

CLASS 11

ECONOMICS

Class Notes

By

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UNIT - 1 INTRODUCTION

1. ECONOMY - It is a system which provides people the ***means to work*** and ***earn a living***.

Two Types:

- (a)
- (b)

2. SCARCITY -

3. ECONOMIC PROBLEM - It is the problem of **choice** which arises due to-

- a.
- b.
- c.

4. ECONOMISING OF RESOURCES - It means allocating the limited resources in such a way that economy produces maximum goods and services to satisfy human wants i.e. ***effective and efficient*** use of resources.

REASONS / CAUSES OF ECONOMIC PROBLEM

1. Limited Resources:

2. Resources Have Alternative Uses:

3. Unlimited Human Wants:

MICRO – ECONOMICS	MACRO - ECONOMICS
1. Micro economics deals with <i>individual</i> economic units.	1. It deals with the <i>economy as a whole</i> .
2. The main tools are individual demand and individual supply.	2. The main tools are aggregate demand and aggregate supply.
3. Micro economics is also known as _____.	3. It is also known as _____.
4. Micro economics is concerned with price determination by a firm.	4. It is concerned with determination of prices for the economy as a whole.
5. E.g. Price of a product.	5. E.g. General price level.

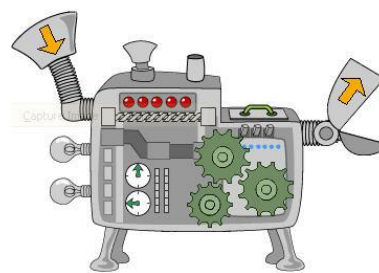
CAPITALIST ECONOMY	SOCIALIST ECONOMY
1. In this economy all the means of production are owned by _____. 2. In this economy, central problems are solved by price mechanism i.e. market forces of demand and supply	1. In this economy, all the means of production are owned by _____. 2. In this economy all the central problem are solved by the central planning authority .

CENTRAL PROBLEM OF AN ECONOMY (Problem of Allocation of Resources)

1. What to Produce: The problem of what to produce is essentially a problem of choice regarding **which goods should be produced and in what quantities by an economy**.
2. How to Produce: The problem of how to produce is essentially a problem of **choice regarding technique of production**.



OR



3. For Whom to Produce: This problem refers to the ***selection of a category of people*** who will ultimately consume the goods i.e. whether to produce for the rich/poor consumer.



OR



PRODUCTION POSSIBILITY CURVE (PPC)

OR PRODUCTION POSSIBILITY FRONTIER

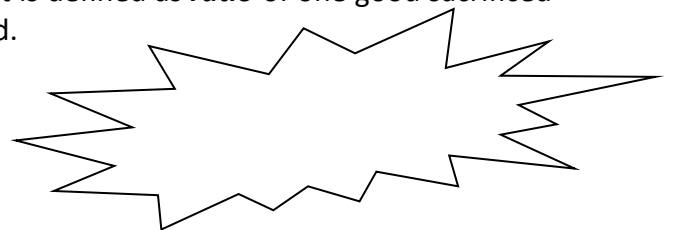
It is a curve which depicts all the possible combination of two goods which an economy can produce with given resources and technology.

Assumptions:

MARGINAL OPPORTUNITY COST (MOC): It is the amount of one goods (say rice) sacrificed to produce one more unit of another good (say wheat).

MARGINAL RATE OF TRANSFORMATION (MRT): It is defined as ***ratio*** of one good sacrificed for production of one additional unit of other good.

$$\text{MRT} = \frac{\Delta \text{ goods sacrificed}}{\Delta \text{ goods produced}}$$



PROPERTIES OF PPC:

- PPC is a **downward sloping** curve from left to right.
- It is **concave** to the origin because of increasing MOC.
- PPC can **shift** to the right or to the left.

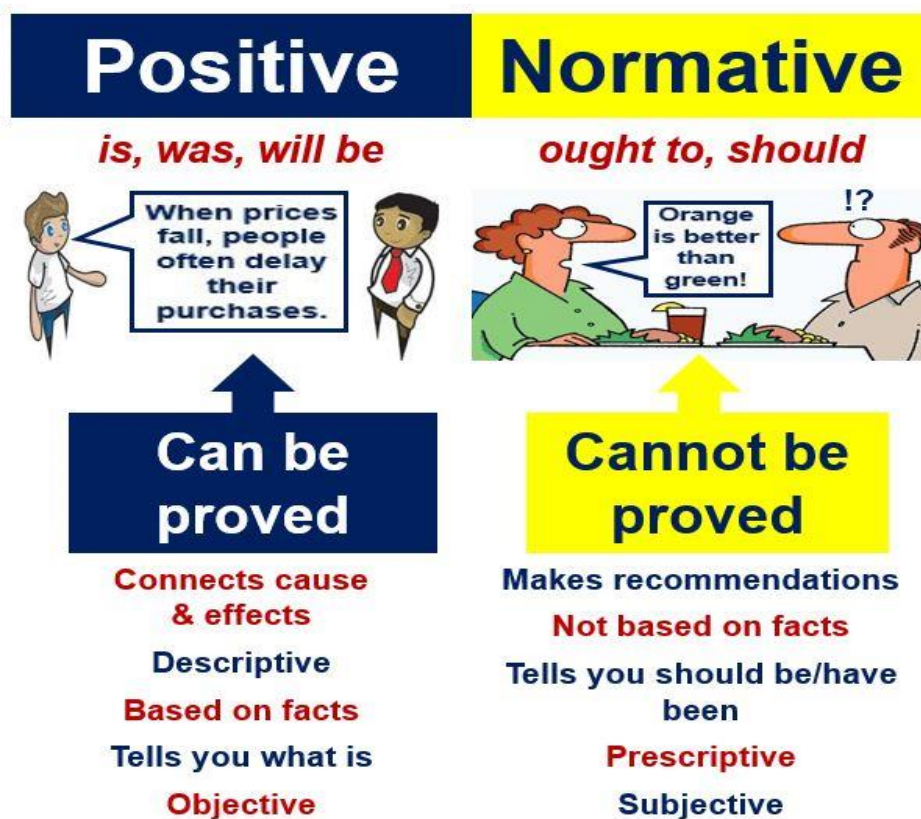
SHIFT IN PPC

1. Rightward Shift: PPC shift rightward due to
 - Discovery of new natural resources i.e. increase in natural resources.
 - Advancement in technology.
 - Increase in labour through population growth.
 -
 -
 -
2. Leftward Shift: PPC shifts leftwards due to
 -
 -
 -
 -
 -

ROTATION OF PPC

1. When technology is efficient for good x, keeping the technology constant for good y, then PPC rotates from aq to aq_1 as this will increase productivity of x.
2. When technology is efficient for commodity y, keeping the technology constant for good x, then PPC rotates from aq to a_1q as this will raise the productivity of y.

OPPORTUNITY COST is the cost of next best alternative foregone.



Very Short Answer Type Questions(1 Mark)

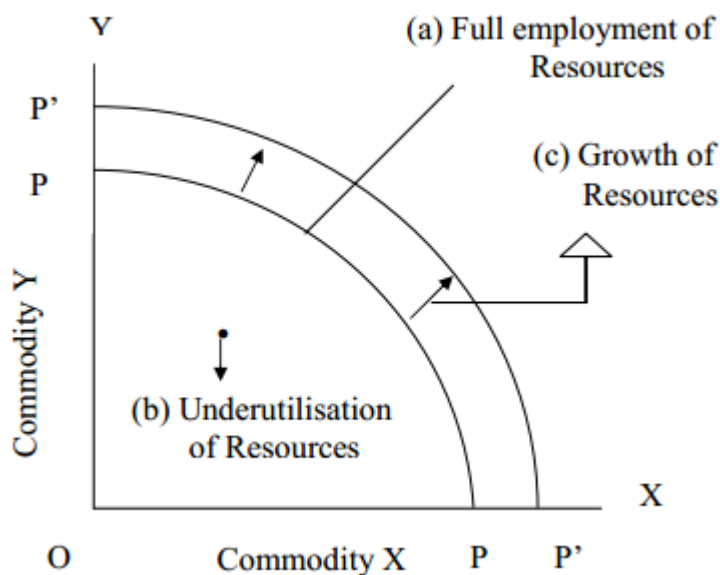
1. With the help of an example, define micro economics.

Ans. Micro Economics is that branch of economics in which economic problems are studied at individual level e.g. the behaviour of consumer, firms, etc.

2. **Define macro economics with the help of an example.**
Ans. Macro economics is that branch of economics which studies the economy as a whole and its aggregates e.g. National income, the level of employment.
3. **Define opportunity cost.**
Ans. For the selection of an opportunity, the sacrifice of next best alternative use is called opportunity cost.
4. **Why does an economic problem arise?**
Ans. An economic problem arises due to scarcity of resources having alternative uses in relation to unlimited wants.
5. **Write two characteristics of resources.**
Ans. Resources are scarce (limited) and they have alternative uses.
6. **What do you mean by scarcity?**
Ans. Scarcity refers to a situation in which demand is more than supply
7. **What do you mean by marginal opportunity cost?**
Ans. Marginal rate of transformation (MRT) is the ratio of one good sacrificed to increase one more unit of the other good.
8. **What do you mean by an economy?**
Ans. An economy is an economic organisation which provides sources to earn livelihood.
9. **Why is there a need for economizing of resources?**
Ans. Because resources are limited.
10. **Why does economic problem arise?**
Ans. It arises mainly because of scarcity of resources.
11. **Why is PPC downward sloping from left to right?**
Ans. Because in situation of full employment of resources, production of one good can be increased only with less of other good.
12. **What does a rightward shift of PPC indicate?**
Ans. The rightward shift of PPC indicates growth of resources or technological progress.
13. **Why does the problem of choice arise?**
Ans. Relative scarcity of resources having alternative uses in relation to unlimited wants, gives rise to an economic problem.
14. **Why does PPC look concave to the origin?**
Ans. PPC is concave to the origin because of increasing marginal rate of transformation (or increasing marginal opportunity cost).
15. **Which factor lead to a shift of PPC towards right hand side?**
Ans. Growth of resources or technological progress leads to a shift of PPC towards right-hand side.
16. **What does a point below PPC indicate?**
Ans. It shows inefficient/under utilization of resources.
17. **What does slope of PPC show?**
Ans. Negative slope of PPC shows that in order to produce more units of one good, some units of the other good must be sacrificed.
18. **When allocation of resources is considered as inefficient?**
Ans. Allocation of resources is considered as inefficient when economy performs below the PPC curve.

Short Answer Type Questions(3-4 Marks)

1. Draw PPC and show the followings:-
 - a. Full employment of resources,
 - b. Underutilisation of resources, and
 - c. Growth of resources.



Ans.

- d. Full employment of resources - A point anywhere on the PPC, shows the efficient use or full employment of resources.
 - e. Underutilisation of resources - A point anywhere inside of the curve, shows inefficient/under utilisation of resources.
 - f. Growth of resources – It refers to the shift in PPC. If more resources are generated, the level of production will increase. In the figure it is represented by a shift in PPC from PP to P'P'.
2. **Why does PPC look concave to the origin? Explain.**

Ans. PPC looks concave to the origin because of increasing marginal rate of transformation/substitution (or increasing marginal opportunity cost). It means that more and more units of commodity 'y' are to be sacrificed, to get each additional unit of commodity 'x'.
3. **What does a PPC show? When will it shift to the right?**

Ans. Production Possibility Curve shows the different combinations of two goods which an economy can produce with available technology and resources. It would shift towards right-hand side in case of growth of resources or technological progress.
4. **Does production take place only on the PP curve?**

Ans. Yes and no, both. Yes, if the given resources are fully and efficiently utilized. No, if the resources are underutilized or inefficiently utilized or both. Refer to the above figure; on a point anywhere on the PPC the resources are fully and efficiently employed. On point U, below the PPC or any other point but below the PPC, the resources are either underutilized or inefficiently utilised or both. Any point below the PP curve thus highlights the problem of unemployment and inefficiency in the economy.

5. **Why does an economic problem arise? Explain.**

Ans. Reasons-

- Unlimited wants - Human wants go on multiplying with the expansion of education, knowledge, scientific advancement and economic growth. A man can not satisfy all of his wants and therefore he has to make a choice in order of urgency.
- Limited resources - The resources are limited in relation to need for them. It is the main cause of economic problem.
- Alternative use of resources - A resource can be utilized in a different way and for different purposes. Therefore choice has to be made among different uses of resources.

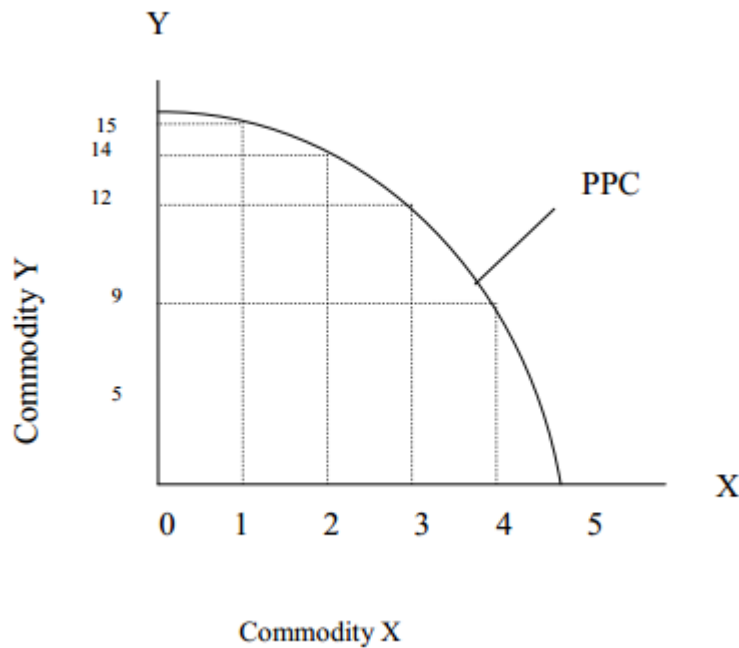
6. **Calculate MRTXY at different production possibilities from the following hypothetical data. Draw a PPC on the basis of the schedule.**

Production possibilities	Commodity X	Commodity Y
A	0	15
B	1	14
C	2	12
D	3	9
E	4	5
F	5	0

Ans.

Production possibility Schedule

Production possibilities	Commodity X	Commodity Y	Marginal Rate of Transformation (MRT) = $\Delta Y / \Delta X$
A	0	15	-----
B	1	14	1 X : 1 Y
C	2	12	2 X : 1 Y
D	3	9	3 X : 1 Y
E	4	5	4 X : 1 Y
F	5	0	5 X : 1 Y



7. **Why is a production possibilities curve concave? Explain.**

Ans. The production possibility curve being concave means that MRT increases as we move downward along the curve. MRT increases because it is assumed that no resource is equally efficient in production of all goods. As resources are transferred from one good to another, less & less efficient resources have to be employed. This raises cost and raises MRT.

8. **Explain properties of a production possibilities curve.**

Ans. There are two properties of a production possibilities curve.

- Downward sloping** : It is because as more quantity of one good is produced some quantity of the other good must be sacrificed.
- Concave to the origin** : It is because the marginal rate of transformation increases as more of one good is produced.

9. **Explain the problem of 'what to produce'.**

Ans. An economy can produce different possible combinations of goods & services with given resources. The problem is that, out of these different combinations, which combination is produced. If production of one good increases then less resources will be available for other goods.

10. **What is 'Marginal Rate of transformation'? Explain with the help of an example.**

Ans. MRT is the rate at which the units of one good have to be sacrificed to produce one more unit of the other good in a two goods economy. Suppose an economy produces only two goods X and Y. Further suppose that by employing these resources fully and efficiently, the economy produces 1X + 10Y. If the economy decides to produce 2X, it has to cut down production of Y by 2 units. Then 2Y is the opportunity cost of producing 1X. Then 2Y:1X is the MRT.

11. Explain the problem 'How to produce'.

Ans. Broadly, there are two techniques of production.

- a) **Labour intensive Technique** : Under this technique, production depends more on the use of labour.
- b) **Capital Intensive Technique** : Under this technique, production depends more on the use of machines (called capital) efficient technique of production is that which uses minimum possible inputs for a given amount of output. So that, cost per unit of output is minimised.

UNIT 2

CONSUMER'S EQUILIBRIUM AND DEMAND

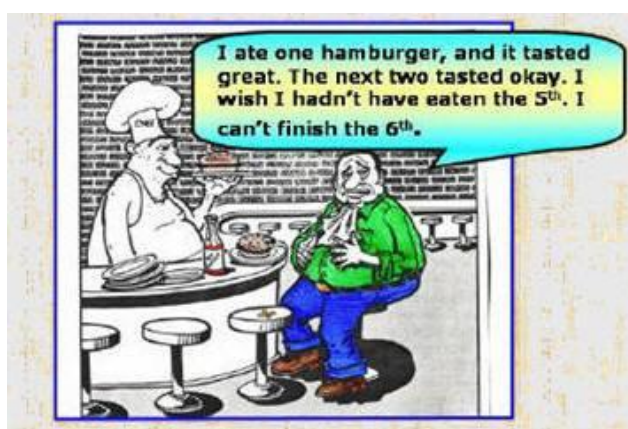
1. UTILITY-

2. MARGINAL UTILITY-

3. TOTAL UTILITY- It is the ***sum of all the utilities*** derived from consumption of certain number of units of a particular commodity.

CARDINAL UTILITY	ORDINAL UTILITY
1. Utility is measurable and _____ concept.	1. Utility is a _____ concept.
2. Utility is expressed _____ in utils	2. Expressed in terms of _____ i.e. consumer gives his preference.
3. Given by prof. Alfred marshal	3. Given by prof. J R Hicks.

LAW OF DIMINISHING MARGINAL UTILITY (DMU) OR FUNDAMENTAL LAW OF SATISFACTION OR FUNDAMENTAL PSYCHOLOGICAL LAW



Law: This law states that

Assumptions:

- Utility can be measured in quantitative terms i.e. utils
- It is assumed that consumption is a continuous process
- No change in quality.
- Rational consumer i.e. consumer is rational and aims at maximizing total satisfaction.

CONSUMER'S EQUILIBRIUM

Two approaches:

- Utility Approach (cardinal) (By Alfred Marshal)
 - (i) Single commodity
 - (ii) Two commodity
- Indifference curve approach (ordinal) (by J.R. Hicks)

UTILITY APPROACH

Assumption

- Utility can be measured
- Consumer is rational
- Price of the commodity is given (constant)
- Income of the consumer is given (constant)

SINGLE COMMODITY:

Equilibrium Condition

$$\text{MU in terms of money (MU}_m\text{) = Price of commodity (P}_x\text{)}$$

I.e.

WHY $MU_M = P_X$ IS THE EQUILIBRIUM CONDITION?

1. Before point E, $MU_M > P_X$ which signifies that consumer is **willing to pay more** than what he actually pays. So he will **consume more** of good X.
2. After point E, $MU_M < P_X$, signifies that consumer is **willing to pay less** than what he actually pays, so he will **reduce the consumption** of good X.
3. Conclusion – From the above two points we infer equilibrium is struck at point E when the price consumer is willing to pay is exactly equal to the price he actually pays.

UTILITY APPROACH (TWO COMMODITIES)

1. Consumer equilibrium definition – SAME
2. Assumption – SAME
3. Consumer's equilibrium conditions

➡ $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y} = \text{MU of last rupee spent on each good.}$

➡ Law of Diminishing Marginal Utility must prevail

1. If $MU_X/P_X > MU_Y/P_Y$, Then it implies that additional utility derived from spending last rupee on Good X is more than the additional utility derived by spending it on good Y. Due to this, the consumer will **increase the consumption of good X (or decrease the consumption of good Y)**, this will continue till $MU_X/P_X = MU_Y/P_Y$
2. If $MU_X/P_X < MU_Y/P_Y$,

Law Of Equi Marginal Utillity (Law Of Substitution) or Law Of Maximum Satisfaction

In order to maximize the satisfaction, the consumer should spend his money income on two good in such a manner that the ratio of MU of commodity to its price becomes equal to the ratio of MU of other commodity to its price, i.e. $\frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$

INDIFFERENCE CURVE ANALYSIS (ORDINAL APPROACH)

1. **Bundle:**
2. **Budget set:**
3. **Budget constraint:** It shows what a consumer can afford to spend with his given income. It is given by



Here, P_1 = Price of good 1
 X_1 = Quantity of good 1
 P_2 = Price of good 2
 X_2 = Quantity of good 2
 M = Money Income

4. **Budget Line:** It represents the different bundles that a consumer can buy spending his entire income.

Budget line equation-



5. **Slope of budget line**

=

=

WHEN DOES A BUDGET LINE SHIFT

1. **RIGHTWARD SHIFT** – Budget line shifts to the right only because of two reasons-
 - (a)
 - (b)
2. **LEFTWARD SHIFT** – Budget line shift to the left when the following situations occur-
 - (a)
 - (b)

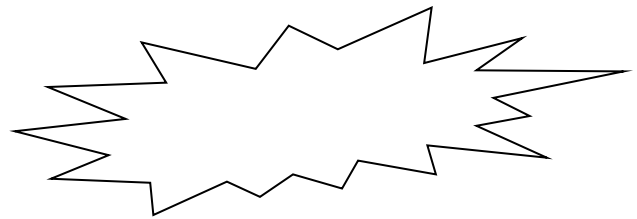
INDIFFERENCE CURVE

1. It is a curve which shows all the **combination of two goods that give equal satisfaction** to the consumer.
2. Indifference map: It is the collection of ICs that represent different level of satisfaction.
3. Monotonic preferences: A consumer prefers a bundle where at least one commodity is more if not both. For example- A consumer will prefer (10, 9) over (9, 9).

MARGINAL RATE OF SUBSTITUTION

It is the rate at which the consumer is willing to give up good Y in order to get additional unit of good X.

$$MRS_{XY} = \frac{\Delta \text{ goods sacrificed (Y)}}{\Delta \text{ goods gained (X)}}$$



CONSUMER'S EQUILIBRIUM (IC Approach or Ordinal Approach)

Assumptions-

1. Consumer is rational
2. Utility is ordinal
3. Consumer has monotonic preference
4. Price of goods and income of consumer is fixed or given.
5. Consumption of **at least two goods** must be there.

EQUILIBRIUM CONDITION

$$\begin{aligned} \diamond &= \\ &= \\ &= \end{aligned}$$

Or **where budget line is tangent to IC curve**

- ❖ MRS_{XY} is diminishing i.e. **IC should be convex** to the origin.
 - At Point A ($MRS_{XY} > P_X/P_Y$) – It implies that the consumer is **willing to sacrifice MORE units of Y as compared to what is required in the market** to obtain one more unit of X, due to which he will **increase the consumption of good X**, which lead to fall in the utility of good X and finally MRS_{XY} starts falling till the time $MRS_{XY} = P_X/P_Y$
 - At Point B ($MRS_{XY} < P_X/P_Y$) –

- At Point H – Point H is desirable since it has on IC₃, but it is **unattainable** as it is beyond the budget line.
- The consumer will attain the equilibrium at **point E where the budget line is tangent to the IC**. It is the only combination which the consumer is willing to buy and is able to buy.

PROPERTIES OF INDIFFERENCE CURVE

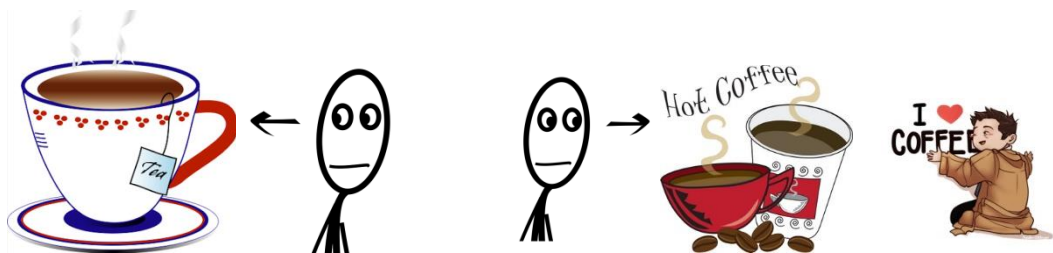
1. Two indifference curves **never intersect** each other.
2. Higher the IC, higher the satisfaction.
3. IC is **downward sloping** and **convex** to the origin.

DEMAND

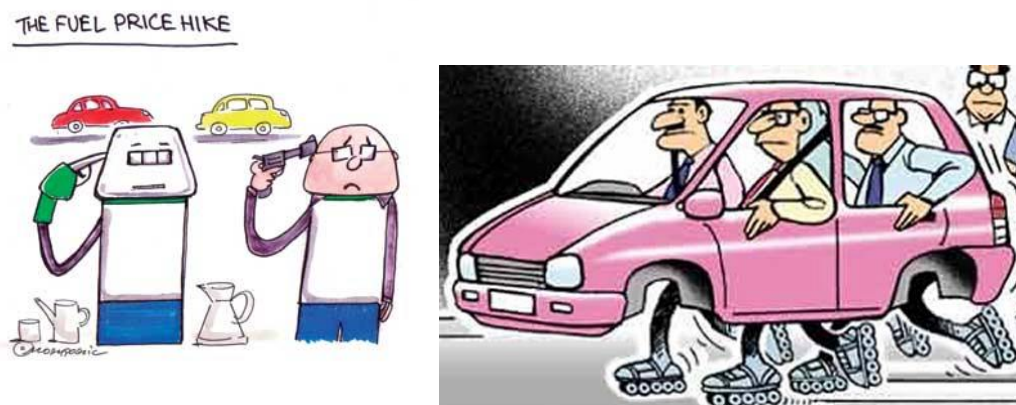
Quantity of a commodity which a consumer is willing to buy at a given price during a particular period of time. It is also known as desire backed by purchasing power.

Factors Affecting Demand / Determinants of Demand

1. **Price of commodity (P_X):** Price of the commodity has an *inverse* relationship with the quantity demanded of the commodity i.e. if price of good X increases, then quantity demanded for good X falls.
2. **Price of related goods (P_R):**
 - Substitute goods –



- Complimentary goods –



3. **Income of the consumer (Y):** As the income of the consumer changes, the quantity demanded of various goods increase, decrease or remains constant.
 - Normal goods-
 - Inferior goods-
 - Necessity goods-
4. **Taste and Preference (T):** Taste and preference of the consumer also affects the quantity demanded of the good. In case of favorable taste, demand for the good will be higher. In case of unfavorable taste demand for good will generally lower.
5. **Other Factor (O):** Example Demand for goods in fashion is generally higher.

DEMAND FUNCTION

It depicts the relationship between quantity demanded and determinants of demand.

$D_X = f(P_X, P_R, Y, T, O)$.

Here, D_X = Quantity demanded of good X

P_X = Price of good X

P_R = Price of related good

Y = Income of consumer

T = taste and preference

O = other factors

Demand Schedule – It is a _____ showing different quantity of commodity demanded at different prices during a given period of time.

Price of Good X (P_X)	Quantity demanded of Good X

Law of Demand – It states that being other things constant (_____), quantity demanded for a commodity is ***inversely*** related to its price.

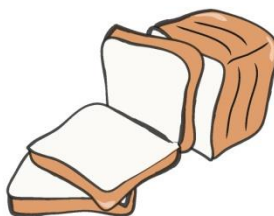
Assumption of law of demand –

1. Price of related good remains ***constant***.
2. Income of the consumer remains ***constant***.
3. No change in Taste and Preference of the ***consumer***.
4. Other factors also remain ***constant***.

Demand Curve – It is also a ***graphical representation*** showing different quantity of commodity demanded at different prices during the given period of curve.

Exception of Law of demand

1. **Giffen goods** (Sir Robert Giffen) –



2. **Conspicuous goods**–



3. **Necessity goods** –



4. **Emergency goods –**



5. **Future expectations –**



WHY DOES THE LAW OF DEMAND OPERATE?

OR

WHY IS THERE AN INVERSE RELATION BETWEEN PRICE AND QUANTITY DEMANDED?

OR

WHY IS DEMAND CURVE DOWNWARD SLOPING?

OR

WHY DOES THE CONSUMER BUY MORE OF A COMMODITY WHEN ITS PRICE FALLS?

1. Law of diminishing marginal utility – As more and more unit of a commodity is consumed, the utility derived from it goes on decreasing. So the price has to be decreased to sell more units of a commodity.
2. Income effect - When the price of a commodity falls, the real income i.e. **purchasing power** of the consumer increases which leads to increase in the quantity.
3. Substitution effect – Substituting a cheaper commodity for a relatively expensive commodity is known as substitution effect. Therefore, demand of a commodity falls when its price rises.
4. Number of consumers – When price of a commodity falls, new consumers enter the market and start buying more of that good. Therefore its demand increases when the price falls.

CHANGE IN QUNATITY DEMANDED	CHANGE IN DEMAND

EXPANSION IN DEMAND

Reason – **Fall** in price of a commodity.

Explanation –

Schedule –

PRICE OF GOOD X (P_x)	QUANTITY OF DEMANDED (Q_x)

CONTRACTION IN DEMAND

Reason – *Rise* in price of a commodity.

Explanation –

Schedule –

PRICE OF GOOD X (P_x)	QUANTITY DEMANDED OF GOOD X (Q_x)

INCREASE IN DEMAND

Reason –

- 1.
- 2.
- 3.
- 4.
- 5.

Explanation –

Schedule -

PRICE OF GOOD X	QUANTITY OF GOOD X

DECREASE IN DEMAND

Reason –

- 1.
- 2.
- 3.
- 4.
- 5.

Explanation –

Schedule –

PRICE OF GOOD X	QUANTITY OF GOOD X

“RISE IN INCOME OF THE CONSUMER WILL ALWAYS INCREASE THE DEMAND OF A COMMODITY.” DEFEND OR REFUTE.

I refute the given statement. The above statement holds true only in case of normal good but in case of inferior good the demand falls with rise in income and in case of necessity goods the demand does not change with rise in income.

Conclusion – We can conclude that a rise in income will not always increase the demand of commodity.

MARKET DEMAND

It is the ***aggregate of quantities demanded by all the consumers*** in the market at different prices during a given period.

For example:

P _x	Q _D (A)	Q _D (B)	Q _D (C)	MARKET DEMAND

Factors affecting Market Demand:

1. Price of the commodity
2. Price of related goods
3. Income of the consumer
4. Taste and Preference
5. Other factors
6. **No. of consumer/population:** If the no. of consumers in the market increases then market demand also increases and vice versa and therefore there is a direct relation between no. of consumers.
7. **Distribution of income:** If the distribution of income increases inequally i.e. the rich becoming richer and the poor becoming poorer the demand for luxury goods is expected to rise and also poor people will increase the demand for inferior good.

ELASTICITY OF DEMAND

1. **Price Elasticity** of demand –
2. **Income elasticity** of demand –
3. **Cross elasticity** of demand –

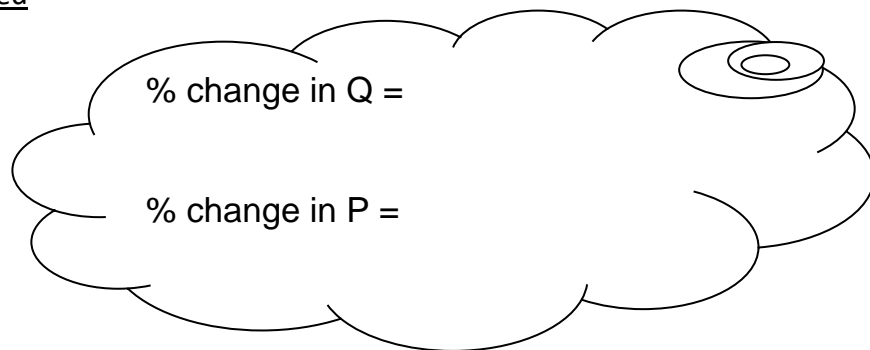
Degree of Elasticity of Demand

1. **Perfectly Inelastic** ($E_d = 0$): It means that quantity demanded does not change at all with the change in price. In this case, demand curve is **parallel to Y-axis**.
2. **Perfectly elastic** ($E_d = \infty$): It means that the demand changes without any change in price. In this case, demand curve is **parallel to X-axis**.
3. **Less than elastic (inelastic)** ($E_d < 1$): It means that % change in demand is less than % change in its price. In this case the **demand curve is Steeper**.
4. **More than elastic (elastic)** ($E_d > 1$): It means that % change in demand is more than the % change in price. In this case **demand curve is Flatter**.
5. **Unitary elastic (unit elastic)** ($E_d = 1$): It means that % change in demand is equal to % change in price.

METHODS OF CALCULATING ELASTICITY - Proportionate Method (% age method)

$$E_d = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$$

OR



E_d is always **NEGATIVE** because price and demand has inverse relation

FACTORS AFFECTING ELASTICITY OF DEMAND

1. No. of close substitutes: If a good has a **large number of substitutes** then its demand is likely to be **highly elastic** because a very small increase in price would result in consumer's shifting to other products. Example- pens, soaps, etc. On the other hand if a commodity does not have close substitutes, then its demand is likely to be inelastic. Example- Textbooks.
2. Nature of commodity: The demand for **luxury goods** like perfume, expensive cars are generally **elastic** because in response to any price change, the quantity demanded changes by large percentage. On the other hand, demand for necessity goods. Example- food, salt are generally inelastic.
3. Time period: If the time period available to the consumer is short, then generally demand is inelastic. On the other hand, if the time period available to the consumer is **long**, then demand is generally **elastic**.
4. Proportion of Total expenditure on commodity: If the amount spent on the product constitutes a **big proportion** of TE, then demand for the product is **elastic**. On the other hand, if very small proportion of TE is spent on a product then demand is likely to be inelastic. Example- Matchbox.
5. Number of uses: If a commodity can be put to **many uses** then its demand is likely to be **elastic**. Example- Milk, elastic etc.
6. Habits of consumer: Commodities in **habits** generally have **low elasticity**. Example- Cigarettes, alcohol.

(Demand Elasticity Numericals)

Q1 :- When the price of a good falls by 10% then its demand increases by 15%. Find elasticity of demand.

Q2 :- At a price of Rs. 20 per unit, the quantity demanded of a commodity is 300 units. When its price falls by Rs. 4, its quantity demanded rises to 450 units. Calculate its price elasticity.

Q3 :- The quantity demanded of commodity at price of Rs. 8 is 600 units. Its price falls by 25% and quantity demanded rises by 120 units. Calculate elasticity of demand.

Q4 :- At a price of Rs.50 per unit, the quantity demanded of a commodity is 1000 units. When its price falls by 10%, its quantity demanded rises to 1080 units. Calculate its price elasticity.

Q5:- Price elasticity of demand is (-)1. At a given price the consumer buys 60 units of the good. How many units will the consumer buy if the price falls by 10%?

Q6 :- A consumer buys 100 units of a good at a price of Rs.5 per unit. When price changes he buys 140 units. Calculate the new price if elasticity of demand is 2.

Q7 :- Price of the commodity increases from 50 to 60. Quantity demanded initially was 200 units. What should be the new quantity so that elasticity of demand is established to be unitary ?

Q8 :- The market price of a good changes from Rs.5 to Rs.4. As a result, the quantity demanded rises by 12 units. The price elasticity is 1.5. Find initial and final quantity.

Q9 :- When the price of a commodity rises from Rs. 10 to Rs. 11, its quantity falls by 100 units. Its price elasticity is 2. Calculate its quantity at increased price.

Q10 :- A consumer buys 14 units of a good at a price of Rs. 8 per unit. At a price Rs. 7 per unit he **spends** Rs. 98 on the good. Calculate price elasticity by percentage method.

Q11 :- Commodities X and Y have equal price elasticity of demand. The demand of X rises from 400 units to 500 units due to a 20% fall in its price. Calculate percentage fall in demand of Y if its price rises by 8%.

Q12 :- The price elasticity of demand of Good X is half the price elasticity of demand of Good Y. A 10% rise in the price of Good Y results in fall in demand from 400 units to 280 units. Calculate the percentage change in quantity demanded of Good X when its price falls from Rs. 20 to Rs. 18 per unit ?

Q13 :- Consider the demand curve $D(p) = 12 - 5p$. What is the elasticity at price $7/5$?

Q14 :- Consider the demand curve $D(p) = 14 - 3p$. What is the elasticity at price $5/3$?

Very Short Answer Type Questions(1 Mark)

1. **What is meant by utility?**

Ans. Utility is the power of goods to satisfy human wants.

2. **How is Total utility derived from marginal utilities?**

Ans. Total utility is derived by summing up the marginal utilities $TU = \text{Sum of } MU$.

3. **What is Law of Diminishing Marginal Utility?**

Ans. Law of diminishing marginal utility states that as more and more units of a commodity are consumed marginal utility derived from every additional unit must decline.

4. **What will be the behaviour of total utility when marginal utility is zero?**

Ans. Total utility will be maximum.

5. **State condition of consumer's equilibrium in respect of one good.**

Ans. $MU_x = P_x$

6. **Define consumers equilibrium.**

Ans. Consumers equilibrium refers to a situations in which a consumer gets maximum satisfaction from his given income and market price.

7. **What is meant by Marginal Rate of Substitution (MRS).**

Ans. MRS is the rate of sacrifice of one good to get an additional unit of other good.

8. **What is meant by budget set.**

Ans. The set of bundles available to the consumer with his given income at prevailing market price is called the budget set.

9. **Define Indifference curve Map.**

Ans. A family of indifference curve indicating different levels of satisfaction called indifference map.

10. **How is budget line defined?**

Ans. Budget line is a line showing all different possible combinations of two goods which a consumer can buy with his given income and the price of both goods.

11. **Why does higher indifference curve give more satisfaction?**

Ans. Higher difference curve shows a higher level of satisfactions. It shows the various combinations of excess quantity of both goods than lower indifference curve.

12. **What is the impact of diminishing marginal rate of substitution on the slope of indifference curve?**

Ans. Indifference curve become convex towards the origin.

13. **Define monotonic preference.**

Ans. Consumer's preferences are called monotonic when between any two bundles, one bundle has more of one good and no less of other good.

14. **How is market demand schedule derived with the help of individual demand schedules?**

Ans. By summations of individual schedules.

15. **Define normal good.**

Ans. Normal goods are those goods, the demand for which increases as income of the buyer rise. There in positive relation between income and demand of these goods.

16. **How does availability of substitute good affect the elasticity of demand?**
Ans. The demand of a good becomes elastic if its substitute good is available in the market.
17. **Demand of good 'X' falls due to increase in the income of the consumer what type of good 'X' is?**
Ans. Good 'X' is an inferior good.
18. **What will be the impact on demand of the good due to increase in price of the substitute good?**
Ans. The demand of the good will increase.
19. **A rise in price of a good results in a decrease in expenditure of it. Is its demand elastic or inelastic?**
Ans. Elastic.
20. **What is meant by market demand?**
Ans. Market demand is the sum of total demand of all the consumers in the market at a particular time and at a given price.
21. **Define demand schedule.**
Ans. Demand schedule is a tabular representation which represent different quantities of the commodity demanded at different prices.
22. **What cause an upward movement along a demand curve?**
Ans. Increase in price while other factors are constant.
23. **If the number of consumers increase, in which direction will the demand curve shift?**
Ans. Rightward.
24. **A straight line demand curve is given. What will be elasticity of demand on the mid point of this curve.**
Ans. Equal to unit.
25. **If the slope of a demand curve is parallel to X-axis, what will be the elasticity of demand?**
Ans. Perfectly elastic.
26. **Why is demand of water inelastic?**
Ans. Because water is a necessity good.
27. **Define price elasticity of demand.**
Ans. The price elasticity of demand is the degree of responsiveness of quantity demanded of a commodity to the change in its price.

Short Answer Type Questions(3-4 Marks)

1. **Distinguish between 'increase in demand' and 'increase in quantity demanded' of a commodity.**
Ans. When demand increases at given price then it is called 'increase in demand'. On the other hand, when demand increases by decrease in the price of a commodity then it is called increase in quantity demand.
2. **Given price of a good, how does a consumer decide as to how much of that good to buy?**
Ans. Consumer purchases up to the point where marginal utility is equal to the price ($MU=P$). So long as marginal utility is greater than price, he keeps on purchasing. As he makes purchases MU falls and at a particular quantity of the good MU becomes equal to price. Consumer purchases up to this point.

3. **Explain how the demand for a good is affected by the price of its related goods. Give examples.**

Ans. Related goods are either substitutes or complementary

Substitutes Goods : When price of a substitute falls, it becomes cheaper than the given good. So the consumer substitutes it for given good will decrease. Similarly, a rise in the price of substitute will result in increase in the demand for given good. For example Tea and Coffee.

Complementary Goods : When the price of a complementary good falls its demand rises and the demand for the given good will increase. Similarly when price of complementary good increases, then demand for given good decreases. For example : – Car & Petrol.

4. **Distinguish between normal goods and inferior goods. Give example also.**

Ans. Normal Goods : These are the goods the demand for which increases as income of the buyer rises. There is a positive relationship between income and demand or income effect is positive.

Example ; Rice, Wheat

Inferior Goods : These are the goods the demand for which decreases as income of buyer rises. Thus, there is negative relationship between income and demand or income effect is negative.

Example : coarse grain, coarse cloth.

5. **Explain any four factors that affect price elasticity of demand.**

Ans.

1. **Nature of Commodity :** Necessaries like Salt, Kerosene oil etc. have inelastic demand and luxuries have elastic demand.
2. **Availability of substitutes :** Demand for goods which have close substitutes is relatively more elastic and goods without close substitutes have less elastic demand.
3. **Different uses :** Commodities that can be put to different use have elastic demand for instance electricity has different uses.
4. **Habit of the consumer :** Goods to which consumers become habitual will have inelastic demand.

Examples – Liquor and Cigarette.

6. **Explain relationship between total utility and marginal utility with the help of a schedule.**

Ans.

Quantity (Units)	Total utility	Marginal utility
0	0	–
1	8	8
2	14	6
3	18	4
4	20	2
5	20	0
6	18	– 2

1. As long as MU is positive, TU increases at diminishing rate.
2. When marginal utility is equal to zero then total utility is maximum.
3. When marginal utility is negative; Total utility starts diminishing.

7. **Define marginal utility. State the law of diminishing marginal utility.**

Ans. Marginal Utility : It is addition more to the total utility as consumption is increased by one more unit of the commodity.

Law of Diminishing Marginal utility : It states that as consumer consumes more and more units of a commodity, the utility derived from each successive unit goes on decreasing. According to this law TU increases at decreasing rate and MU decreases.

Higher Order Thinking Skills

1. **Why does total utility increases at diminishing rate due to continuous increase in consumption?**

Ans. As more and more units of commodity are consumed, marginal utility derived from each successive unit tends to diminish so total utility increases at diminishing rate up.

2. **Due to decrease in price of pen why does the demand of ink increase?**

Ans. These are complementary goods.

3. **What will be the behaviour of total utility when marginal utility curve lies below X-axis?**

Ans. Total utility start to decline.

4. **When is demand inelastic?**

Ans. When percentage change in quantity demanded is less than percentage change in price, the demand is said to be inelastic.

5. **Give two examples of normal goods & inferior goods.**

Ans. Normal goods – Rice, Wheat

Inferior goods – coarse grain, coarse cloth.

6. **Determine how the following changes (or shifts) will affect market demand curve for a product.**

- A new steel plant comes up in Jharkhand people who were previously unemployed in the area are now employed. How will this affect the demand for colour T.V. and Black and White T.V. in the region?**
- In order to encourage tourism in Goa. The Government of India suggests Indian Airlines to reduce air fare to Goa from the four major cities of Chennai, Kolkata, Mumbai and New Delhi. If the Indian Airlines reduces the fare to Goa, How will this affect the market demand curve for air travel to Goa?**
- There are train and bus services between New Delhi and Jaipur. Suppose that the train fare between the two cities comes down. How will this affect demand curve for bus travel between the two cities?**

Ans:

- There will be rightward shift in market demand curve for colour and Black and White T.V. This is because of increase of income of the people due to employment in the new steel plant.
- The demand for travel to Goa will expand in response to reduction in the air fare. However, this will be reflected by a movement along the demand curve. There will be no shifts in the demand curve.
- As train fare comes down the demand for bus travel will reduce. Demand curve for the bus travel will shift to the left showing less demand at the same price.

7. **If a good can be used for many purposes, the demand for it will be elastic. Why?**

Ans: If a good can be used for many purposes, the demand for it will be more elastic because with a decrease in its price it is put to several uses and with a rise in its price it is withdrawn from its many existing uses. So that, there is a considerable change in demand in response to some change in price.

UNIT – 3
PRODUCER'S BEHAVIOUR AND SUPPLY

SUPPLY – It is defined as quantity of a commodity that a producer is willing and able to sell at a given price during a given period of time.

Determinants of supply (or factors affecting supply)

1. **Price of the commodity (P_x):**

2. **Price of other related good/competitive good (P_r):**

3. **Cost of factors of production** example inputs, raw material, labour etc. (**F**):

4. **Technology (T):** Advanced technology reduces the cost of production, leading to more profits and as a result supply increases.

5. Other factors (O):
 - (a) **Excise duty** –

 - (b) **Subsidies** –

SUPPLY FUNCTION

It is a technical function which gives the relationship between supply of a commodity and its determinants.

$$S_x = f(P_x, P_r, F, T, O)$$

LAW OF SUPPLY (QUALITATIVE STATEMENT): It states that being other things constant (CETERIS PARIBUS), there is a **direct relationship** between price of the commodity and its quantity supplied.

Assumptions of law of supply

1. Price of other related goods remains **constant**.
2. Costs of factors of production **do not change**.
3. Technology remains **constant**.
4. Other factors example – Excise duty, subsidy etc. **do not change**.

SUPPLY SCHEDULE

It is a tabular presentation showing a direct relationship between quantity supplied and price of the good.

PRICE OF GOOD X (P_x)	SUPPLY OF GOOD X (S_x)

SUPPLY CURVE

It is a graphical representation showing a direct relationship between price of a commodity and quantity supplied.

CHANGE IN QUANTITY SUPPLIED	CHANGE IN SUPPLY
1. Due to change in Price of the commodity. 2. Movement along supply curve. 3. Types (a) Expansion in supply. (b) Contraction in supply.	1. Due to change in factors other than price . 2. Shift in supply curve. 3. Types (a) Increase in supply. (b) Decrease in supply.

EXPANSION IN SUPPLY

Reason – **Increase in price** of the commodity.

Explanation –

Schedule –

PRICE OF GOOD (P_x)	QUANTITY OF SUPPLIED (S_x)

CONTRACTION IN SUPPLY

Reason – **Decrease in price** of the commodity.

Explanation –

Schedule –

PRICE OF GOOD (P_x)	QUANTITY SUPPLIED (S_x)

INCREASE IN SUPPLY

Reasons –

1. Decrease in price of other related good.
2. Advancement in technology.
3. Decrease in cost of factors of production (i.e. inputs, raw material etc.)
4. Fall in excise duty.
5. Rise in subsidies.
6. Increase in number of firms in the market.
7. Change in goal of producer from profit maximization to sales maximization,
8. Improvement in business expectation promoting higher investment.

Explanation –

Schedule –

PRICE OF GOOD (P_x)	QUANTITY SUPPLIED (S_x)

DECREASE IN SUPPLY

Reasons –

1. Increase in price of other related good
2. Rise of obsolete technology.
3. Increase in cost of factors of production.
4. Rise in excise duty.
5. Fall in subsidy.
6. Decrease in number of firms in the market.
7. Change in goal of producer from sales maximization to profit maximization.
8. Erosion of business expectation promoting a cut in investment.

Explanation –

Schedule –

PRICE OF GOOD (P_x)	QUANTITY SUPPLIED (S_x)

MARKET SUPPLY

Quantities of a commodity that all the firms in a market are willing to sell at different prices during a given period of time are called market supply.

Market supply schedule – It is a tabular presentation showing the quantities of a commodity that all the firms in a market are willing to sell at different prices at a given period of time.

PRICE	Q_s (A)	Q_s (B)	Q_s (C)	MARKET SUPPLY
10	100	80	60	240
9	90	70	50	210
8	80	60	40	180
7	70	50	30	150
6	60	40	20	120

A, B, C are individual producers (firm)

Market supply curve – It is a graphical representation showing the quantities of a commodity that all the firms in a market are willing to sell at different prices at a given period of time. Graphically, it is the “**horizontal summation**” of all individual supply curve.

PRICE ELASTICITY OF SUPPLY (DEGREES)

1. **Perfectly Inelastic** ($E_s = 0$): It means that quantity supplied does not change at all with the change in price. In this case, supply curve is **parallel to** _____.
2. **Perfectly elastic** ($E_s = \infty$): It means that the supply changes without any change in price. In this case, supply curve is **parallel to** _____.
3. **Less than elastic (inelastic)** ($E_s < 1$): It means that % change in supply is less than % change in its price. In this case the **supply curve is** _____.
4. **More than elastic (elastic)** ($E_s > 1$): It means that % change in supply is more than the % change in price. In this case **supply curve is** _____.
5. **Unitary elastic (unit elastic)** ($E_s = 1$): It means that % change in supply is equal to % change in price.

METHODS OF CALCULATING ELASTICITY

1. Proportionate Method (% age method)

$$E_s = \frac{\% \text{ change in quantity supplied}}{\% \text{ change in price}}$$

OR

$$E_s = \frac{\Delta Q}{\Delta P} \times \frac{P_0}{Q_0}$$

$$= \frac{Q_1 - Q_0}{P_1 - P_0} \times \frac{P_0}{Q_0}$$

$$\% \text{ change in } Q = \frac{Q_1 - Q_0}{Q_0} \times 100$$

$$\% \text{ change in } P = \frac{P_1 - P_0}{P_0} \times 100$$

E_s is always **POSITIVE** because price and supply has direct relation

FACTORS AFFECTING ELASTICITY OF SUPPLY

1. Cost of Production – If the expected cost of production **increases** with increase in production then supply will be **inelastic**.
2. Nature of commodity – In case of **durable goods**, elasticity of supply is generally **greater** than 1, whereas in case of non-durable goods (perishable goods) generally elasticity is less than one.
3. Time Period – **Longer** the time period, **higher** will be the elasticity because over a long period of time, factors are easily available.
4. Risk Taking – If the entrepreneur is **willing to take the risk** of higher output, then supply will be more **elastic**.
5. Nature of Input used – If **easily available** inputs are used, then supply will be **elastic** and in case of scarcely available resources, supply will be inelastic.

ELASTICITY OF SUPPLY:

1. If price elasticity of supply of a commodity is 5. A producer supplies 500 units of this product at a price of Rs. 5 per unit. How much quantity of this product will be supplied, at the price of Rs. 6 per unit?
2. Due to a 10 per cent rise in the price of a commodity, its quantity supplied rises from 400 units to 450 units. Calculate its price elasticity of supply. Is the supply elastic?
3. The quantity supplied of a commodity at a price of Rs. 8 per unit is 400 units. Its price elasticity of supply is 2. Calculate the new price at which its quantity supplied will be 600 units?
4. When the price of a commodity rises from Rs.10 to Rs.12 per unit, its quantity supplied rises by 100 units. If $e_s = 2$, Calculate its quantity supplied at increased price.
5. If $e_s = 3$, A seller supplies 20 units of the commodity at a price of Rs.8 per unit. How much quantity of the commodity will the seller supply when price rises by Rs.2 per unit?

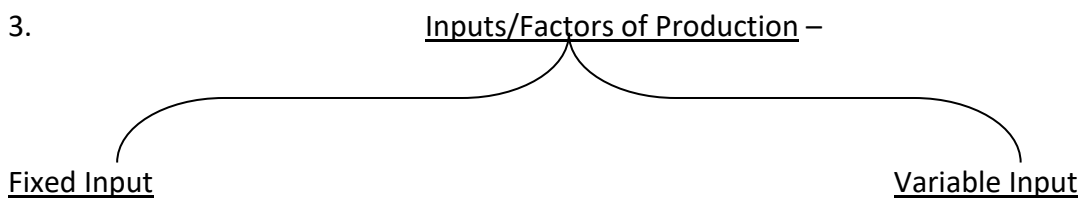
PRODUCTION

1. Production is a process of transformation of inputs into outputs.



2. Production Function – It is a **technical relationship** between inputs and outputs i.e.

$Q = f(I_1, I_2, I_3, \dots, I_n)$ Here, Q = Output and I_1, I_2, I_3, \dots are Inputs.



4. Types of Production function –

- (a) **Very short run production function:** It refers to a production function in which producer is unable to change any factor of production i.e. **all factors are fixed**. As a result, the output cannot be changed.
- (b) **Short run production function:** It refers to the production function in which one factor is variable (which can be changed). In short run, production can only be increased when **more units of variable factors** are employed.
- (c) **Long run production function:** It refers to the production function which all the factors are variable and there are **no fixed factors**.

5. Production Concepts –

(a) **Total product (TP)/ Total physical product (TPP)**: It is defined by the firm within the given inputs during a specified period of time.

(b) **Average product (AP)/ Average physical product (APP)**: It is defined as amount of output produced per unit of variable input.

$$AP = \frac{TP}{N}$$

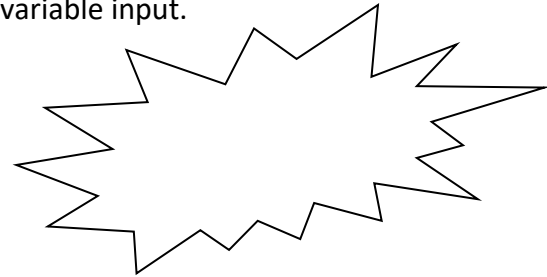
Here, N = No. of variable input.

(c) **Marginal product (MP)/ Marginal physical product (MPP)**: It is defined as change in total product resulting from change in variable input.

$$MP = \frac{\Delta TP}{\Delta N}$$

OR,

$$MP_n = TP_n - TP_{n-1}$$



Stages of Production:

1. STAGE 1 –

2. STAGE 2 –

3. STAGE 3 –

Relationship between TP and MP

Relationship between AP and MP

- 1.
- 2.
- 3.

Assumptions of this law –

1. Only one input is variable i.e. labour.
 2. All other factors are fixed.
 3. All the units of variable factors are ***equally efficient***.
 4. Technique of production does not change.
 5. It is possible to combine more and more units of variable factors with the given units of fixed factors.
- In terms of TP - This law states that

 - In terms of MP – This law states that

STAGE 1 – INCREASING RETURNS TO FACTOR

In this stage, TP increases at increasing rate, MP also increases and reaches its maximum.

Reason for operation of this law-

- (a) **Optimum combination** of inputs along with full utilization of fixed inputs.
- (b) Division of labour through **specialization**.
- (c) Volume (Bulk) discount

STAGE 2 – DIMINISHING RETURNS TO FACTOR

In this stage TP increases at diminishing rate, reaches its maximum. Every producer tries to operate in this stage. Also, in this stage, MP falls but remains positive.

Reason for operation of this law-

- (a) **Efficiency starts declining** when more variable inputs are employed beyond the optimum capacity.
- (b) Lack of perfect substitution between fixed inputs and variable inputs.

STAGE 3 – NEGATIVE RETURNS TO FACTOR

In this stage, TP starts falling and MP becomes negative.

Reasons for operation of this law-

- (a) **Poor coordination** between fixed and variable factors
- (b) **Decrease in efficiency** of variable factor.

LONG RUN

In long run, since all the factors of production are variable, therefore a firm can employ larger quantities of both inputs (Capital and Labour) to increase the production.

In long run, the relationship between inputs and outputs is explained under ***law of returns to scale***.

RETURNS TO SCALE

It means the manner of change in physical output caused by the increase in all inputs simultaneously and in same proportion.

Three phases –

(1) Increasing returns to scale :

(2) Constant returns to scale :

(3) Decreasing returns to scale :

COST

Cost is the function of output i.e. $C = f(Q)$

Cost in Economics (Economic Cost) =

1. Explicit cost :

2. Implicit cost:

COST CONCEPTS

1. Total Fixed cost (TFC): These costs do not change with the level of output i.e. they remain constant.

For example – Rent, depreciation, interest, salaries of permanent staff, telephone bill (minimum), electricity bill (minimum), insurance premium.

2. Total variable cost (TVC): It refers to the cost which changes with the level of output. These costs are not incurred at 0 level of output. Example – Raw material, transportation, wages of casual labour, telephone bill beyond minimum.

3. Total cost (TC): It is the summation of fixed cost and variable cost.

$$TC = TFC + TVC$$

Relationship between TVC, TFC and TC

- At zero level of output $TVC = 0$ and $TC = TFC$.
- As the output increases TC also increases due to increase in TVC.
- TC and TVC never intersect each other i.e. they are parallel to each other because the difference between TC and TVC is TFC which is always constant.

4. Average fixed cost (AFC): It is the per unit fixed cost of production

$$AFC = \frac{TFC}{\text{Output}}$$

5. Average variable cost (AVC) – It is the per unit variable cost of production.

$$AVC = \frac{TVC}{\text{Output}}$$

6. Average cost (AC) / Average Total cost (ATC) : It is per unit of total cost of production

$$\text{i.e. AC} = \frac{TC}{\text{Output}}$$

Therefore

AC =

7. Marginal cost (MC) – It is the addition to the total variable cost or total cost when one more unit of output is produced.

$$MC = \frac{\Delta TVC}{\Delta \text{Output}} \quad \text{OR} \quad \frac{\Delta TC}{\Delta \text{Output}}$$

$$MC_N = TVC_N - TVC_{N-1} \quad \text{OR} \quad TC_N - TC_{N-1}$$

- 1.
- 2.
- 3.

Relationship between AC & MC

1. At all level of output when $MC < AC$, then _____.
2. When $MC = AC$, then AC is _____.
3. At all levels of output when $MC > AC$, then _____.

Relationship between MC and TC

1. When MC is falling, TC increases at diminishing rate.
2. When MC is minimum, TC stops increasing at diminishing rate (i.e. point of inflexion).
3. When MC is rising, TC increases at increasing rate.

$$\text{Mathematically, } MC = \frac{\Delta TC}{\Delta \text{Output}}$$

OR

$$MC_n = TC_n - TC_{n-1}$$

Relationship between MC and TVC

1. When MC is falling, TVC increases at diminishing rate.
2. When MC is minimum, TVC stops increasing at diminishing rate (i.e. point of inflexion).
3. When MC is rising, TVC increases at increasing rate.

$$\text{Mathematically, } MC = \frac{\Delta TVC}{\Delta \text{Output}}$$

$$\Delta \text{Output}$$

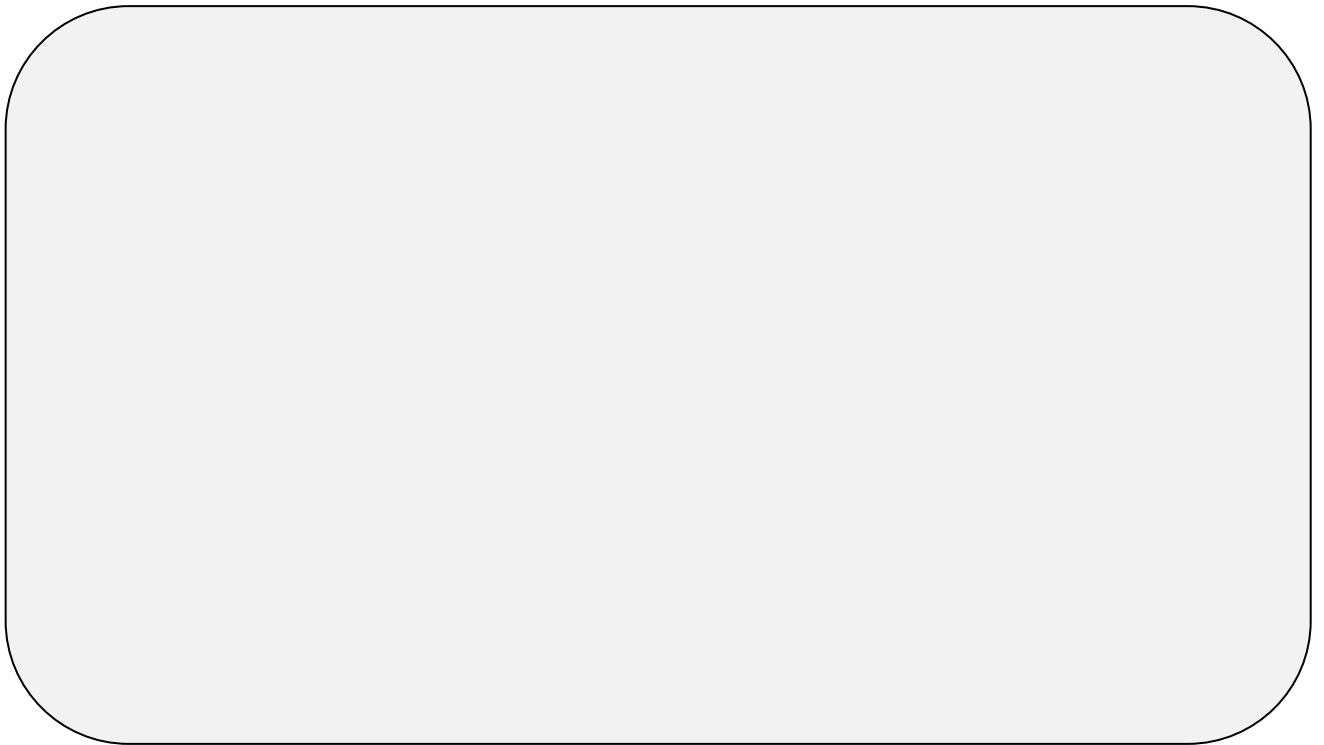
OR

$$MC_n = TVC_n - TVC_{n-1}$$

RELATIONSHIP BETWEEN AC , AVC and AFC

Explain why minimum of AVC is left to the minimum of AC ?

SUMMARY (FORMULAE)



Cost Numericals

Q1 :- Draw short run Marginal cost, Average variable cost and Average cost curves on single diagram.

Q2 :- Answer the following :

1. What is the total cost of production of 20 units if fixed cost is Rs. 500 and variable cost is Rs. 2.
2. A firm producing 7 units of output has an average total cost of Rs. 150 and has to pay Rs. 350 to its fixed factors of productions. How much of the average total cost is made up of variable cost.

3. <u>Units</u>	<u>TC</u>	<u>MC</u>
2	80	40
4	—	30

4. A firm's AFC is Rs. 200 at 10 units of output. What will be it at 20 units of output.

Q3 :- State *true or false* :

1. As the output is increased, the difference between average total cost and average variable cost falls and ultimately becomes zero.
2. Average cost falls only when marginal cost falls.
3. Average variable cost can fall even when marginal cost is rising.
4. The difference between average total cost and average variable cost is constant.
5. As soon as marginal cost starts rising, average variable cost also starts rising.

Q4 :- A firm's marginal cost schedule is given with total fixed cost is Rs. 100. Find TVC, TC, AVC, and SAC

Output	0	1	2	3	4	5	6
SMC	-	500	300	200	300	500	800

Q5 :- Given the average fixed cost at 4 units of output is Rs. 5. Find TVC, TFC, AVC, AFC, SAC and SMC

Output	1	2	3	4	5	6
TC	50	65	75	95	130	185

Q6 :- Complete the following table :

Output	TVC	AVC	MC
1	-	12	-
2	20	-	-
3	-	10	10
4	40	-	-

Q7 :- The average fixed cost of a firm is Rs. 20 when it produces 3 units. Find SMC and ATC

Output	1	2	3
AVC	30	28	32

Q8 :- Complete the following table :

Output	AVC	TC	MC
1	-	60	20
2	18	-	-
3	-	-	18
4	20	120	-
5	22	-	-

Q9 :- Complete the following table :

Output	TVC	AVC	MC
1	10	-	-
2	-	8	6
3	27	-	-
4	-	10	13

Q10 :- Calculate TC and AVC from given schedule

Output	1	2	3	4	5	6
AFC				15		
MC	32	30	28	30	35	43

REVENUE

1. Total Revenue (TR) : It is the total money receipt from sale of total output.

$$TR = P \times Q$$

P = price per unit

Q = quantity of output

2. Average Revenue (AR) : It is the revenue per unit of output

$$AR = \frac{TR}{Q}$$



AR curve is also

3. Marginal Revenue (MR) : It is the addition to total revenue from sale of one additional unit of output.

$$MR_n = TR_n - TR_{n-1} \quad \text{OR}$$

$$MR = \frac{\Delta TR}{\Delta \text{Output}}$$

Relationship between TR & MR

CASE I: Perfect Market (Competitive market) - PRICE IS CONSTANT

PRICE	OUTPUT	TR	MR
10	1		
10	2		
10	3		
10	4		

1. In this market
2. In this market firm is price taker.
3. In this market TR

CASE II: Imperfect market (Non-competitive market) - PRICE IS NOT CONSTANT

PRICE	OUTPUT	TR	MR
10	1		
9	2		
8	3		
7	4		
6	5		
5	6		
4	7		
3	8		

- 1.
- 2.
- 3.

General Relationship between AR & MR

1. It is the MR curve which pulls AR upward or downward.
2. When $MR > AR$, then AR rises.
3. When $MR = AR$, then AR is maximum.
4. When $MR < AR$, then AR falls.

Relationship between AR & MR

CASE I: Perfect Competition (Competitive market) : PRICE IS CONSTANT

PRICE	OUTPUT	TR	AR	MR
10	1			
10	2			
10	3			
10	4			
10	5			

- 1.
- 2.
- 3.

CASE II: Imperfect Competition (Non-competitive market) : PRICE IS NOT CONSTANT

PRICE	OUTPUT	TR	AR	MR	
10	1				
9	2				
8	3				
7	4				

1.

2.

3.

4.

BREAK EVEN POINT (_____)

1. It refers to the point when $TC = TR$ i.e. point where firm is able to meet **ALL** its cost.
2. It is also known as ***point of Normal Profit***.

SHUTDOWN POINT

Point where $TR = TVC$

Or $AR = AVC$

i.e. point where firm is able to cover its VARIABLE COST ONLY.

PRODUCERS EQUILIBRIUM (Profit Maximization)

1. Producer's equilibrium – It is that level of output at which producer's profit is maximum and there is no tendency for him to change the output. It is also known as profit maximization level of output.
2. Profit – It is defined as excess of revenue over cost i.e. $\text{Profit} = \text{TR} - \text{TC}$

$$\text{Gross Profit} = \text{TR} - \text{TVC}$$

MR – MC Approach (Equilibrium conditions)

1. $\text{MR} = \text{MC}$
2. MC should cut MR from below (i.e. MC should be rising after intersection) or $\text{MC} > \text{MR}$ after intersecting MR.

At point A,

Condition (1) is satisfied but condition (2) is not satisfied.

But at point B, both the condition are satisfied i.e.

- (a) $\text{MR} = \text{MC}$
- (b) MC rises after intersection.

Therefore, Q_2 is the producer's equilibrium level of output.

OUTPUT	TC	MR	MC

Point B is producer's equilibrium point. Explain why?

OR

MC should be rising ($MC > MR$) after the point of intersection. Comment.

1. In the above diagram point A is not equilibrium point because producer can add more to his revenue by producing beyond Q_1 , i.e. the producer is able to add to his profit by increasing the production beyond Q_1 .
2. Point B is the profit maximum level of output or producer's equilibrium point because if he increases the production beyond Q_2 , it will add more to his cost resulting in losses.
3. Thus point B is the producers equilibrium point, thus MC should be rising after the point of producer's equilibrium.

If $MC > MR$ at particular level of output than how will the producer react?

The producer will decrease the production to maximize his profit and eliminate the losses. Reduction in production will be done till he reaches the equilibrium where $MC = MR$.

If $MC < MR$ at particular level of output then how will the producer react?

The producer will increase the production to maximize his profit. Increase in production will be done till he reached the equilibrium point where $MC = MR$.

Explain producer's equilibrium under imperfect market?

Very Short Answer Type Questions (1 Mark)

1. **Define production function.**
Ans. Diminishing return to a factor
2. **Define marginal product.**
Ans. Marginal product is net addition to total product when one additional unit of variable factor is used.
3. **What will be the behavior of total product when marginal product of variable input is falling but is positive?**
Ans. Total product increases at diminishing rate.
4. **What is the relation between average and marginal product when average product is falling?**
Ans. MP falls but it falls at faster rate than AP
5. **Define average production.**
Ans. AP is a per unit output of a variable factor.
6. **What do you mean by fixed factors of production? Give example.**
Ans. These factors of production which cannot be varied in short period e.g. machine, land.
7. **By which behaviour of marginal product will total product be maximum**
Ans. When marginal product of a factor is zero, then total product will be maximum.
8. **How does fall in total product affects marginal product?**
Ans. When total product falls, marginal product becomes negative.
9. **What do you mean by cost?**
Ans. Cost is the sum of explicit and implicit cost.
10. **Define explicit costs.**
Ans. Those monetary payments by producer on factor and non factor payments is called explicit cost. Which are not owned by himself.
11. **Which cost curve is parallel to ox-axis? Why?**
Ans. Total fixed cost because TFC remain constant at all level of output.
12. **What do you mean by implicit costs?**
Ans. Implicit cost is the cost of self owned resources of producer.
13. **Define marginal cost.**
Ans. Marginal cost is the net addition to total cost when one additional unit of output is produced.
14. **Why does the difference between average total cost and average variable cost falls with increase in output?**
Ans. It is because average fixed cost goes on falling with increase in output.
15. **Define Revenue.**
Ans. Revenue is the amount received from sale of output.
16. **At what rate average and marginal revenue falls, with fall in per unit price of a good?**
Ans. Marginal revenue falls twice the rate of average revenue.
17. **What will be the behaviour of Average revenue when total revenue increases at constant rate?**
Ans. Average revenue remains constant.
18. **What do you mean by marginal revenue?**
Ans. Marginal revenue is net additions to total revenue by sale of one additional unit of output.

19. **What will be the behaviour of total revenue when marginal revenue is zero?**
Ans. Total revenue will be maximum.
20. **Why does average cost curve and averages variable cost curve never intersect each other?**
Ans. Because AFC can never be zero at any level of output.
21. **What do you mean by producer's equilibrium?**
Ans. Producer's equilibrium is a situation where he gets maximum profit.
22. **State any two conditions of producers equilibrium according to marginal revenue and marginal cost approach.**
Ans. 1. $MR = MC$
 2. Rising portion of Marginal cost curve intersects marginal revenue curve.
23. **Define supply.**
Ans. Supply refers to the amount of the commodity that a firm or seller is willing to offer for sale in a given period of time at various prices.
24. **What do you mean by individual supply schedule?**
Ans. Individual supply schedule is a tabular representation showing various quantities of a commodity which a firm is ready to sell at different prices during a given period of time.
25. **Define Market Supply**
Ans. It refers the sum of total quantity supplied by all the firms in a market.
26. **Name two determinants of supply.**
Ans. 1. Number of firms
 2. Change in technology
27. **What is meant by change in supply?**
Ans. Change in supply refers to increase or decrease in supply of a commodity due to change in factors other than price like technology, price of inputs, Goal of producer, Number of firms etc.
28. **What type of change in price is the cause of upward movement along a supply curve?**
Ans. Due to increase in price.
29. **What effect does an increase in tax rates have on supply of a commodity?**
Ans. As a result of increase in tax rates production cost increase, so the profit margin of producer will fall and producer will decrease the supply.
30. **What causes a downward movement along a supply curve?**
Ans. Decrease in price.
31. **What is meant by leftward shift of supply curve?**
Ans. Due to change in other factors the supply of a commodity falls at same price than supply curve shifted to leftward.
32. **How does a decrease in price of input effect supply curve of the commodity?**
Ans. As a result of decrease in price of input production cost falls then producers profit margin will increase so producer will increase the supply of commodity.
33. **Why does a supply curve have a positive slope?**
Ans. Because of positive relation between price and supply.
34. **What is meant by elasticity of supply?**
Ans. Price Elasticity of Supply (E_s) is a measure of degree of response of supply for a good to change in its price.

35. **What is the price elasticity of supply, if supply curve is parallel to y-axis.**
Ans. Perfectly elastic.
36. **When does the elasticity of supply of commodity called equal to unity?**
Ans. When percentage change in price is equal to percentage change in supply.
37. **When does the producer increase the supply of a good at given price, give two reasons.**
Ans. Due to change in other factor like improvement in technology, decrease in price of inputs.
38. **What causes an extension in supply?**
Ans. Increase in price of a commodity.
39. **If the price of a commodity falls by 10% and, consequently, the quantity supplied decreases by 20%. What will be its price elasticity of supply?**
Ans.
$$E_s = \frac{\% \text{change in quantity}}{\% \text{change in price}} = \frac{20\%}{10\%} = 2$$
40. **What happens to TP when MP is zero?**
Ans. TP is maximum.
41. **What happens to MPP when TPP increases at decreasing rate?**
Ans. MPP falls but remains positive.
42. **As the variable input is increased by one unit, total output falls. What would you say about of marginal productivity labour?**
Ans. Marginal productivity of labour is negative.
43. **Why MC curve is in short run U-shaped?**
Ans. MC Curve in short run is U-shaped due to operation of the law of returns to a factor.
44. **Why does fixed cost not influence marginal cost?**
Ans. Because marginal cost does not include fixed cost.
45. **When a seller sells his entire output at a fixed price, what will be the shape of AR & MR curves?**
Ans. Both AR & MR are equal and coincide with each other on a horizontal line.
46. **Show that average revenue equals price.**
Ans.
$$AR = \frac{TR}{Q} = \frac{P \times Q}{Q} = P = \text{Price}$$
47. **What effect does a cost saving technical progress have on the supply curve?**
Ans. Supply curve will shift to the right.
48. **What effect does an increase in excise tax have on the supply curve?**
Ans. Supply curve will shift to the left.
49. **What happens to TPP when marginal productivity of variable input is negative?**
Ans. TPP falls.
50. **When is TPP maximum in relation to MPP?**
Ans. When MPP is zero.
51. **What happens to MPP when TPP is declining?**
Ans. MPP declines and remains negative.
52. **How does fall in MPP affect TPP?**
Ans. TPP increases at decreasing rate.

53. **What effect does an increase in input price have on the supply curve?**
Ans. The supply curve will shift towards left-hand side.
54. **Why does average cost fall as output rises?**
Ans. AC falls due to operation of the law of increasing returns to a factor as output rises.
55. **Does fixed cost affect marginal cost? Give the answer with reason.**
Ans. No, because fixed cost is not subject to change and it is not considered while calculating MC.
56. **What would be the effect of increase in the output on the TFC?**
Ans. There would not be any effect of increase in the output on the TFC, It will be constant at different levels of production.
57. **If marginal revenue falls, will total revenue fall?**
Ans. It may fall when MR falls and becomes negative. If MR falls but remains positive then TR may increase with diminishing rate.
58. **What is the price elasticity of supply of a commodity whose straight line supply curve passes through the origin forming an angle of 75°?**
Ans. Price elasticity of supply will be equal to one when a straight line supply curve passes through the origin; angle does not matter anything.

Short Answer Type Questions(3-4 Marks)

1. **Explain the likely behaviour of total product under the stage of increasing return to a factor with the help of numerical example.**

Ans. Increasing return to a factor is the first phase of the Law of return to a factor. When more and more units of a variable factor is combined with fixed factor up to a certain level total physical product increases with increasing rate.

Machine	Unit of labour	Total physical product
1	1	10
1	2	24
1	3	42

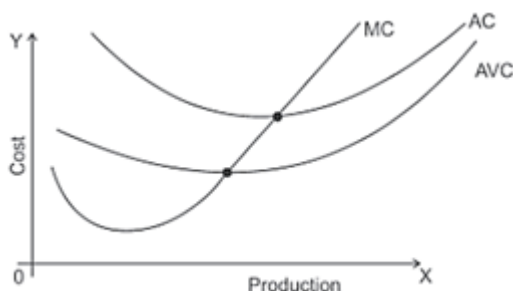
2. **With the help of example distinguish between total fixed cost and total variable cost.**

Ans.

Total fixed cost	Total variable cost
1. Fixed cost remains constant at each level of output ie it do not change with change in quantity.	1. variable cost changes with the change in quantity. It increase or decrease as the output change.
2. It can not be zero when output is zero.	2. it is zero when output is zero
3. Its curve is parallel to X-axis	3. Its curve is parallel to the curve of total cost.
4. Example :- Rent, wages of permanent staff.	4. Example :- cost of raw material, wages of casual labour.

3. **Draw average cost, average variable cost and marginal cost curves on a single diagram and explain their relations.**

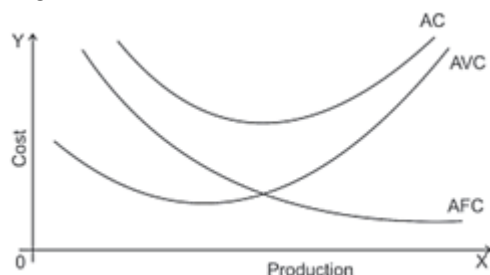
Ans.



Relation of AC, AVC and MC

1. MC intersects to AC and AVC at their minimum level
 2. AC and AVC decreases before the intersection by MC, but remain greater than MC.
 3. AC and AVC starts to increase after the intersection by MC, and becomes less than MC.
 4. As output increases, AC and AVC tends to be closer but the difference between AC and AVC can never be zero.
4. **Draw average cost, average variable cost and average fixed cost curves on a single diagram and explain their relation.**

Ans.



1. AC is the vertical summation of AVC and AFC
 2. The difference between AC and AVC falls as output increases but the difference of AC and AFC increases.
 3. As output increases AC and AVC tends to be closer but their curves do not intersect each other because AFC always remains more than zero.
5. **Explain the relation between average revenue and marginal revenue when a firm can sell an additional unit or a good by lowering the price.**

Ans.

1. AR and MR both decreases.
 2. MR decrease at the rate of twice than AR.
 3. MR become zero and negative but AR can never be zero.
6. **Distinguish between change in quantity supplied and change in supply.**

Ans.

Change in quantity supplied	change in supply
1. It refers the change in supply due to change in price of the good.	1. It refer's the change in supply due to the change in the determinents of supply other than price.
2. Determinents of supply other than price remains unchanged.	2. Price of the good remains unchanged.
3. Law of supply apply.	3. Law of supply does not apply.

4. There is upward and downward movement along with supply curve in this situation.	4. supply curve shifted to leftward or rightward under this condition.
-------------------------------------------------------------------------------------	------------------------------------------------------------------------

7. **Explain how does change in price of input affect the supply of a good.**

Ans.

- A. **Increase in price of input** : increase in price of input is cause of a decrease in the supply of a good because the production cost of a good will increase due to increase in price of input. It will reduced the profit. So producer will decrease the supply of the good.
- B. **Decrease in price of Input** : Decrease in price of input is a cause of increase in supply because when the price of input decrease the production cost of a good also also decreases. Decrease in cost increases the profit margin. It motivate to producer to increase the supply of the good.

8. **Explain how changes in prices of other products influence the supply of a given product.**

Ans. The supply of a good is inversly influenced with the change in price of other product which can explain as fallows.

- A. **Rise in price of other product** :— When there is rise in the price of other product the production of these product become more profitable due to unchanged cost in comparison of the production of given produce. As a result the producer will produce more quantity of other product so the supply of given good will decrease.
- B. **Fall in the price of other product** :— When there is fall in the price of other product the production of these product become less profitable due to unchanged cost in comparison of the production of given product. As a result producer will produce less quantity of other product so the factors of production shifted for the production of given good. It cause an increase in supply of given good.

9. **Explain how technological advancement influence the supply of a given product.**

Ans. Technological advancement brings a positive impact in the supply of a given product. It reduces per unit cost and increase the productivity of given factors of production. Due to these reasons production of given product becomes more profitable.

10. **Explain the law of variable proportion with the help of diagram schedule.**

OR

What is the likely behaviour of total product/marginal product when only one input is increased for increasing production? Use diagram/ schedule.

Ans. Law of variable proportion state the impact of change in unit of a variable factor on the physical output. When more and more unit of a variable factor combined with fixed factor physical product passes though following phases.

Behaviour of TP

- (i) TP increases at an increasing rate
- (ii) TP increases at diminishing rate
- (iii) TP falls

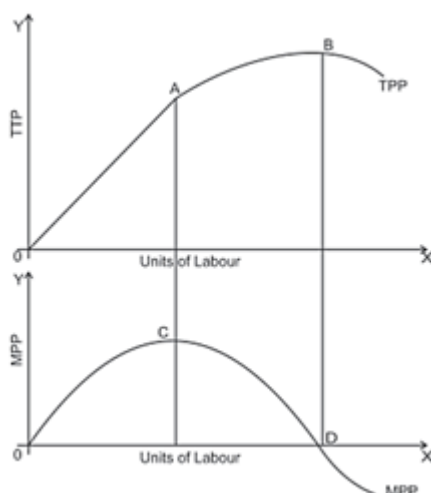
Behaviour of MP

- (i) MP increases and becomes maximum.

(ii) MP decreases and becomes zero.

(iii) MP becomes negative.

Machine	Unit of labour	TPP	MPP
1	1	3	3
1	2	7	4
1	3	12	5
1	4	16	4
1	5	19	3
1	6	21	2
1	7	22	1
1	8	22	0
1	9	21	-1



First Phase :— TPP increases with increasing rate upto A point. MPP also increase and becomes maximum of point C.

Second Phase :— TPP increases with diminishing rate and it is maximum on point B. MPP start to decline and becomes zero at D point.

Third Phase :— TPP starts to decline and MPP becomes negative.

11. What is producer's equilibrium? Explain the conditions of produce's equilibrium through the 'marginal cast and marginal revenue' approach. use diagram/schedule.

Ans. Producer's equilibrium refer's the stage under which with the help of given factor's of production producer attain that level of production of which he is getting maximum profit. The conditions of producer's equilibrium through the marginal cost and marginal revenue approach are as follows.

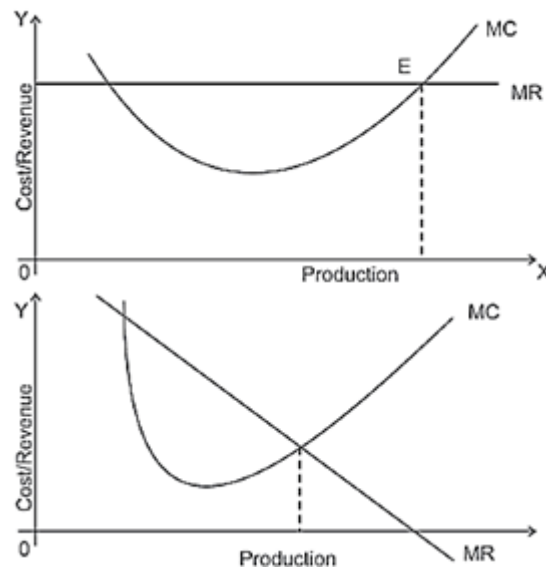
1. Marginal cost should be equal to marginal revenue.
2. With the increase in output after equilibrium marginal cost should be greater than marginal revenue.

Output	MR	MC
1	4	5
2	4	4
3	4	3

4	4	4
5	4	5

OR

Output	MR	MC
1	10	5
2	8	4
3	6	3
4	4	4
5	2	5



Explanation of conditions :-

- So long as MC is less than MR, it is profitable for the producer to go on producing more because it adds to its profits. He stops producing more when MC becomes equal to MR.
- When MC is greater than MR after equilibrium it means the profit will decline if producer will produce more units of the good.

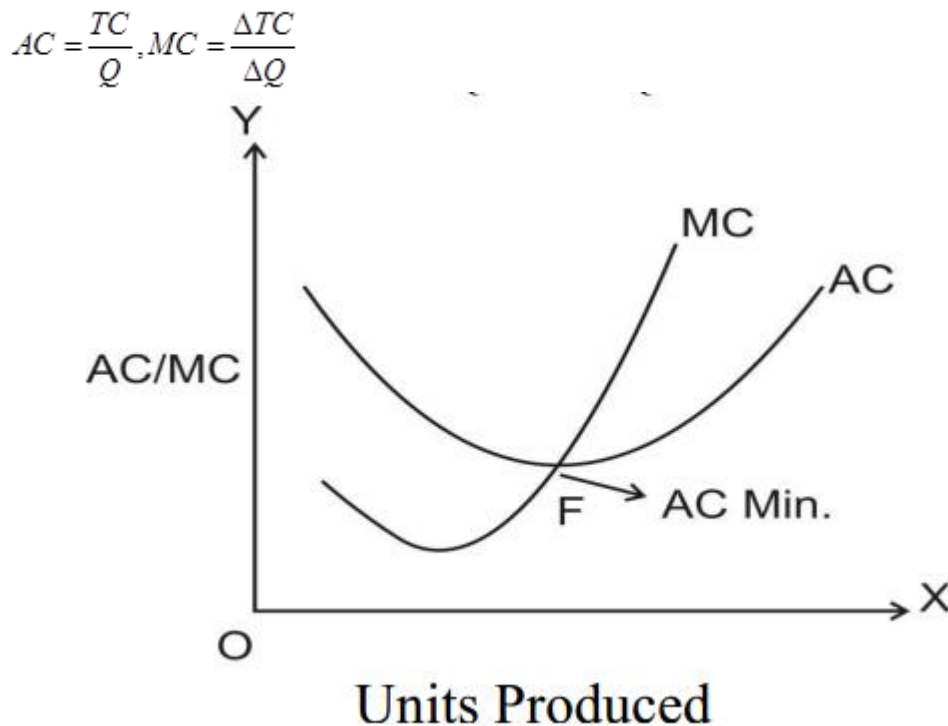
12. What are the factors which give rise to increasing returns to variable factors?

Ans.

- Fuller utilization of the fixed factors- Generally fixed factors are indivisible and underutilized. With greater application of variable factor these factors are better utilized its MPP tends to rise.
- Increased efficiency of variable factor- Application of specialization and division of labour among the units of variable factors leads to greater efficiency and increase in MPP.

13. Explain the relationship between AC & MC with diagram.

- Ans.** (i) When $MC < AC$, AC falls.
(ii) When $MC = AC$, AC is minimum.
(iii) When $MC > AC$, AC rises.
(iv) MC falls & rises faster than AC.
(v) Both can be obtained from TC.



14. Why is AC curve in the short run U-shaped?

Ans. AC curve is U-shaped in short run due to operation of law of returns to factors (i.e., law of variable proportion). Initially production is subject to law of increasing returns (i.e. decreasing cost), then law of constant return (i.e. constant cost) and ultimately to law of diminishing return (i.e. increasing cost). As output is increased, AC first falls, reaches its minimum and then rises. Hence, AC curves become U-shaped.

15. How do changes in MR affect TR?

Ans.

1. If MR increases, TR increases at increasing rate.
2. If MR is constant, TR increases at constant rate.
3. If MR falls, TR increases at diminishing rate.

16. What is MR? How is it related to AR?

Ans. MR refers to the change in TR due to sale of an additional unit.

Relation –

1. If AR (Price) is constant, $MR = AR$
2. If AR (Price) falls, $MR < AR$.
3. If AR (Price) rises, $MR > AR$.

17. What will be the price elasticity of supply if the supply curve is a positively sloped straight line?

Ans. $E_s = 1$ if the curve starts from the origin point.

$E_s > 1$ if the curve starts from the y-axis and

$E_s < 1$ if the curve starts from the x-axis.

18. Define marginal revenue. State the relation between marginal revenue and average revenue when a firm:

(i) is able to sell more quantity of output at the same price.

(ii) is able to sell more quantity of output only by lowering the price.

Ans. Marginal revenue is the addition to total revenue from producing one more unit of output.

1. $MR = AR$ at all levels of the output. (In case of perfect competitive market)
2. MR will be less than AR at all levels of the output. (In case of monopoly and monopolistic market)

19. Explain how do the following determine price elasticity of supply:

(i) Nature of the good (ii) Time period.

Ans.

1. Nature of Commodity - Elasticity of industrial goods is more than that of agricultural goods. Similarly supply of durable goods e.g. table is more elastic than that of perishable goods e.g. vegetables.
2. Time Period- Generally elasticity of supply is more in the long period than in shorter period of time. The reason is that in the long period, all adjustments to the changed price can be made easily and supply of commodity can be varied accordingly.

Higher Order Thinking Skills

1. Why is total variable cost curve parallel to total cost curve?

Ans. Total cost is the sum of total fixed cost and total variable cost. TFC remains constant at all levels of output.

2. Why does average fixed cost fall with increase in output?

Ans. AFC can be calculated from TFC . Which remains constant at all level of output.

3. Why is total fixed cost curve parallel to ox-axis.

Ans. TFC remains constant at all levels of output.

4. Under which situation will MR fall when an additional quantity of a good is sold?

Ans. When per unit price falls by selling an additional unit of a good.

5. What behaviour of per unit price will cause the equality of average and marginal revenue.

Ans. Per unit price remains constant.

6. Give one differences between law of supply and price elasticity of supply.

Ans. Law of supply reflects the direction of change in supply where as price elasticity of supply measures the magnitude of change in supply.

7. What is the price elasticity of supply associated when the supply curve passing through to intersect to x-axis?

Ans. Inelastic.

8. Why does a producer moves downward along a supply curve due to decrease in price of commodity?

Ans. Because profit margin of firm (producer) decreases.

9. What is the price elasticity of supply associated with when a supply curve passes through the origin at 40° angle?

Ans. Equal to unity elastic.

10. When does the supply curve shift rightward while price remains constant.

Ans. When the supply of commodity increases due to change in other factors.

11. What effect does an increase in price of competitive good have on the supply of a commodity?

Ans. Supply of the commodity will fall.

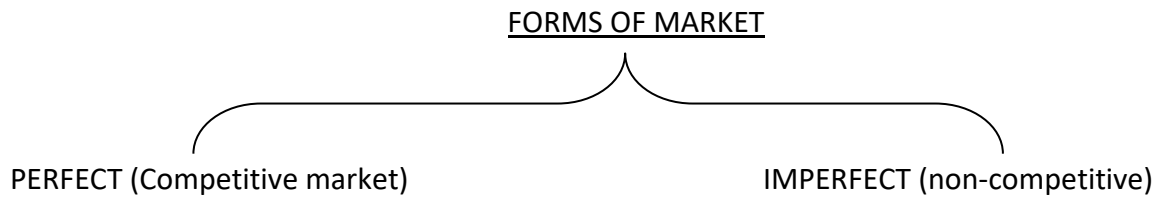
UNIT 4

FORMS OF MARKET

Market is a place where buying and selling of goods take place.

Determinants of market

- 1.
- 2.
- 3.
- 4.



PERFECT MARKET (Example: vegetable market)

1. Definition – It is a market in which there are very large number of buyer and seller. There is a homogeneous product which is selling at a uniform price.



1. Very large number of buyers and sellers

2. Homogeneous product
3. Free entry and exit of firms
4. Perfect Knowledge of Market
5. Perfect mobility of factors of production
6. No advertisement cost/selling cost/additional transportation cost is involved.
7. AR, MR and TR curve
8. Industry is price maker and firm is price taker.

MONOPOLY (Example: Indian Railways)

It is a market in which there is a single firm selling the commodity and there is no close substitute.



1. Single seller
2. Number close substitutes
3. Independent Price Policy
4. Price Discrimination

5. Shape of AR, MR and TR

6. A monopolist can earn abnormal profits i.e. $AR > AC$

7. Restricted or very difficult entry of new firms

MONOPOLISTIC COMPETITION (Example: Soap, Clothes)

It is a market in which large no of sellers sell differentiated products.



1. Large number of sellers

2. Product differentiation

3. High selling cost is involved
4. Free entry and exit of firm
5. AR, MR and TR curve

OLOGOPOLY

It is a market in which few large firms producing homogeneous or heterogeneous products compete against each other and recognize interdependence in their decision making.



1. Few Firms

2. Nature of Product

3. Interdependence of decisions

4. Price Rigidity

5. Barriers in entry of new firms

6. Heavy selling costs are involved

7. Non-Price competition

BASIS	PERFECT	MONOPOLY

BASIS	PERFECT	MONOPOLISTIC

BASIS	PERFECT	OLIGOPOLY

BASIS	MONOPOLISTIC	MONOPOLY

BASIS	MONOPOLISTIC	OLIGOPOLY

BASIS	MONOPOLY	OLIGOPOLY

MARKET EQUILIBRIUM

It is a situation where market demand is equal to the market supply

EQUILIBRIUM PRICE

It is the price where market demand is equal to the market supply

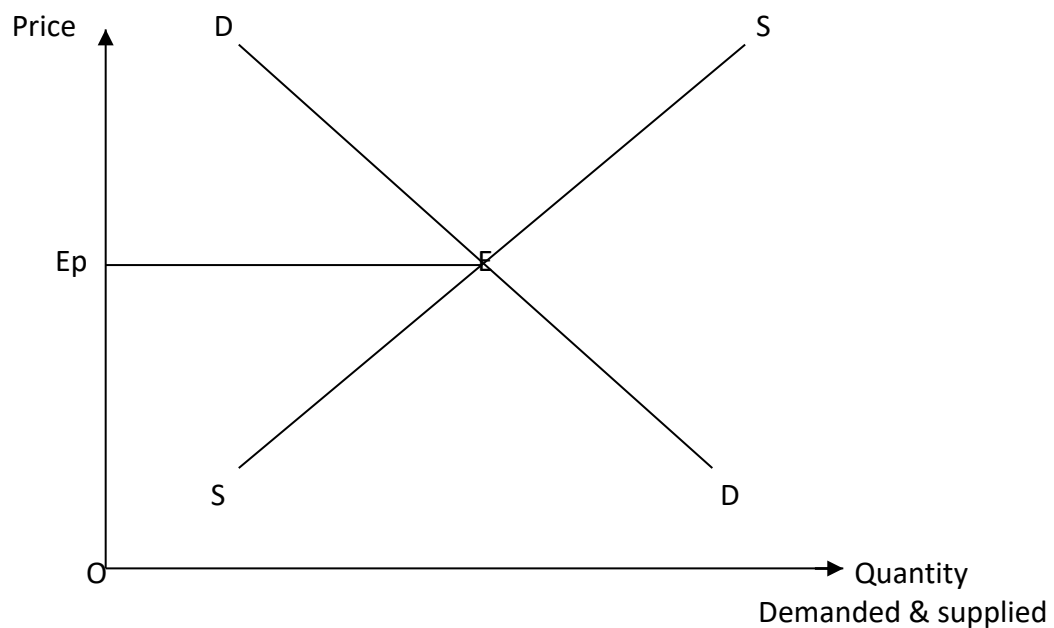
EQUILIBRIUM QUANTITY

It is the quantity of a commodity which is demanded as well as supplied at the equilibrium price

EXCESS DEMAND AND EXCESS SUPPLY

Excess demand means that consumer wants more but producers are willing to supply less.

Excess supply means that consumer wants less but producers are willing to supply more.



When the given price of a commodity is lower than the equilibrium price, then it is a case of _____.

When the given price of a commodity is more than the equilibrium price, then it is a case of _____.

If Price of a commodity is more than Equilibrium price then how will the market react?

OR

What happens when there is excess supply?

If a price of a commodity is more than equilibrium price then there is excess supply. The following changes in the market take place:

If given price of a commodity is less than the equilibrium price, how will the market react?

OR

What happens when there is excess demand?

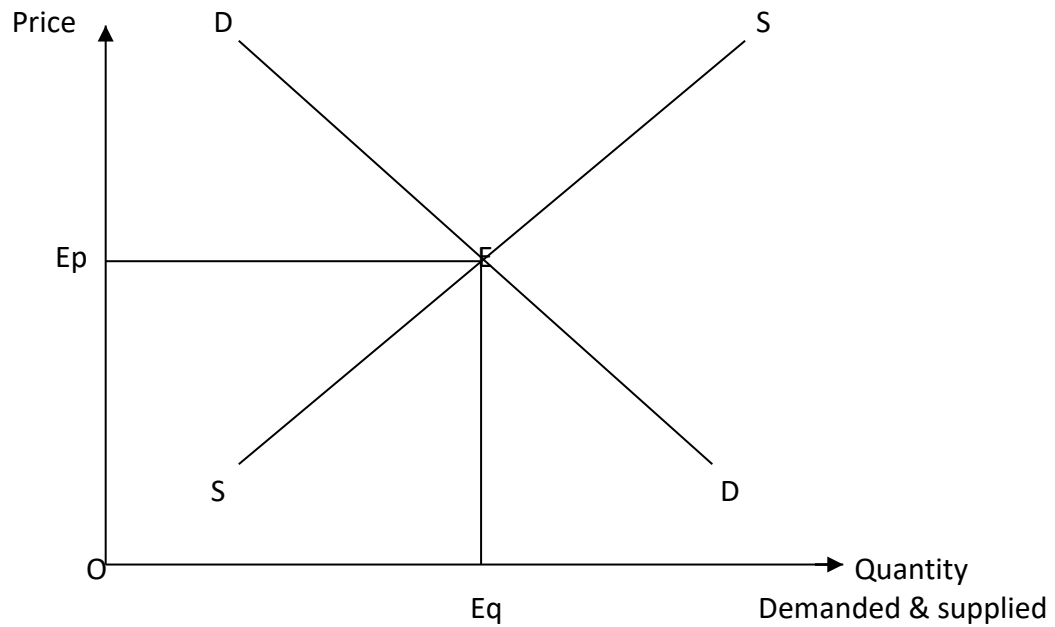
If a price of a commodity is less than equilibrium price then there is . The following changes in the market take place:

- 1.
- 2.
- 3.
- 4.

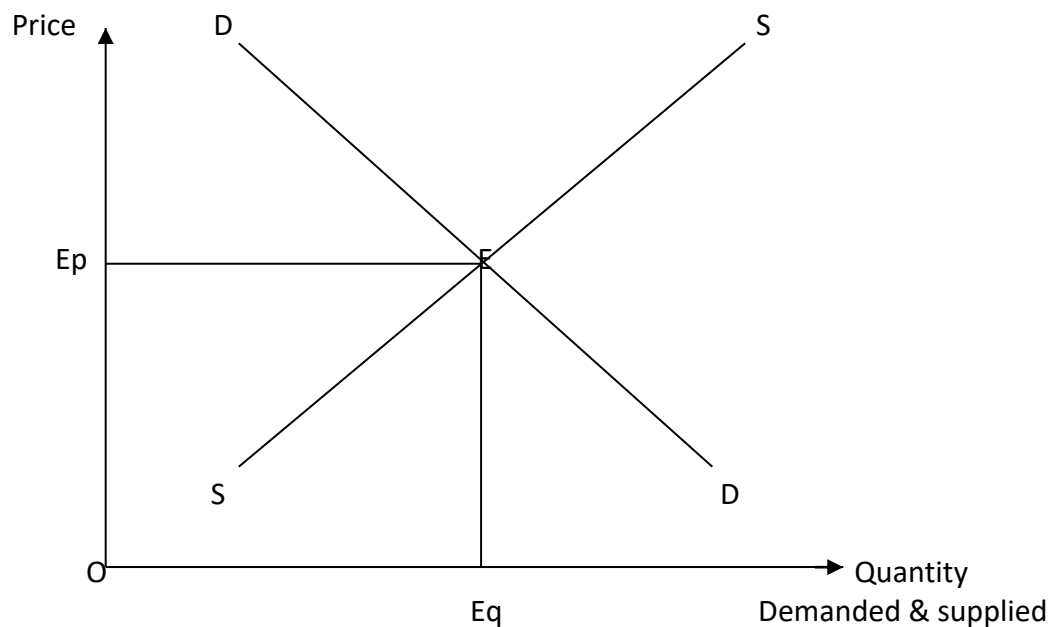
EFFECT OF CHANGE IN DEMAND AND SUPPLY

1. Change in Demand

(A) Increase in demand (Rightwards shift)

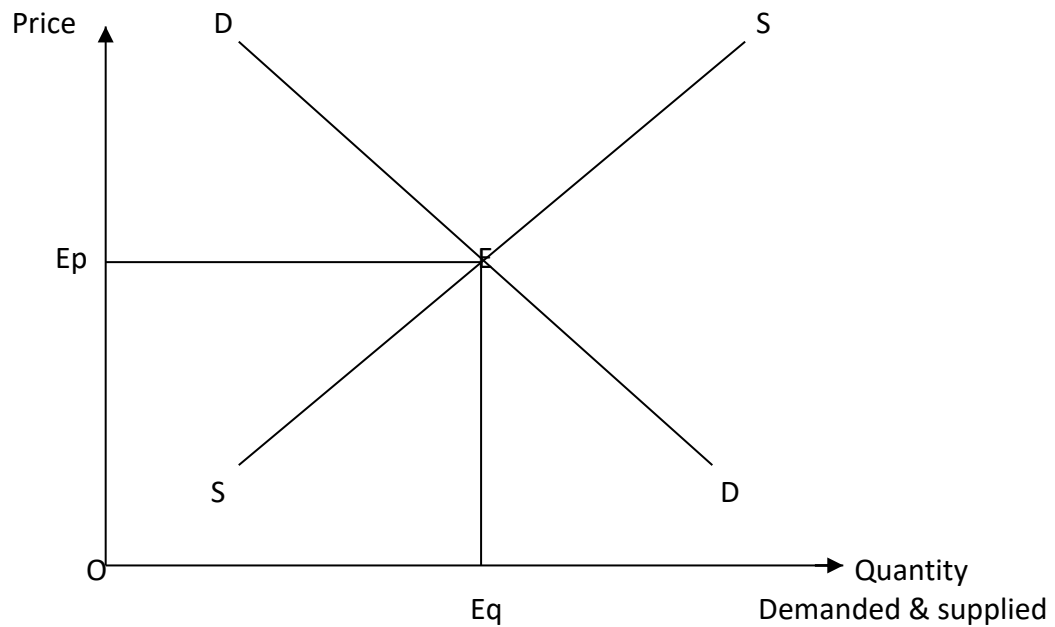


(B) Decrease in demand (Leftwards shift)

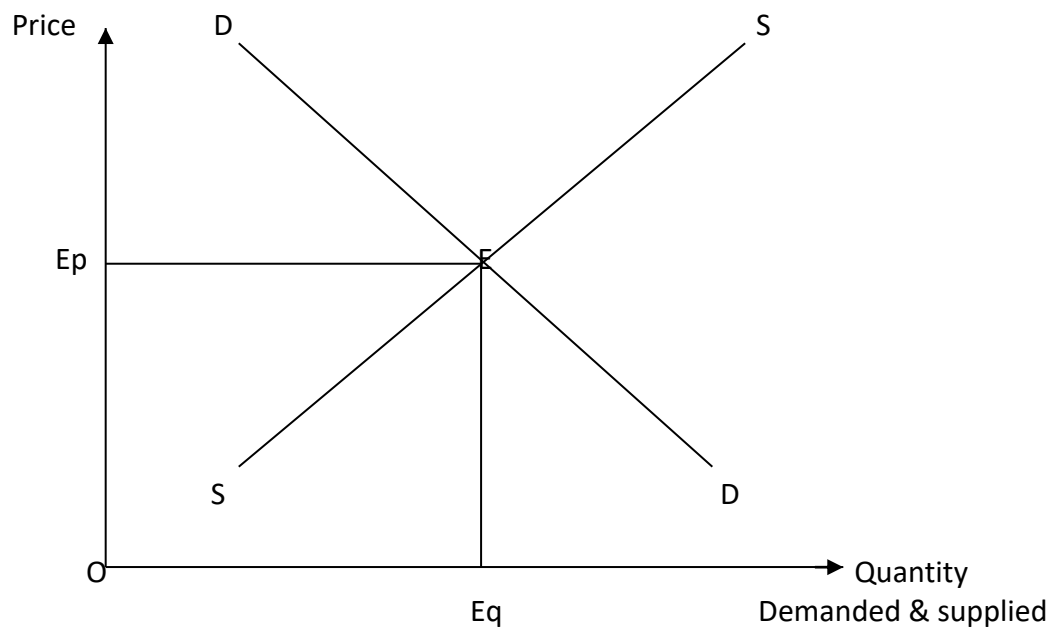


2. Change in Supply

1. Increase in supply (Rightwards shift)



2. Decrease in supply (Leftwards shift)

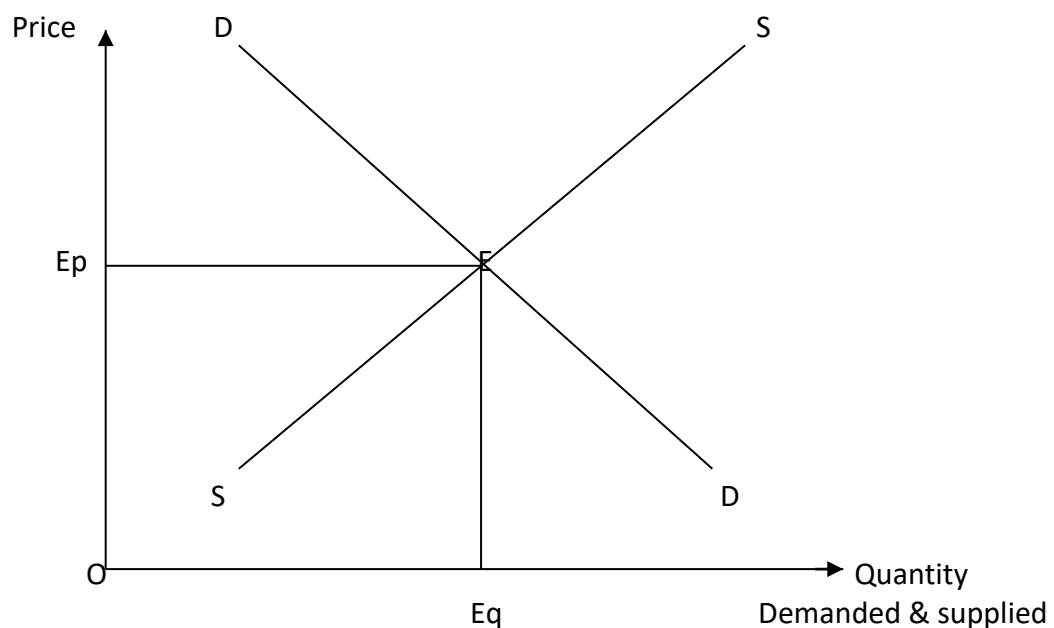


SIMULTANEOUS INCREASE IN DEMAND AND SUPPLY

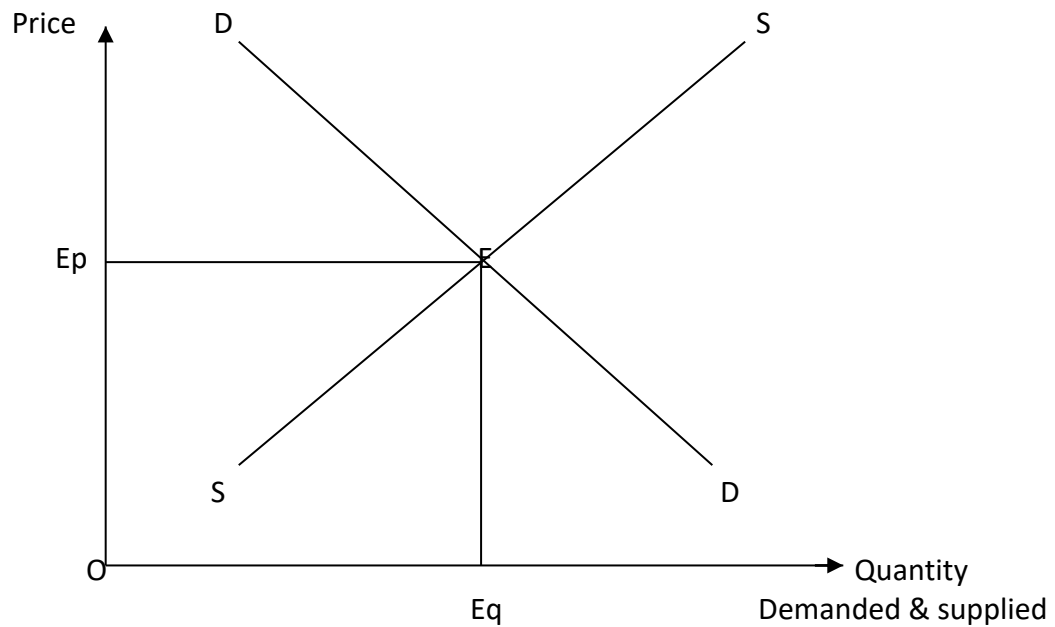
Simultaneous increase in demand and supply will result in ***increase in equilibrium quantity*** but equilibrium price may rise, do not change or falls and it depends upon whether demand increases proportionately more than, equal or less than supply.

Accordingly three cases are as follows :

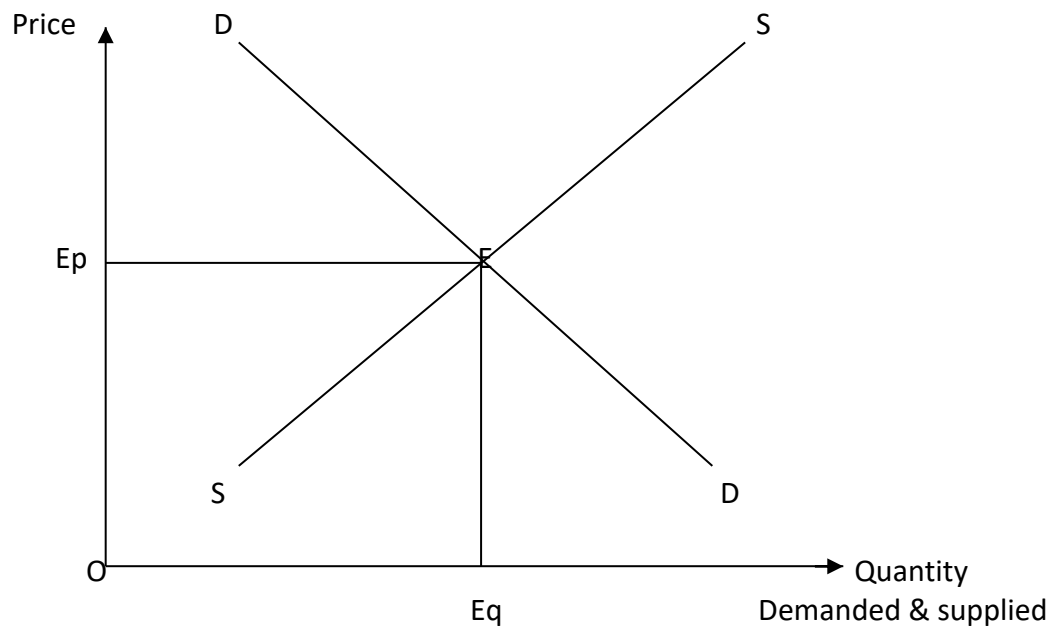
1. **Increase in demand > Increase in supply**



2. **Increase in demand < Increase in supply**



3. **Increase in demand = Increase in supply**

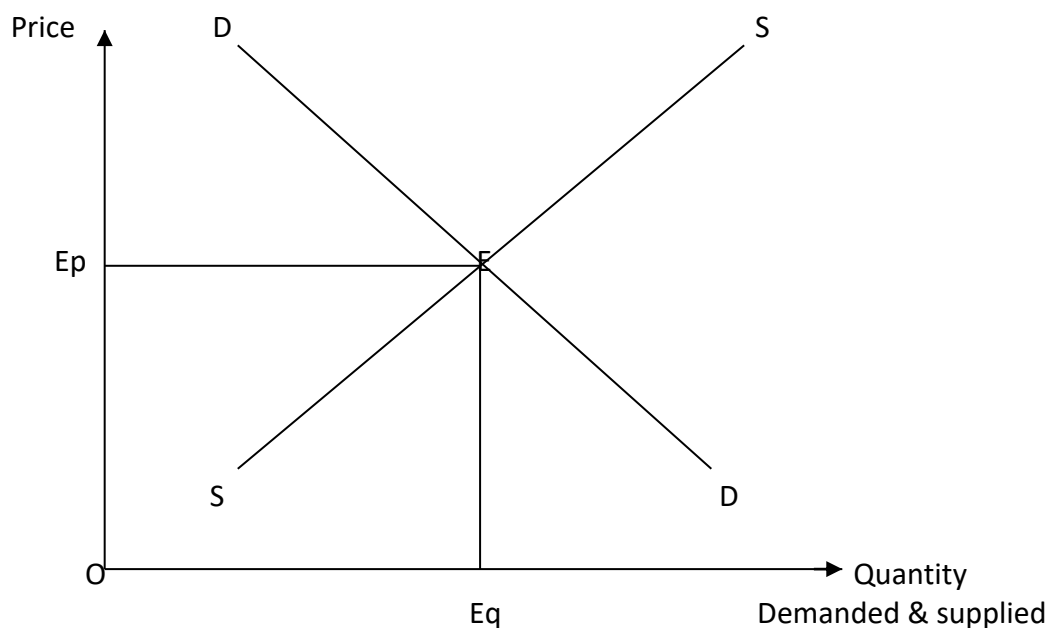


SIMULTANEOUS DECREASE IN DEMAND AND SUPPLY

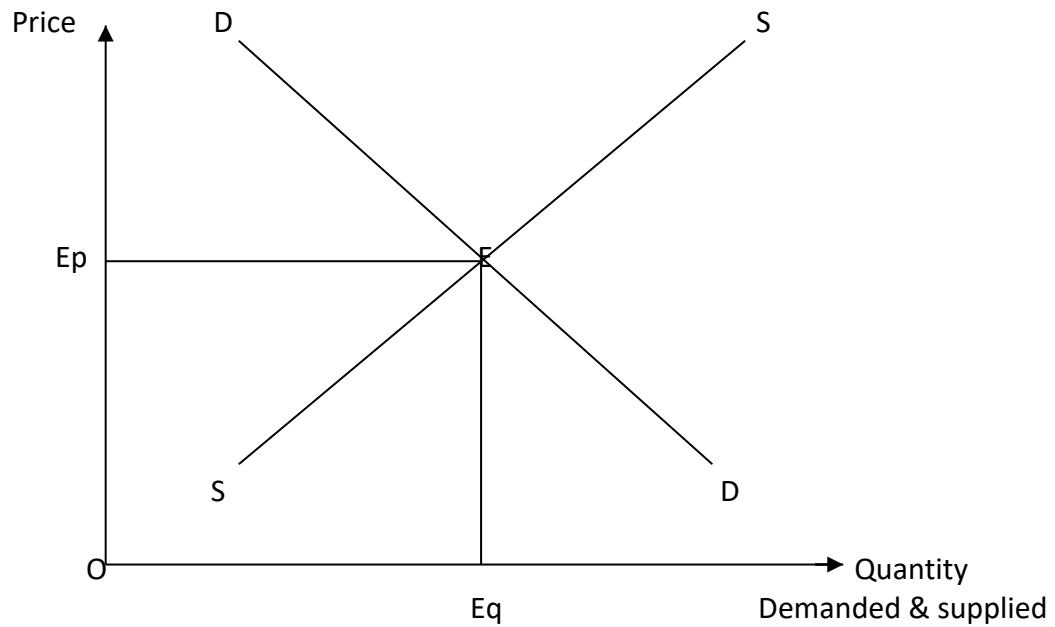
Simultaneous decrease in demand and supply will result in ***decrease in equilibrium quantity*** but equilibrium price may rise, do not change or falls and it depends upon whether demand decreases proportionately more than, equal or less than supply.

Accordingly three cases are as follows :

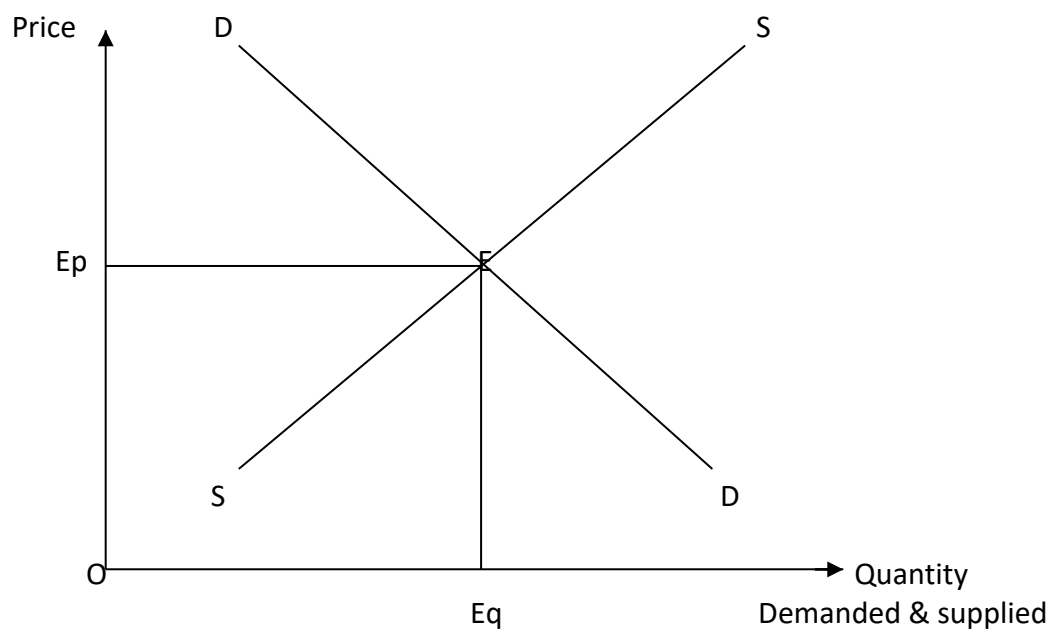
1. **Decrease in demand > Decrease in supply**



2. **Decrease in demand < Decrease in supply**

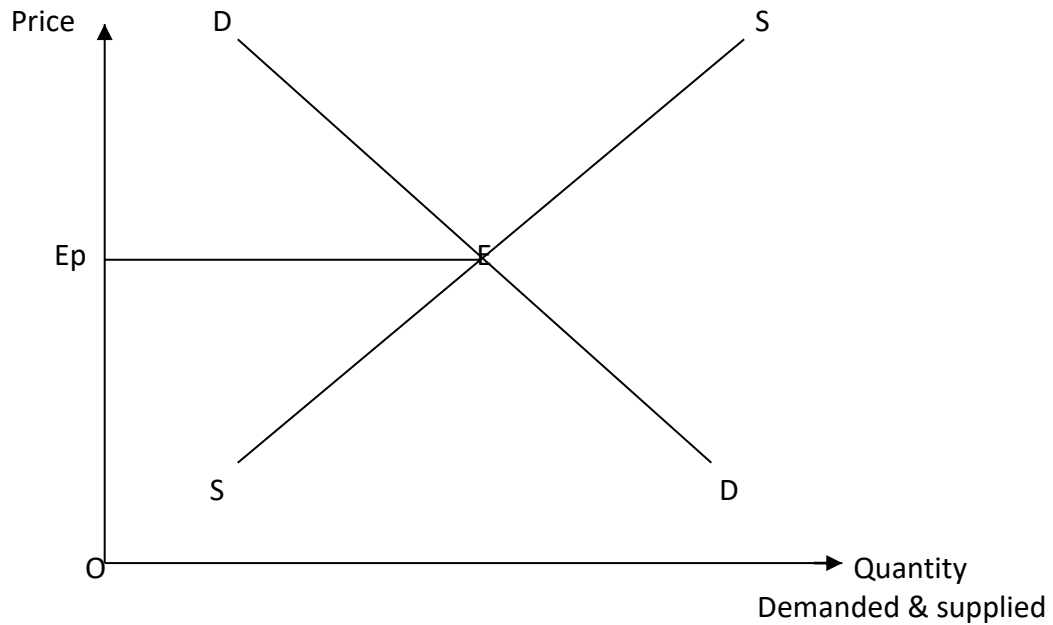


3. **Decrease in demand = Decrease in supply**



PRICE CEILING

Price ceiling refers to fixing the maximum price of a commodity by the government at a level lower than equilibrium price.



- In the diagram, demand curve DD and supply curve SS intersect each other at point E and as a result equilibrium price E_p is determined.
- Now suppose the government interferes and fixes the maximum price at OP which is less than equilibrium price. At this price, quantity demanded exceeds the quantity supplied and it creates _____.

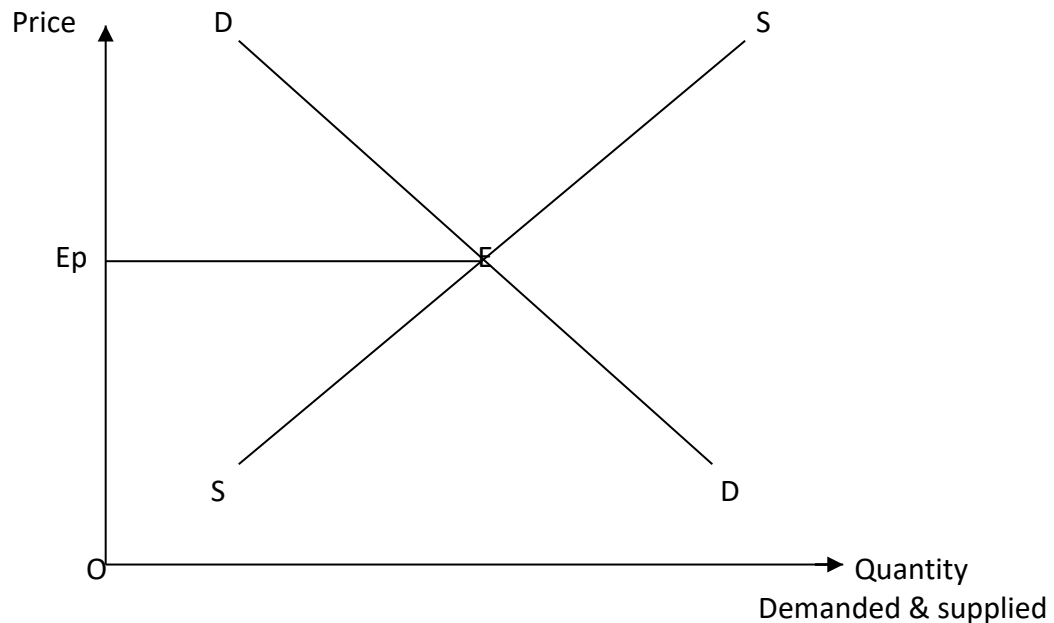
➤

➤ Drawbacks

- 1.
- 2.
- 3.

PRICE FLOOR

Price floor refers to the minimum price fixed by the government above the equilibrium price which the producer must be paid for their goods and services.



- In the diagram, demand curve DD and supply curve SS intersect each other at point E and as a result equilibrium price E_p is determined.
- Now suppose the government interferes and fixes the minimum price at OP which is above the equilibrium price. At this price quantity supplied exceeds quantity demanded and creates _____.

Very Short Answer Type Questions (1 Mark)

1. **Define market.**

Ans. Market is a system with the help of it the buyers and seller of a commodity or service come to contact with each other.

2. **What do you mean by homogenous product?**

Ans. It means product produced by different firms is identical in all respect like quality, colour, size, weight etc. such products are perfect substitutes.

3. **How is price determined under perfect competition?**

Ans. Price is determined by an industry by the forces of demand and supply.

4. **What is the common feature shared by perfect and monopolistic competition?**

Ans. (i) Free entry and exit of firms
(ii) Perfect mobility of factors.

5. **If the firms are earning abnormal profits, how will the number of firms in the industry change?**

Ans. The number of firms in the industry will increase.

6. **Define the monopoly market.**

Ans. It is a form of market under which there is a single seller, selling a product which does not have close substitutes.

7. **Under which market there is no difference between firm and industry?**

Ans. Monopoly.

8. **What is normal profit?**

Ans. It is the minimum profit which a firm must get to stay in business.

9. **Under which form of market the firm is price taker.**

Ans. Perfect competition.

10. **What is cartel?**

Ans. A cartel is a group of firms which jointly set 'output and price' policy of its product in such a way so as to reap benefits of monopoly.

11. **What is the relationship between AR curve and demand curve in a monopoly market?**

Ans. Both AR curve and demand curve are the same in a monopoly market.

12. **What do you mean by price discrimination?**

Ans. Price discrimination is a policy under which a seller sells a similar product at different prices to different buyers.

13. **Define oligopoly.**

Ans. Oligopoly is a market structure where there are few firms competing for their homogenous or differentiated products.

14. **Define equilibrium price.**

Ans. It is the price at which demand = supply.

15. **When does the situation of excess supply arise?**

Ans. When market price is more than equilibrium price and market supply is more than market demand.

16. **What will be the effect on equilibrium price when increase in demand is than increase in supply?**

Ans. When increase in demand is more than increase in supply, equilibrium price will increase.

17. **Under what situation does the equilibrium price remains unaffected when there is simultaneous increase in demand and supply.**

Ans. When increase demand is equal to increase in supply the equilibrium price will remain same.

Higher Order Thinking Skill

1. **What is the relation between average revenue curve and demand curve under monopolistic competition?**

Ans. Both AR and MR curves have negative slope

Short Answer Type Questions (3-4 Marks)

1. Why is firm under perfect competition a price taker and under monopolistic competition is price maker. Explain?
2. How is the demand curve under monopolistic competition different from demand curve of a firm under perfect competition?
3. Why is a firm under perfect competition a price taker? Explain.
4. Explain three features of perfect competition.
5. Explain the implication of large number of seller feature of perfect competition.
6. What will happen if the price prevailing in the market is above the equilibrium price.
7. Distinguish between monopoly and oligopoly.
8. Explain the concept of excess demand with the help of diagram.
9. Differentiate between 'Collusive and non-collusive oligopoly.
10. Explain the determination of equilibrium price under perfect competition with the help of schedule.
11. Explain why is the equilibrium price determined only at the output level at which market demand and market supply are equal.

Higher Order Thinking Skill

1. $MR = AR$ in perfect competition but $MR < AR$ in monopoly and monopolistic competition why?
2. In which condition decrease in demand can not change the price of commodity?
3. Explain how firms are interdependent in an oligopoly market.
4. In which competition the availability of close substitutes is present? How does it effect the price?
5. Explain the implication of 'freedom of entry and exit to the firms' under perfect competition.

Long Answer Type Questions (6 Marks)

1. Explain the characteristics of monopolistic competition.
2. Market for a good is in equilibrium. There is simultaneous increase both in demand and supply of the good. Explain its effect on market price.
3. Explain the term market equilibrium. Explain the series of changes that will take place if market price is higher than the equilibrium price.
4. How will a fall in the price of tea affect the equilibrium price of coffee. Explain the chain of effects.
5. Explain the following features of perfect competition.
 - i. Large number of firms or Sellers and Buyers
 - ii. Homogeneous Product.
6. Explain features of Oligopoly.
7. Explain how change in price of a substitute commodity would affect market equilibrium of the commodity X.
8. With the help of a diagram explain the effect of "decrease" in demand of a commodity on its equilibrium price and quantity.

9. There is simultaneous decrease in demand and supply of a commodity, when it result in
- i. no change in equilibrium price
 - ii. a fall in equilibrium price.