.8Y. Derive the saving function and write out the algebraic representation.

$$S = Y - C$$

Therefore,

$$S = Y - (200 + 0.8Y)$$
$$= -200 + .2Y$$

36. Why doesn't the multiplier process go on forever?

i. Only a fraction of the increase in income is consumed in each spending round.

ii. Successive increases in income become smaller and smaller in each round of the multiplier process until equilibrium is restored.

**37. Explain how the following two equations can both be true: Multiplierk = 1/MPS Multiplier k = 1/1-MPC.**

The reason that both equations are true is because of the identity MPS + MPC = 1. This is true because there are only two things that one can do with one's income - consume and save.

Additional Three Marks

1. Draw the diagram of consumption function
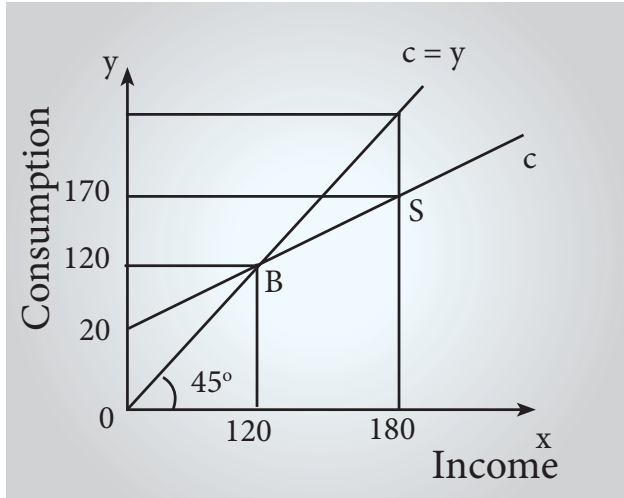
2. Draw the diagram depicting the psychological law of consumption.
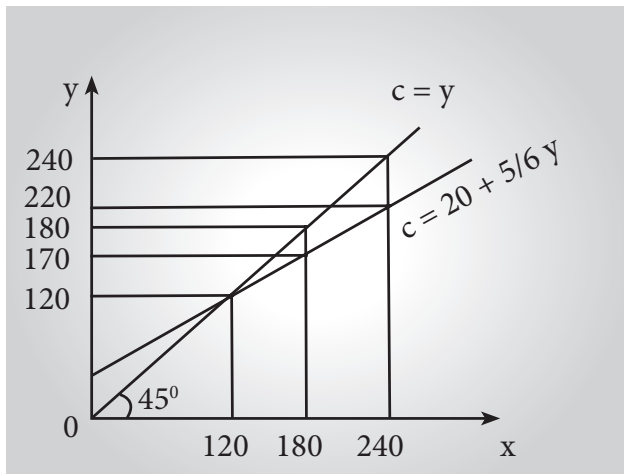
3. Given the table, write the proposition for consumptions function (value in crores).

Income	Consumption	Savings
120	120	0
180	170	10
240	220	20

Proposition (1):

Income increases by Rs. 60 crores and the increase in consumption is by Rs. 50 crores.

Proposition (2):

The increased income of Rs. 60 crores in each case is divided in some proportion between consumption and saving respectively. (i.e., Rs. 50crores and Rs. 10 crores).

Proposition (3):

As income increases consumption as well as saving increase. Neither consumption nor saving has fallen.

4. Given the diagram, write the proposition for consumptions function.
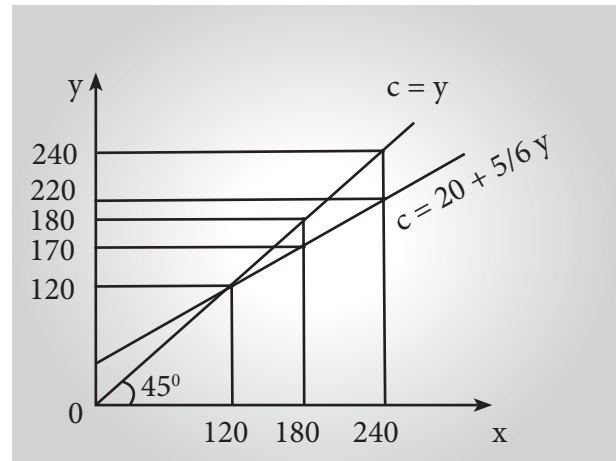
Proposition (1):

When income increases from 120 to 180 consumption also increases from 120 to 170 but the increase in consumption is less than the increase in income, 10 is saved.

Proposition (2):

When income increases to 180 and 240, it is divided in some proportion between consumption by 170 and 220 and saving by 10 and 20 respectively.

Proposition (3):

Increases in income to 180 and 240 lead to increased consumption 170 and 220 and increased saving 20 and 10 than before. It is clear from the widening area below the C curve and the saving gap between 45° line and C curve.

5.   State Duesenberry hypothesis.

　　Duesenberry has made two observations regarding the factors affecting consumption.

a)   The consumption expenditure depends not only on his current income but also past income and standard of living. As the individuals are accustomed to a particular standard of living, they continue to spend the same amount on consumption even though the current income is reduced.

b)   Consumption is influenced by demonstration effect. The consumption standards of low income groups are influenced by the consumption standards of high income groups. In other words, the poor people want to imitate the consumption pattern of rich. This results in spending beyond their income level.

6.   Draw the diagram of induced investment and autonomous investment

Induced Investment

Autonomous Investment
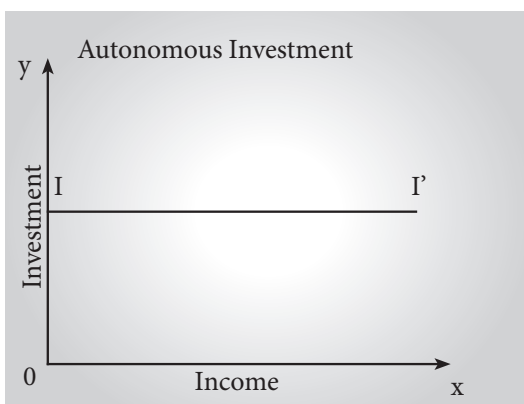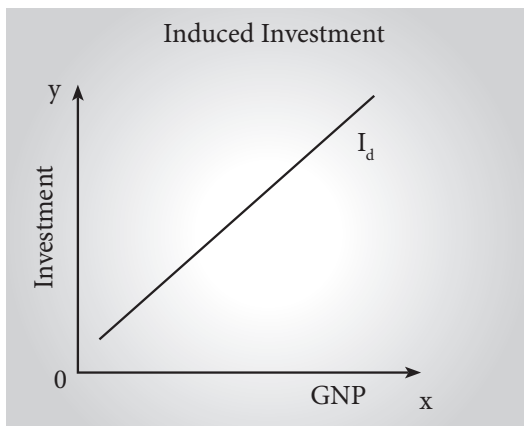
7.   Mention any five Determinants of Investment Function.

1. Rate of interest
2. Level of uncertainty
3. Political environment
4. Rate of growth of population
5. Stock of capital goods
6. Necessity of new products
7. Level of income of investors
8. Inventions and innovations
9. Consumer demand
10. Policy of the state
11. Availability of capital
12. Liquid assets of the investors.

8.   Draw the diagram depicting the Relationship between rate of interest and Investment.
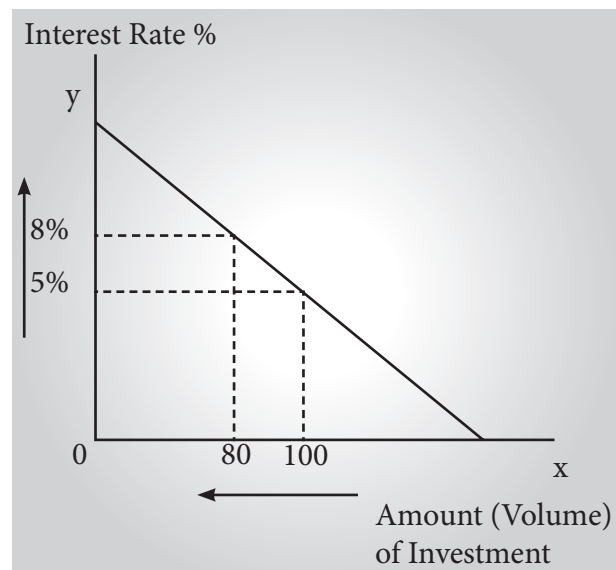
9.   Explain any three short fun factors of MEC.

Short - Run Factors

(i)   **Demand for the product:** If the market for a particular good is expected to grow and its costs are likely to fall, the rate of return from investment will be high. If entrepreneurs expect a fall in demand for goods and a rise in cost, the investment will decline.

(ii) Liquid assets: If the entrepreneurs are holding large volume of working capital, they can take advantage of the investment opportunities that come in their way. The MEC will be high.

(iii) Sudden changes in income: The MEC is also influenced by sudden changes in income of the entrepreneurs. If the business community gets windfall profits, or tax concession the MEC will be high and hence investment in the country will go up. On the other hand, MEC falls with the decrease in income.

10. Explain any three long run factors of MEC.

(i) Monetary and Fiscal policies: Cheap money policy and liberal tax policy pave the way for greater profit margin and so MEC is likely to be high.

(ii) Political environment: Political stability, smooth administration, maintenance of law and order help to improve MEC.

(iii) Resource availability: Cheap and abundant supply of natural resources, efficient labour and stock of capital enhance the MEC.

11. Draw the diagram of Multiplier in an economy.
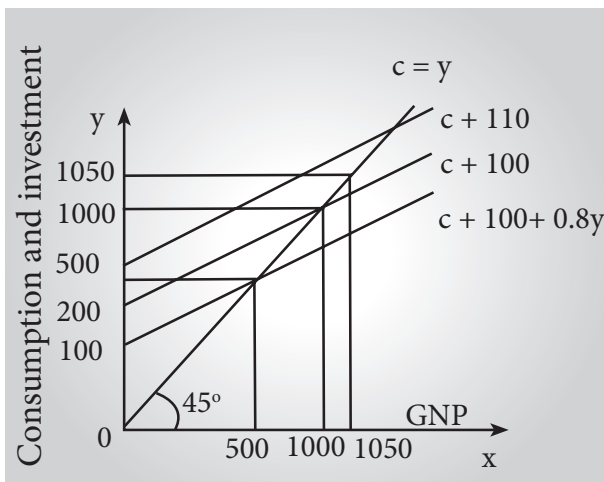
12. Explain any three leakages of multiplier

1. Payment towards past debts.

If a portion of the additional income is used for repayment of old loan, the MPC is reduced and as a result the value of multiplier is cut.

2. Purchase of existing wealth

If income is used in purchase of existing wealth such as land, building and shares money is circulated among people and never enters into the consumption stream. As a result the value of multiplier is affected.

13. List of uses of multiplier.

Uses of multiplier

1. Multiplier highlights the importance of investment in income and employment theory.
2. The process throws light on the different stages of trade cycle.
3. It also helps in bringing the equality between S and I.
4. It helps in formulating Government policies.
5. It helps to reduce unemployment and achieve full employment.

14. What are the limitations of accelerator.

1. The assumption of constant capital-output ratio is unrealistic.
2. Resources are available only before full employment.
3. Excess capacity in capital goods industries is assumed.
4. Accelerator will work only if the increased demand is permanent.
5. Accelerator will work only when credit is available easily.
6. If there is unused or excess capacity in the consumer goods industry, the accelerator principle would not work.

15. **Using the below table, calculate the marginal propensity to consume between the aggregate income levels of Rs.80 and Rs.100. Also explain why this consumption function is linear.**

Aggregate Income	Aggregate Consumption
0	200
80	260
100	275
200	350

i. The marginal propensity to consume is equal to Rs.15/Rs.20 = 0.75.

ii. The consumption function is linear because the marginal propensity to consume is constant and therefore the slope is the same throughout all income levels.

16. **Fill in the table below assuming the consumption function has the following form: C = 500 + .9Y.**

Income	Consumption
Rs. 0	
100	
200	
300	

Answer

Income	Consumption
Rs. 0	500
100	590
200	680
300	770

17. **Assume the following saving function and investment function: S = -200 + .25Y and I = 25. Calculate the equilibrium output level.**

❖ Equilibrium output condition is S = I.

❖ Therefore -200 + 0.25Y = 25.

Rearranging terms 0.25Y = 225.

❖ Multiplying both sides by 4, Y = 900.

18. **Assume the level of saving that would take place in an economy is - Rs.200 even when aggregate output is zero. Also assume that the marginal propensity to save is 0.1. Derive the algebraic expression for the saving function and the consumption function.**

❖ The saving function is S = - 200 + 0.1Y.

❖ Since Y = C + S then C = Y - (-200 + 0.1Y).

❖ This reduces to C = 200 + .9Y.

Additional Five Mark

1. **Draw a consumption table where autonomous consumption is Rs.200 and the marginal propensity to consume is .8. Make sure to start with an income level of Rs.0 and increase by Rs.100 each time up to an income level of Rs.400. Without completing the table any further determine the level of income where consumption and income are equal. Prove this algebraically.**

Answer

Income	Consumption
Rs.0	Rs.200
Rs.100	280
Rs.200	360
Rs.300	440
Rs.400	520

❖ The consumption function is C = 200 + .8Y

❖ Therefore if C = Y we can write Y = 200 + .8Y.

❖ After rearranging terms this yields .2Y = 200.

❖ Solving for Y gives us 1000.

2. Explain the concept of super multiplier.

Meaning of Super Multiplier

- ❖ In order to measure the total effect of initial investment on income, Hicks has combined the k and β mathematically and given it the name of the Super Multiplier.

- ❖ The super multiplier is worked out by combining both induced consumption and induced investment. The combined name of the super multiplier and the accelerator is also called the leverage effect

Components of Super Multiplier

The super multiplier is greater than simple multiplier which includes only autonomous investment and no induced investment, while super multiplier includes induced investment.

The Leverage Effect

The combined effect of the multiplier and the accelerator is also called the leverage effect which may lead the economy to very high or low level of income propagation.

Symbolically,

$$Y = C + IA + IP$$

Y = Aggregate income.

C = Consumption expenditure

IA= autonomous investment

IP= induced private investment

The super – multiplier, tells us that if there is an initial increase in autonomous investment, income will increase by K times the autonomous investment.

3. Explain Multiplier with help of suitable diagram.

Definition

- ❖ The multiplier is defined as the ratio of the change in national income to change in investment.

- ❖ If ΔI stands for increase in investment and ΔY stands for resultant increase in income, the multiplier $K = \Delta Y / \Delta I$.

Assumptions of Multiplier

1. There is change in autonomous investment.

2. There is no induced investment

3. The marginal propensity to consume is constant.

4. Consumption is a function of current income.

5. There are no time lags in the multiplier process.

6. Consumer goods are available in response to effective demand for them.

7. There is a closed economy unaffected by foreign influences.

8. There are no changes in prices.

9. There is less than full employment level in the economy.

The value of multiplier depends on MPC

Multiplier $K = 1/1\text{-MPC}$

- ❖ The multiplier is the reciprocal of one minus marginal propensity to consume. Since marginal propensity to save is 1 - MPC. (MPC+MPS =1).

- ❖ Multiplier is 1/ MPS. The multiplier is therefore defined as reciprocal of MPS. Multiplier is inversely related to MPS and directly with MPC.

Unit 4: Consumption and Investment Functions

Numerically, if MPC is 0.75, MPS is 0.25 and k is 4.

Using formula k = 1/1- MPC

1/1-0.75 =1/0.25 =4
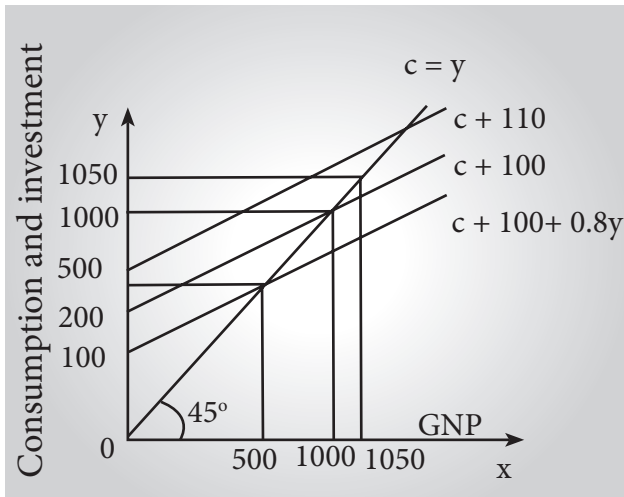
Diagrammatic Explanation.

- ❖ At 45° line y = C+ S
- ❖ It implies the variables in axis and axis are equal.
- ❖ The MPC is assumed to be at 0.8 (C = 100 + 0.8y)
- ❖ The aggregate demand (C+I) curve intersects 45° line at point E.
- ❖ The original national income is 500. (C = 100 + 0.8y = 100 + 0.8(500) = 500)
- ❖ When I is 100, y = 1000, C = 900; S = 100 = I
- ❖ The new aggregate demand curve is C+I' = 100 + 0.8y + 100 +10
- ❖ Y = 210 / 0.2 = 1050
- ❖ C = 940; S = 110 = I

4. State the Relationship between rate of interest and Investment:

- ❖ Higher interest rates reduce investment, because higher rates increase the cost of borrowing and require investment to have a higher rate of return to be profitable.

- ❖ If interest rates rise from 5% to 8 %, then we get a fall in the amount of investment
- ❖ from Rs. 100 cr to Rs. 80 cr.
- ❖ If interest rates are increased then it will tend to discourage investment because investment has a higher opportunity cost.
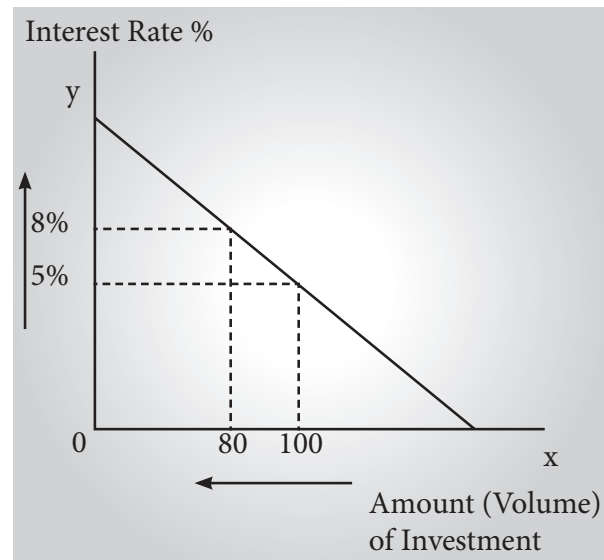
If interest rates are increased then it will tend to discourage investment because investment has a higher opportunity cost.

1. With higher rates, it is more expensive to borrow money from a bank.
2. Saving money in a bank gives a higher rate of return. Therefore, using savings to finance investment has an opportunity cost of lower interest payments.

If interest rates rise, firms will need to gain a better rate of return to justify the cost of borrowing using savings.

5. Explain the short and long run factors of MEC.

a) Short - Run Factors

(i) Demand for the product:

If the market for a particular good is expected to grow and its costs are likely to fall, the rate of return from investment will be high. If entrepreneurs expect a fall in demand for goods and a rise in cost, the investment will decline.

(ii) Liquid assets:

If the entrepreneurs are holding large volume of working capital, they can take advantage of the investment opportunities that come in their way. The MEC will be high.

(iii) Sudden changes in income:

The MEC is also influenced by sudden changes in income of the entrepreneurs. If the business community gets windfall profits, or tax concession the MEC will be high and hence investment in the country will go up. On the other hand, MEC falls with the decrease in income.

(iv) Current rate of investment:

Another factor which influences MEC is the current rate of investment in a particular industry. If in a particular industry, much investment has already taken place and the rate of investment currently going on in that industry is also very large, then the marginal efficiency of capital will be low.

(v) Waves of optimism and pessimism:

The marginal efficiency of capital is also affected by waves of optimism and pessimism in the business cycle. If businessmen are optimistic about future, the MEC will be likely to be high. During periods of pessimism the MEC is under estimated and so will be low.

b) Long - Run Factors

The long run factors which influence the marginal efficiency of capital are as follows:

(i) Rate of growth of population:

Marginal efficiency of capital is also influenced by the rate of growth of population. If population is growing at a rapid speed, it is usually believed that the demand of various types of goods will increase. So a rapid rise in the growth of population will increase the marginal efficiency of capital and a slowing down in its rate of growth will discourage investment and thus reduce marginal efficiency of capital.

(ii) Technological progress:

If investment and technological development take place in the industry, the prospects of increase in the net yield brightens up. For example, the development of automobiles in the 20th century has greatly stimulated the rubber industry, the steel and oil industry etc. So we can say that inventions and technological improvements encourage investment in various projects and increase marginal efficiency of capital.

(iii) Monetary and Fiscal policies:

Cheap money policy and liberal tax policy pave the way for greater profit margin and so MEC is likely to be high.

(iv) Political environment:

Political stability, smooth administration, maintenance of law and order help to improve MEC.

(v) Resource availability:

Cheap and abundant supply of natural resources, efficient labour and stock of capital enhance the MEC.

6. **Derive the value of the multiplier assuming the basic form of the consumption function as C = a + bY where "a" is autonomous consumption and "b" is the marginal**

propensity to consume. You may assume a two-sector economy.

Since Y = C + I we can write Y = a + bY + I.

This equation can be rearranged to yield

> Y - bY = a + I
> Y(1-b) = a + I

We can then solve for Y in terms of I by dividing through by (1 - b):

> Y = (a + I) (1/1 - b)

Now we can see that an increase in I will increase Y by

> △Y = △I x (1/1 - b)

Since b △ MPC, the expression becomes

> △Y = △I x 1/(1 - MPC)

Therefore, the multiplier is 1/1 - MPC or 1/MPS.

7. **Use the table below (for a simple economy with no foreign sector or government) to answer the questions that follow.**

(1) Income (Y)	(2) Con-sumption (C)	(3) Invest-ment (I)	(4) Aggregate Demand AD=C+1 =Column(2) + Column(3)
0	30	(a)	50
300	300	20	(b)
400	(c)	20	410
500	480	20	500
600	(d)	20	(e)

Fill in the missing numbers in the spaces marked (a)-(c). Determine the consumption function, and use the result to fill in the remaining missing numbers (d)-(e). (f) Determine the equilibrium output level.

Solution

(1) In-come (Y)	(2) Con-sump-tion (C)	(3) Intended Invest-ment (l)	(4) Aggrcgate Demand AD = C + 1 =Column(2) + Column(3)
0	30	**20**	50
300	300	20	**320**
400	**390**	20	410
500	480	20	500
600	**570**	20	**590**

Using AD = C + II,

(a) 50   = 30 + 20

(b) 320 = 300 + 20

(c) 410 = 390 + 20 Deriving the consumption function:

Autonomous consumption = 30 (from the first row where Y = 0).

To find the mpc, calculate a change in C (e.g. 390 – 300 = 90), and divide by the corresponding change in Y (400 – 300 = 100).

So the mpc = ΔC/ΔY = 90/100 = 0.9

Hence, the consumption function is C = 30 + 0.9Y To fill in

(d), C = 30 + .9(600) = 30 + 540 = 570.

(e) follows from 590 = 570 + 20.

f. Equilibrium is where Y = AD, which is at 500 (see shaded row).

www.nammakalvi.org