SYLLABUS

Class – B.Com. I Year

Subject – Micro Economics

UNIT – I	**Micro Economics – Definition, meaning, inductive and Deductive Methods, Importance and Limitations of Micro Economics.**
UNIT – II	Law of Demand – Meaning and Definition, Characteristics, Types of Demand, Exceptions of Law of Demand.
UNIT – III	Elasticity of Demand – Concept, Definition, Importance, Types and Measurement of Elasticity of Demand, Production Function (with one and two variables), Economics – Internal and External.
UNIT – IV	Factors of Production – Land, Labour, Capital, Organization and Enterprise, Cost and Revenue Analysis.
UNIT – V	Market Structure-Concept, Definition, Characteristics, Classification, Price determination under Perfect and Imperfect competition. Marginal Productivity Theory of Distribution.

Unit 1

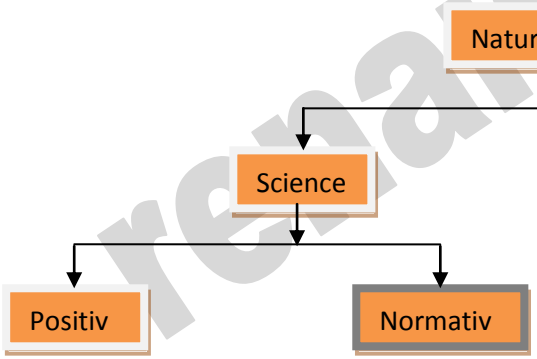
Definition of Economics

The term "Economics" was originally derived from the two Greek word "Oikos" which means household and "Nomos" which means management. Thus, it refers to managing of a household using the limited funds.

Many economists like Stigler, Samuelson, Macifie, Oscar Lange, Sciovosky, have given definition of economics –

1. "Economics is fundamentally a study of scarcity and the problems which scarcity gives rise to." **-Stonier and Hagur**
2. "Economic is a science concerned with the administration of scarce resources." **-Scitovosky**

Nature of Economics



Economics as a Science

1) In simple words, a science is commonly defined as a systematic body of knowledge about a particular branch of the universe.
2) In the opinion of Poincare who says – "A science is built upon facts as a house is built of stones."
3) Applying this is to our subject, we find economics is built upon facts, examined and systematized by economists. Further, economics like other science deduce conclusion or generalizations after observing, collecting and examining facts. Thus, it deals with (i) observation of facts. (ii) Measurement (iii) Explanation (iv) Verification. In short, it formulates economic laws about human behaviour. In this way economics has developed into a science of making and possessing laws for itself.
4) Science economics satisfies all the tests of a science, economics is regarded as a full-fledged, science. In short, it is no way less than other sciences.

The economics as a science can be divided into two parts i.e. (a) Positive Science and (b) Normative Science.

I. **Economics as a Positive Science –** A positive science establishes a relation between cause and effect. It tells us that if we do a certain thing, same result will follow.

II. **Economics as A Normative Science –** Marshall, Pigou and historical school puts the arguments that economics is normative science i.e. it states: What should be done.

Therefore a positive science describes what is and a normative science describes what should be done & what should not be done.

From the above noted discussion, we can say that economics is both positive and normative science as at present, it deals with 'what is' and 'what ought to be'. Therefore, it not only focuses why certain things happen, it also conveys whether it is the right thing to happen.

Economics as an art

Art is completely different from science.

1) In the words of Cossa – "A science teaches us to know; an art teaches up to do. In other words, science explains and expounds; art directs, art imposes precepts or proposes rules."In other words, science is theoretical but an art is political.
2) What is an Art? As J.M. Keynes has put it: "An art is a system of rules for the attainment of a given end". The object of an art is the formulation of precepts applicable to policy. This implies that art is practical. Applying this definition of art, we can say economics is an art. Its several branches like consumption, production and public finance provide practical guidance to solve economic problems. Again for example the theory of consumption guides the consumer to obtain maximum satisfaction with his given income (means). In this sense, economics can be considered as an art in the wider sense of the term art i.e. in the sense of practical science. It means creation or practical application of knowledge. It is for this reason; we treat economics as an art.

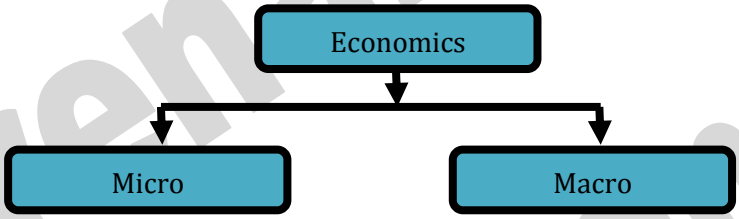
In a nutshell, we can conclude the discussion that economics is **both science and art.**

Practical uses of Economics

The main points of practical uses are discussed below –

1. Useful to the Consumer
2. Useful to the Producer
3. Helpful to Business Community
4. Solution to Economic Problems
5. Helpful to Workers
6. Helpful in Price Determination
7. Significant for Economics Development
8. Useful for Economic Planning
9. Useful for Social Workers
10. Helpful to Social Welfare Activities
11. Helpful in international Trade.

In short economics is useful for all.



Definitions of Micro Economics

Different economists have defined micro economics as under –

According to A.P. Lerner – "Micro economics consists of looking at the economy through a microscope, as it were, to see how the millions of cells in the body of the individuals, or households as consumers, and the individuals or firms as producers-play their parts in the working of the whole economic organism."

According to K.E. Boulding – 'Micro economics is the study of particular firms, particular households, individual prices, wages, incomes, individual industries and particular commodities."

According to Shapiro – "Micro economics deals with small parts of the economy.

Importance/Usefulness of Microeconomics

1. **Determination of demand pattern:** It determines the pattern of demand in the economy, *i.e.,* the amounts of the demand for the different goods and services in the economy, because the total demand for a good or service is the sum total of the demands of all the individuals. Thus, by determining the demand patterns of every individual or family, microeconomics determines the demand pattern in the country as a whole.
2. **Determination of the pattern of supply:** In a similar way, the pattern of supply in the country as a whole can be obtained from the amounts of goods and services produced by the firms in the economy. Microeconomics, therefore, determines the pattern of supply as well.
3. **Pricing:** Probably the most important economic question is the one of price determination. The prices of the various goods and services determine the pattern of resource allocation in the economy. The prices, in turn, are determined by the interaction of the forces of demand and supply of the goods and services. By determining demand and supply,
Microeconomics helps us in understanding the process of price determination and, hence, the process of determination of resource allocation in a society.
4. **Policies for improvement of resource allocation:** As is well-known, economic development stresses the need for improving the pattern of resource allocation in the country. Development polices, therefore, can be formulated only if we understand how the pattern of resource allocation is determined. For instance, if we want to analyze how a tax or a subsidy will affect the use of the scarce resources in the economy, we have to know how these will affect their prices. By explaining prices and, hence, the pattern of resource allocation, microeconomics helps us to formulate appropriate development policies for an underdeveloped economy.
5. **Solution to the problems of micro-units:** Since the study of microeconomics starts with the individual consumers and producers, policies for the correction of any wrong decisions at the micro-level are also facilitated by microeconomics. For example, if a firm has to know exactly what it should do in order to run efficiently, it has to know the optimal quantities of outputs produced and of inputs purchased. Only then can any deviation from these optimal levels be corrected. In this sense, microeconomics helps the formulation of policies at the micro-level.

Limitations of Microeconomics

However, microeconomics has its limitations as well:
1. **Monetary and fiscal policies:** Although total demand and total supply in the economy is the sum of individual demands and individual supplies respectively, the total economic picture of the country cannot always be understood in this simplistic way. There are many factors affecting the total economic system, which are outside the scope of Microeconomics. For example, the role of monetary and fiscal policies in the determination of the economic variables cannot be analyzed completely without going beyond microeconomics.
2. **Income determination:** Microeconomics also does not tell us anything about how the income of a country (*i.e.,* national income) is determined.
3. **Business cycles:** A related point is that, it does not analyze the causes of fluctuations in national income. The ups-and-downs of national income over time are known as business cycles. Microeconomics does not help us in understanding as to why these cycles occur and what the remedies are.
4. **Unemployment:** One of the main economic problems faced by an economy like India is the problem of unemployment. This, again, is one of the areas on which microeconomics does not shed much light. Because, if we are to find a solution to the unemployment problem, we must first understand the causes of this problem. For that, in turn, we must understand how the total employment level in the economy is determined. This is difficult to understand from within the confines of microeconomics.

Methods of Economic Analysis

An economic theory derives laws or generalizations through two methods:

(1) Deductive Method of Economic Analysis

The ***deductive method*** is also named as ***analytical***, ***abstract*** or ***prior*** method. The deductive method consists in deriving conclusions from general truths, takes few general principles and applies them draw conclusions. **(GENERAL TO PARTICULAR)**

For instance, if we accept the general proposition that man is entirely motivated by self-interest. Then Ram (a man) is also entirely motivated by self interest.

The classical and neo-classical school of economists notably, Ricardo, Senior, Cairnes, J.S. Mill, Malthus, Marshall, Pigou, applied the deductive method in their economic investigations.

Steps of Deductive Method:

The main steps involved in deductive logic are as under:

(i) Perception of the problem to be inquired into: In the process of deriving economic generalizations, the analyst must have a clear and precise idea of the problem to be inquired into.

(ii) Defining of terms: The next step in this direction is to define clearly the technical terms used analysis. Further, assumptions made for a theory should also be precise.

(iii) Deducing hypothesis from the assumptions: The third step in deriving generalizations is deducing hypothesis from the assumptions taken.

(iv) Testing of hypothesis: Before establishing laws or generalizations, hypothesis should be verified through direct observations of events in the rear world and through statistical methods. (Their inverse relationship between price and quantity demanded of a good is a well established generalization).

Merits of Deductive Method:
The main merits of deductive method are as under:
(i) This method is near to reality. It is less time consuming and less expensive.
(ii) The use of mathematical techniques in deducing theories of economics brings exactness and clarity in economic analysis.
(iii) There being limited scope of experimentation, the method helps in deriving economic theories.
(iv) The method is simple because it is analytical.

Demerits of Deductive Method:

(i) **The deductive method is simple and precise only if the underlying assumptions are valid**. More often the assumptions turn out to be based on half truths or have no relation to reality. The conclusions drawn from such assumptions will, therefore, be misleading.
(ii) In deductive method, the premises from which inferences are drawn may not hold good at all times, and places. As such **deductive reasoning is not applicable universally**.
(iii) The deductive method is highly abstract. **It requires a great deal of care to avoid bad logic or faulty economic reasoning.**

(2) Inductive Method of Economic Analysis:

Inductive method which is also called ***empirical method*** was adopted by the "Historical School of Economists". It involves the process of reasoning from particular facts to general principle.

(PARTICULAR TO GENERAL)

This method derives economic generalizations on the basis of (i) Experimentations (ii) Observations and (iii) Statistical methods.

In this method, data is collected about a certain economic phenomenon. These are systematically arranged and the general conclusions are drawn from them.

For example, we observe 200 persons in the market. We find that nearly 195 persons buy from the cheapest shops, Out of the 5 which remains, 4 persons buy local products even at higher rate just to patronize their own products, while the fifth is a fool. From this observation, we can easily draw conclusions that people like to buy from a cheaper shop unless they are guided by patriotism or they are devoid of commonsense.

Steps of Inductive Method:

The main steps involved in the application of inductive method are:
(i) Observation.
(ii) Formation of hypothesis.
(iii) Generalization.
(iv) Verification.

Merits of Inductive Method:

(i) It is based on facts as such the method is realistic.
(ii) In order to test the economic principles, method makes statistical techniques. The inductive method is, therefore, more reliable.
(iii) Inductive method is dynamic. The changing economic phenomenon are analyzed and on the basis of collected data, conclusions and solutions are drawn from them.
(iv) Inductive method also helps in future investigations.

Demerits of Inductive Method:

The main weaknesses of this method are as under:
(i) If conclusions are drawn from insufficient data, the generalizations obtained may be faulty.
(ii) The collection of data itself is not an easy task. The sources and methods employed in the collection of data differ from investigator to investigator. The results, therefore, may differ even with the same problem.
(iii) The inductive method is time-consuming and expensive.

Conclusion:

The above analysis reveals that both the methods have weaknesses. We cannot rely exclusively on any one of them. Modern economists are of the view that both these methods are complimentary. They partners and not rivals. **Alfred Marshall** has rightly remarked:

"***Inductive and Deductive methods*** are both needed for scientific thought, as the right and left foot are both needed for walking". We can apply any of them or both as the situation demands.

UNIT 2

MEANING OF DEMAND

Demand for a commodity is the amount of it that a consumer will purchase will be ready to take off from the market at various given prices in a period of time such as a day, week, month or a year. It constitute three things as (i) desire for a commodity (ii) ability to pay (availability of resources) (iii) willingness to spend the resources.

"The demand for anything at a given price is the amount of it which will be bought per unit of time at that price." According to Hansen, "By demand, we mean the quantity of a commodity that will be purchased at a particular price and not merely the desire of a thing." Thus demand in economics implies both the desire to purchase and the ability to pay for a good.

The demand for a commodity and quantity demanded are two different concepts. Demand refers to quantities of a commodity which consumers plan to buy at **various prices** of a good during a period of time whereas quantity demanded is the amount of good or service which consumers plan to buy at a **particular price.**

CLASSIFICATION OF DEMAND

The main classification types of demand are as under:

1. **Price Demand:** Price demand refers to the various quantities of commodity which the consumer will buy per unit of time at a certain prices (other things remaining the same). The quantity demanded changes with the change in price. The quantity demanded increases with a fall in price and the quantity demanded falls with an increase in price. In other words, we can say that quantity demanded and price have a negative correlation as

$D_A = f(P_A)$

Where D_A = Demand for commodity A
f = Function
P_A = Price of the commodity A.
P↑ D↓
P↓ D↑

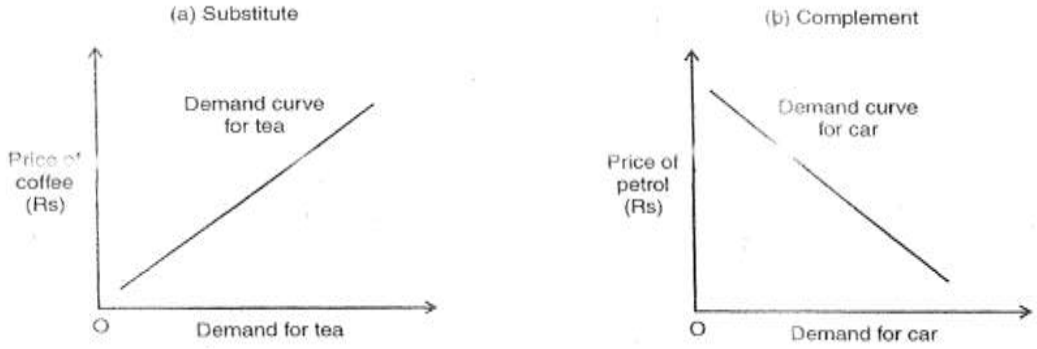
2. **Income Demand:** Being **ceterus-paribus**, the income demand indicates the relationship between income and demand of the consumer. The income demand shows how much quantity a consumer will buy at different levels of his income. Generally, there is positive relationship between income and demand of the consumer i.e.

$D_A = f(Y_A)$

Where D_A = Demand for commodity A
Y_A = Income of the consumer A.
Y↑ D↑
Y↓ D↓

The above function shows as the income of the consumer increases demand also increases and when income falls demand also decreases.

3. **Cross Demand:** Cross demand refers to the relationship between quantity demanded of good 'A' and price to related good 'B' other things being equal. In simple words, from cross demand we mean the change in the quantity demanded of a commodity without any change in its price but due to the change in the price of related goods i.e. B commodity. The related goods can either be substitute goods or complementary goods. The demand curve in the case of substitute will be of upward sloping while the demand curve in complementary goods will be of downward slope.



DEMAND SCHEDULE

It summarizes the information on prices and quantity demanded in a tabular form. It is of two types.

1. Individual Demand Schedule
2. Market Demand Schedule

1. **Individual Demand Schedule:** Considering other things being equal individual demand schedule refers to the quantities of the commodities demanded by the consumer at various prices. It can be explained with the help of table:

Individual Demand Schedule

Price per unit of the bale	Quantity Demanded
5	1
4	2
3	3
2	4
1	5

From the above table it is seen that as the price per unit say cotton goes on increasing, the quantity demanded goes on falling. As is clear, when price of cotton is Rs. 5, quantity demanded is 1 units. Now, the price of cotton falls to Rs. 3, the quantity demanded increases to 3 units. Moreover, as the price falls to Rs. 1 quantity demanded shoots upto 5 units.

Market Demand Schedule

The market demand is the summation of collective demand of all persons of a homogeneous commodity. Basically, the market demand schedule-depicts the functional relationship between prices and quantity demanded. If we are interested to know the demand schedule for a year, we will add the demand for all the months of that particular year. In this way, we may conclude that market demand schedule is a lateral summation of the quantities purchased by all individuals at different prices in a particular period of time. Therefore, "Market demand schedule is defined as the quantities of a given commodity which all consumers will buy at all possible prices at a given moment of time." The market demand schedule is shown in the following table.

Market Demand Schedule

Price Per Unit	Quantity Demanded by A	Quantity Demanded by B	Total Market Demand (A + B)
5	10	15	25
4	15	20	35
3	20	25	45
2	25	30	55
1	30	35	65

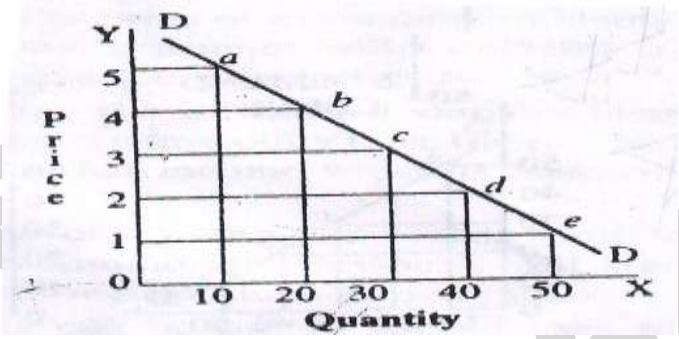
In table 2, market schedule is obtained by adding the demand of A and B at different prices. For instance, at a price of Rs. 5 the market demand is 25 i.e. 10 of A consumer and 15 for B consumer. AS the price falls to Rs. 1 the market demand increases to 65 i.e. 30 and 35 for A and B consumers respectively. In other words, we can say that like individual demand, market demand also depicts the negative correlation between price and quantity demanded.

Demand Curve

It summarizes the information of prices and quantity demanded in graphical form. It is of two types:
1) Individual Demand Curve
2) Market Demand Curve

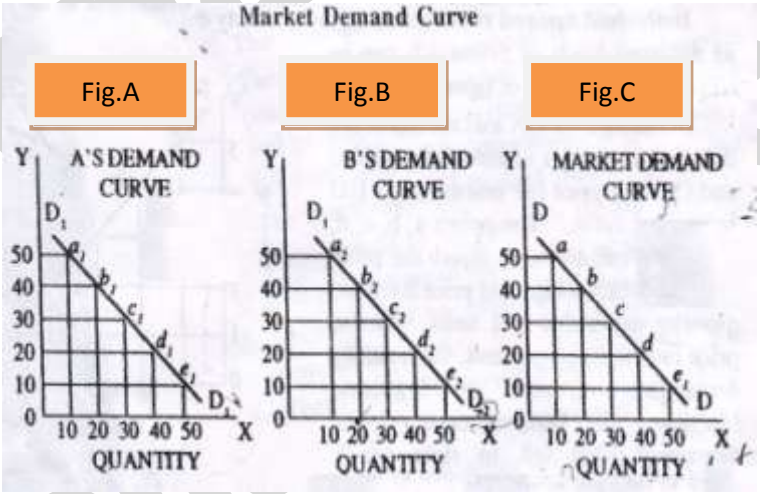
Individual Demand Curve

Individual demand curve refers to the quantity demanded by the consumer at different levels of prices. It can be shown with the help of figure



In the figure given above OX axis measures the different quantities of cotton demanded on OY-axis price per unit cotton. DD is demand curve. The points a, b, c, d, e on the demand curve shows the price quantity relationship. At price Rs. 5 the quantity demanded is 1 units. As the price falls to Rs. 1 per unit, the quantity demanded increases to 5 units. Moreover, the demand curve slopes downward from left to right which indicates that there is inverse relation between price and quantity demanded.

Market Demand Curve



The market demand curve is the horizontal summation of all individuals demand for the commodity. The above figures A and B shows the individual demand curves. D_1 D_1 and D_2 $D_2$are the demand curves for consumers A and B and the market demand curve is DD. It is also assumed that there are two consumers in the market facing same price of the the commodity but they purchase according to their individual requirements.

A + B = Market Demand
At price Rs. 5 the market demand is
$a_1 + a_2 = a$
At price Rs. 4 the market demand is
$b_1 + b_2 = b$
In the same fashion, at prices 3, 2, 1, the market demand is
$c_1 + c_2 = c$
$d_1 + d_2 = d$
$e_1 + e_2 = e$
Now, if we combine these points we will get the market demand curve as DD.

Why Demand Curve Slopes Download to the Right ?
The Diagram for Demand Curve shows that demand curve slopes downward to the right. Why does it happen? The reasons behind the law of demand are following:
(i) Income effect. When price a commodity falls, real income of its consumers increases in terms of this commodity. In other words, their purchasing power increases since they are required to play less for the same quantity. According to another economic law, increase in real income (or purchasing power) increases demand for goods and services in general and for the goods with reduced price in particular. The increase in demand on account of increase in real income is called income effect.

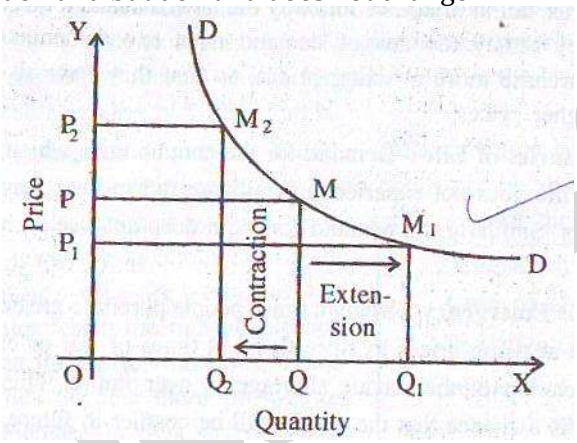
(ii) Substitution effect. When price of a commodity falls, it becomes cheaper compared to its substitutes, their prices remaining constant. In other words, when price of a commodity falls, price of its substitutes remaining the same, its substitute becomes relatively costlier. Consequently, rational consumers tend to substitute cheaper goods for costlier ones within the range of normal goods- goods whose demand increases with increase in consumer's income-other things remaining the same. Therefore, demand for the relatively cheaper commodity increases. The increase in demand on account of this factor is known as substitution effect.
(iii) Diminishing marginal utility. Marginal utility is the utility derived from the marginal unit a commodity when its price falls. When a person buys a commodity, he exchanges his money income with the commodity in order to maximize his satisfaction. He continues to buy goods and services so long as marginal utility of his money ($Mu_m s$) is less than the marginal utility of the commodity (Mu_c).commodity Mu_m with Mu_c, with a view to maximizing his satisfaction. Consequently, demand for a commodity increase when its price falls.

DETERMINANTS OF DEMAND

1) Price of the commodity
2) Price of substitutes and complementary goods.
3) Consumers' income.
4) Consumer's taste and preference.
5) Consumers' expectations of future prices
6) Demonstration effect/Advertisement
7) Consumer-credit facility
8) Population of the country
9) Distribution of national income
10) Season & weather

Changes in Demand
1) Movement along Demand Curve: When other things remaining the same, the quantity demanded of a commodity varies with variation in price only, these variations are known as Movement along Demand Curve. When the quantity demanded rises due to fall in the price of a commodity it is called **extension of demand**. On the contrary when the quantity demanded falls due to rise in price it is

known as **contraction of demand**. The quantity demanded varies with the change in price in case of extension and contraction of demand but demand does not change.



2) **Shift in Demand Curve:** When the demand for a commodity changes with changes in other elements and price remaining constant, it is known as shift in demand. When the demand for a commodity rises while price remaining constant or the quantity demanded remains unchanged even when the prices rises, it is called an **increase in demand**. Demand curve varies with an increase in demand and it shifts rightward from the initial demand curve. When the demand for a commodity falls while price remaining constant or the quantity demanded remains unchanged even when the prices falls, it is called an **decrease in demand**. Demand curve varies with a decrease in demand and it shifts leftward from the initial demand curve.

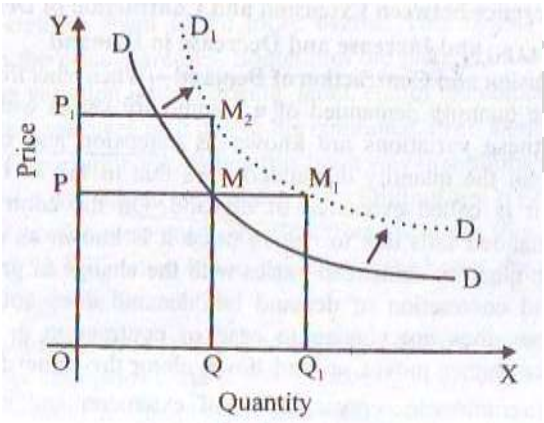


Fig. 5.5
Increase in demand

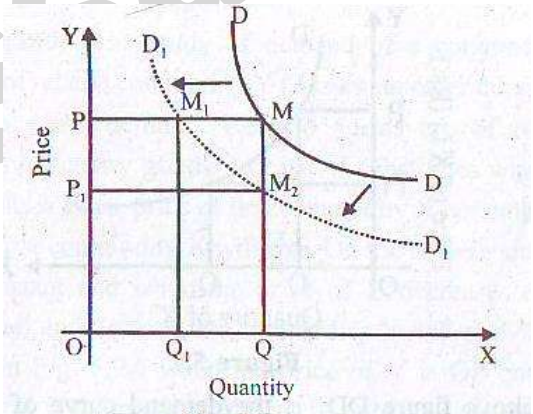


Fig. 5.6
Decrease in demand

Law of Demand

The law of demand states that there is inverse relation between the price and demand for a commodity. According to law of demand, **other things being equal**, if price of a commodity falls, the quantity demanded of it will rise and if price of a commodity rises, the quantity demanded of it will fall. Although, this relationship is not proportionate i.e. it does not mean when price falls by one-half the demand for good will be doubled. It simply shows the direction of change in demand as a result of change in price. We can say that quantity demanded and price have a inverse relationship.

Assumptions in the law of demand

According to Stigler and Boulding, the law of demand is based on the following assumptions:

1. There should be no change in the income of the consumers.

2. There should be no change in the tastes and preferences of the consumers, because the law of the demand applies only when the tastes and preferences of the consumers remain constant.
3. Price of the related commodities should remain unchanged.
4. The commodity in questions should be a normal one.
5. There should be no change in the size of population.
6. There distribution of income and wealth should be equal.
7. There should be continuous demand except in case of indivisible commodities.
8. There should be perfect competition in the market.

Importance of the Law

The law of demand has been of great theoretical and practical importance in economics as:

1. Price Determination.
2. Importance for the consumer
3. Importance to Finance Minister
4. Important for Planning.
5. Important for Producers
6. Importance for Farmers

EXCEPTIONS TO THE LAW OF DEMAND

The law of demand is one of the fundamental laws of economics. The law of demand, however, does not apply to the following cases:

(i) Expectations regarding future prices.
(ii) Prestigious goods.
(iii) Giffen goods.

UNIT-III

ELASTICITY OF DEMAND

Elasticity of demand is defined as the degree of responsiveness of the quantity demanded of a good to a change in its price, consumers income and prices of related goods. There are three concepts of demand elasticity – price elasticity, income elasticity and cross elasticity.

E = % change in Quantity demanded/% change in variable

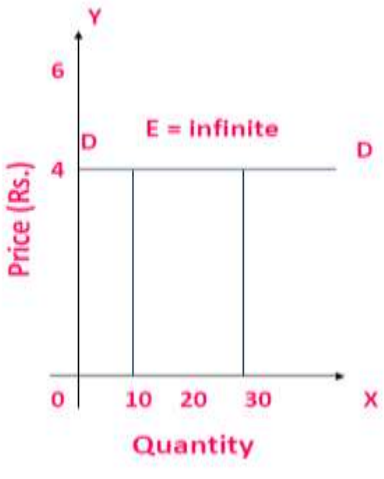
Price elasticity of demand

(**PED** or $\mathbf{E_d}$) is a measure used in economics to show the responsiveness, or elasticity, of the quantity demanded of a good or service to a change in its price. More precisely, it gives the percentage change in quantity demanded in response to a one percent change in price (holding constant all the other determinants of demand, such as income).

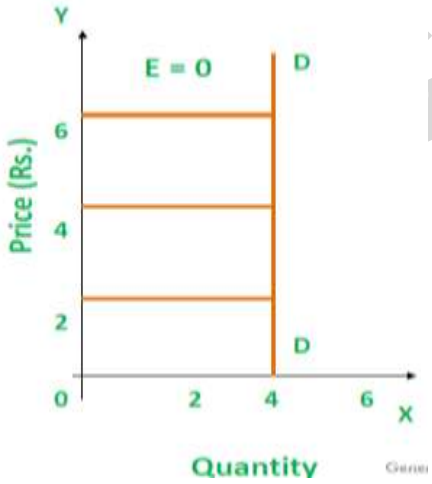
Price elasticity of Demand = Proportionate change in purchases of commodity X / Proportionate change in price of commodity X

Types/Degrees of Price Elasticity of Demand

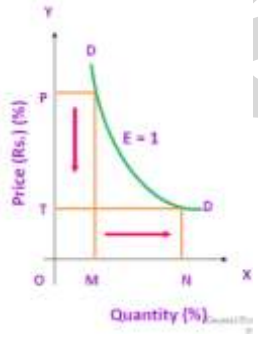
A) **Perfectly Elastic Demand:** A perfectly elastic demand refers to the situation when demand is infinite at the prevailing price. It is a situation where the slightest rise in price causes the quantity demand of the commodity falls to zero.



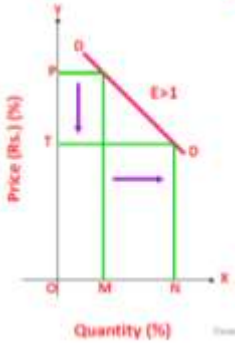
B) **Perfectly Inelastic Demand:** A perfectly inelastic demand refers to a situation when change in price causes no change in the quantity demanded. Even a substantial change in price does not impact quantity demanded.



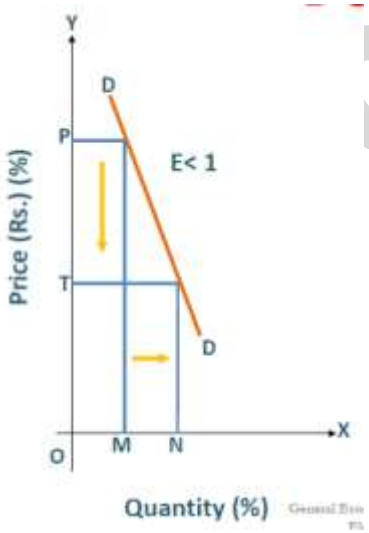
C) **Unitary Elastic Demand:** It is a situation when change in quantity demanded in response to change in own price of the commodity is such that total expenditure of the quantity remains constant. In short % change in quantity demanded is equal to % change in price.
This type of demand curve is called Rectangular Hyperbola



D) **Greater than unitary Elastic Demand:** Demand is greater than unitary elastic when change in quantity demanded in response to change in price of the commodity is such that total expenditure of the commodity increases when the price decreases, and total expenditure decreases when price increases. In short % change in quantity demanded is greater than % change in price.



E) **Less than Unitary Elastic Demand:** Demand is less than unitary elastic when change in quantity demanded in response to change in price of the commodity is such that total expenditure on the commodity decreases when price falls, and total expenditure increases when price rises. In short % change in quantity demanded is less than % change in price.



Methods to measure Price Elasticity of demand

There are three methods of measuring price elasticity of demand:
(1) Total Expenditure Method.
(2) Geometrical Method or Point Elasticity Method.
(3) Arc Method.

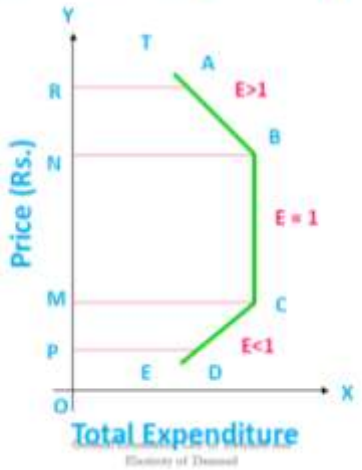
Total Expenditure (Outlay) Method:

This method is evolved by Dr. Alfred Marshall. According to this method, to measure the elasticity of demand it is essential to know how much & in what direction the total expenditure has changed as a result of change in the price of good.

Total Expenditure (Outlay) Method

Elasticity of Demand	Price	Total Expenditure
Greater than Unity i.e. $E_p > 1$	↑ ↓	↓ ↑
Unity i.e. $E_p = 1$	Same Same	Unchanged Unchanged
Less than Unity i.e. $E_p < 1$	↑ ↓	↑ ↓

Total Expenditure (Outlay) Method



For Example:

Price Per Unit ($)	Quantity Demanded	Total Expenditure ($)
20	10 Pens	200.0
10	30 Pens	300.0

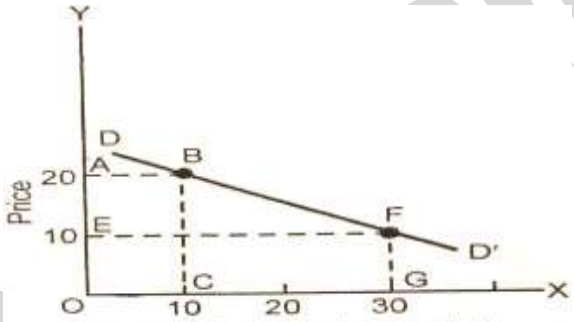
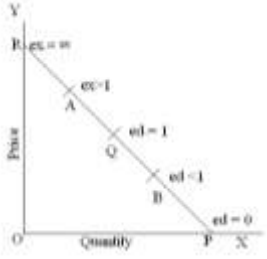


Fig. 6.6 Quantity demanded

Point Method or Geometrical Method:

This method was also suggested by Alfred Marshall. It explains the elasticity of demand at a particular point of the demand curve if the demand function is linear one (or when demands curve is straight line sloping down from left to right). The point method is not applicable on curvilinear demand curves. This method is based on the proposition that each point of the straight line demand curve has different elasticity of demand. Different elasticity of demand. We have already shown (under the heading slope and elasticity) that every point on demand curve does not have the same elasticity. This has been explained by point method, also known as Geometrical Method. The basic formula for this method is :

Ep = Length of Lower segment/Length of Upper segment



Now we can calculate elasticity of demand at different points R,A,Q, B and P, As per the ratio of the lower part to upper part.

e_p at Q = $\frac{QP}{RQ}$ = 1

e_p at A = $\frac{AP}{AR}$ < 1

e_p at B = $\frac{BP}{RB}$ > 1

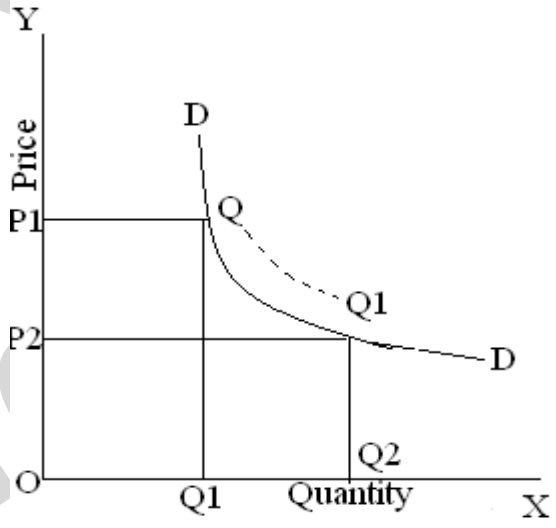
e_p at R = $\frac{RP}{0}$ = ∞

e_p at P = $\frac{0}{RP}$ = 0

Therefore, we can say that at the mid-point on a straight line demand curve, elasticity will be unitary, at higher points (such as A and R) elasticity will be greater than one; at lower points (B and P) the elasticity will be less than one. At points R and P the elasticities will be infinite and zero respectively. Point method is very useful in economics. It helps us measuring elasticity with very small changes in price and quantity demanded. It also tells us that slope and elasticity are two different things.

Arc Method:

As we have seen that point elasticity method can be used to determine the elasticity of demand at different points when infinitesimal changes in price are taking place. If the price change is somewhat large or we have to measure elasticity between two different points rather than at a specific point we use Arc Method. When we have to measure the price elasticity over an arc of the demand curve, such as between points Q and Q1 on the demand curve in figure the point elasticity method cannot yield true picture. In measuring arc elasticity we use the average of the two prices and average of two quantities at these prices in the following manner.



Suppose commodity X's position is like this- At price of Rs. 10 (P1) its, quantity demanded is 100 (Q1) and at price of Rs. 5 (P2) its quantity demanded is 300 (Q2). The elasticity of demand as per Arc Method will be

$$ed = \frac{\triangle q}{\triangle p} \times \frac{p_1+p_2}{q_1+q_2}$$

$$= \frac{200}{} \times \frac{10+5}{}$$

$$= \frac{200}{5} \times \frac{15}{400} = 1.5$$

Income elasticity of demand

Income elasticity of demand measures the percentage change in demand caused by a percent change in income. A change in income causes the demand curve to shift reflecting the change in demand. IED is a measurement of how far the curve shifts horizontally along the X-axis. Income elasticity can be used to classify goods as normal or inferior. With a normal good demand varies in the same direction as income. With an inferior good demand and income move in opposite directions

Income Elasticity = Proportionate change in the quantity purchased /Proportionate change in Income

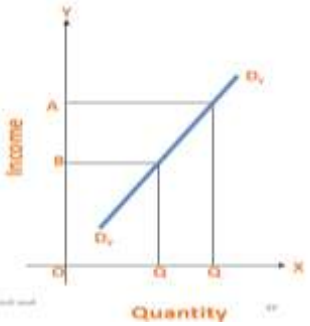
$$Ey = \frac{\text{\% Change in Quantity Demanded}}{\text{\% Change in Income}}$$

Degree of Income Elasticity of Demand

1. Positive Income Elasticity of Demand
   a. Unitary income elasticity of demand
   b. Less than unitary income elasticity of demand
   c. More than unitary income elasticity of demand
2. Negative income elasticity of demand
3. Zero income elasticity of demand

1. Positive income Elasticity of Demand

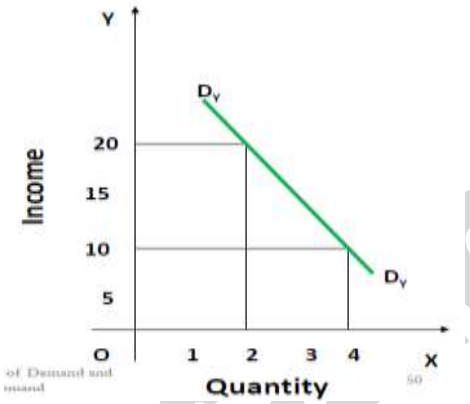
Income elasticity of demand for a good is positive, when with a increase in the income of a consumer his demand for the goods is increases and vice-versa.



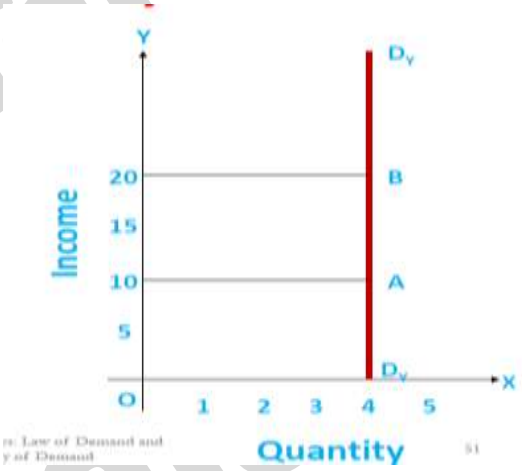
2. Negative Income Elasticity of Demand:

Income Elasticity of Demand is negative when increases in the income of the consumer is accomplished by fall in demand of good.

It is negative in case of inferior goods which are known as Giften goods.



3. **Zero Income Elasticity of Demand**:
Income Elasticity of demand is zero, when change in the income of consumer evokes no change in his demands. Demands for necessaries like oil, salt, etc., have zero income elasticity of demand



CROSS ELASTICITY OF DEMAND

Cross price elasticity of demand measures the percentage change in demand for a particular good caused by a percent change in the price of another good. Goods can be complements, substitutes or unrelated. A change in the price of a related good causes the demand curve to shift reflecting a change in demand for the original good. Cross price elasticity is a measurement of how far, and in which direction, the curve shifts horizontally along the x-axis.

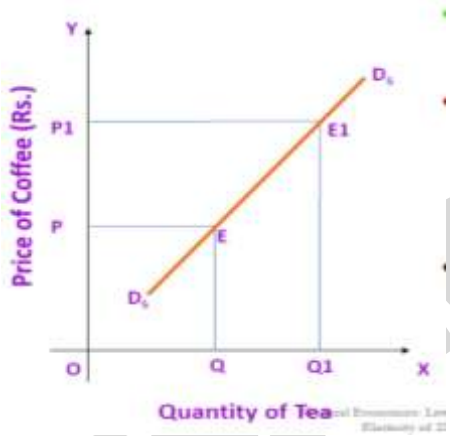
Cross elasticity of Demand for X and Y = Proportionate change in purchases of commodity X / Proportionate change in price of commodity Y

The numerical value of cross elasticity depends on whether the two goods in question are substitutes, complements or unrelated.

Degree of Cross Elasticity of Demand

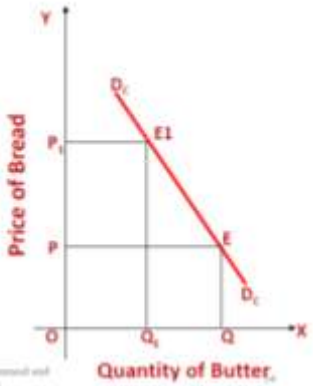
1. **Positive Cross Elasticity of Demand:**

It is positive in case of substitute goods for example, Rise in the price of coffee will lead to increase in Demand for Tea. The curve slopes upward from left to right



2. Negative Cross Elasticity of Demand:

It is negative in case of complementry goods. For example rise in price of bread will bring down the demand for butter.the curves slopes downward from left to right.



3. Zero Elasticity Of Demand:

Cross elasticity of demand is zero when two goods are not related to each other . for example, Rise in the price of wheat will have no effect on the demand for shoes.

Types of Cross Elasticity

(i) Substitute Goods. When two goods are substitute of each other, such as coke and Pepsi, an increase in the price of one good will lead to an increase in demand for the other good. The numerical value of goods is positive.

For example there are two goods. Coke and Pepsi which are close substitutes. If there is increase in the price of Pepsi called good y by 10% and it increases the demand for Coke called good X by 5%, the cross elasticity of demand would be:

$\mathbf{E_{xy} = \%\Delta q_x / \%\Delta p_y = 0.2}$

Since E_{xy} is positive (E > 0), therefore, Coke and Pepsi are close substitutes.

(ii) Complementary Goods. However, in case of complementary goods such as car and petrol, cricket bat and ball, a rise in the price of one good say cricket bat by 7% will bring a fall in the demand for the balls (say by 6%). The cross elasticity of demand which are complementary to each other is, therefore, 6% / 7% = 0.85 (**negative**).

(iii) Unrelated Goods. The two goods which a re unrelated to each other, say apples and pens, if the price of apple rises in the market, it is unlikely to result in a change in quantity demanded of pens. The elasticity is zero of unrelated goods.

PRODUCTION FUNCTION

1) Production is the process of conversion of inputs into outputs.
2) It is the creation of utility and addition of value
3) Production function is the relationship between inputs & output of a commodity
4) The mathematical expression of production function is –

$Q_x = f(x_1, x_2, x_3, \ldots\ldots x_n)$

$O_x \rightarrow$ Output of commodity X.

f = Function of

$x_1, x_2, x_3, \ldots\ldots x_n \rightarrow$ Inputs

5) The inputs/resources used for production are called factors of production. These are namely land, labour, capital & entrepreneur.

Attributes of production function

1. It indicates a functional relationship between physical inputs and physical outputs. For example, if we have two factors, say, labour (L) and capital (K) then the production function
   Q = f (L, K)
2. The production function is always in relation to a period of time. It denotes the flow of inputs resulting in a flow of outputs during a particular period of time. This is due to the fact when the firm wants to increase the production, it can either employ "some factors" additionally or increase "all the factors" in accordance with availability of the time period. Later we will study it as short period and long period.
3. The production function can specify either the maximum quantity of output that can be produced by a given set of input or the minimum quantity of inputs required for producing certain level of output.
4. The quantity of inputs is dependent upon the state of technology available and firm's managerial ability to use them. In order to simplify things the state of technology is considered to be given.
5. Production function takes into account the most efficient technology and methodology available at a time.
6. Production function is purely a technology relationship between input and output. It has nothing to do with the nominal relationship between input and output. It has nothing to do with the nominal price of factors; or value of quantity produced by them.

Fixed factors & variable factors:

1) **Fixed Factor (FF)**
   a. Fixed factors refer to those factors of production which cannot be changed during short run.
   b. These are used in a fixed quantity in the short run.
   c. These factors can be changed only in the long run.
   d. Example-land, plant and machinery, factory building etc.
2) **Variable Factor (VF)**
   a. Variable factor refer to those factors of production which can be changed during short period.
   b. The quantity of variable inputs varies according to the level of output.
   c. Example-labour, raw material etc.

Time Element in Production Function

Short Run and Long Run

Short Run: Short refer to a period of time in which a firm cannot change its fixed factors of production only variable factors can be changed.

Long Run: Long run refers to a time period during which a firm can change all the factors of production. In the long run, all inputs are variable. Therefore the distinction between fixed factors and variable factors will disappear.

Basic Concepts of Production

1. **Total product or Total physical product (TP or TPP)**
   Total product refers to the total volume of a commodity produced by a firm with given inputs during a given period.
2. **Average product or Average physical product (AP or APP)**
   Average product is per unit product of a variable input
   It is obtained by dividing the total product (TP) by the units of a variable factor.
   Symbolically, $\boldsymbol{AP = \frac{TP}{L}}$
3. **Marginal product or Marginal physical product (MP or MPP)**
   Marginal product is an addition to the total product when an additional unit of variable factor (labour) is employed.

Law of Variable Proportions

The Law of Variable Proportions (also called as returns to factor or Laws of Returns) is discussed under the situation of having one factor variable and another factor being used in fixed quantity if there are only two factors of production. This alters the proportions between factors; therefore, it is called as Law of Variable Proportions. The law is applicable for short run. Here Q_x=f(L).

The law can be explained with the help of below table:

Units of Capital (K)	Units of Labour (L)	TP (Units) (Q)	AP $\left(\frac{Q}{L}\right)$	MP $\left(\frac{\Delta Q}{\Delta L}\right)$	
1	0	0	0	0	
1	1	70	70	70	Stage I
1	2	160	80	90	
1	3	270	90	110	
1	4	360	90	90	
1	5	430	86	70	
1	6	498	83	68	Stage II
1	7	546	78	48	
1	8	546	68.25	0	
1	9	522	58	-24	
1	10	470	47	-52	Stage III

First Stage- Stage of Increasing Returns

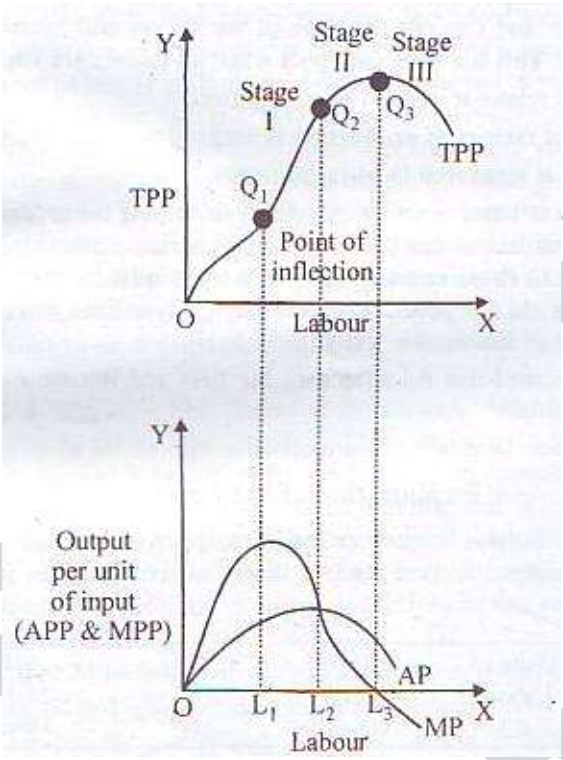
- In this stage as the input of variable factor (labour) increases, marginal product (MP) tends to increase and total product (TP) increases at increasing rate because there is underutilization of the fixed input
- MP also tends to rise alongwith AP.

Second Stage- Stage of Diminishing Returns

- In this stage, increase in the input of variable factor (Labour) is followed by a decrease in MP but it remains positive and TP increases at decreasing rate because there is pressure on fixed input.

Third Stage- Stage of Negative Returns

- In this stage, increase in the units of variable factor (labour) renders MP negative and TP starts declining because there is too much of variable input in relation to the fixed input.



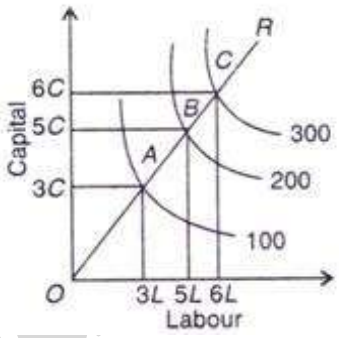
THE LAWS OF RETURNS TO SCALE: PRODUCTION FUNCTION WITH TWO VARIABLE INPUTS

The laws of returns to scale refer to the effects of a change in the scale of factors (inputs) upon output in the long run when the combinations of factors are changed in the same proportion.

If by increasing two factors, say labour and capital, in the same proportion, output increases in exactly the same proportion, there are constant returns to scale. If in order to secure equal increases in output, both factors are increased in larger proportionate units, there are decreasing returns to scale. If in order to get equal increases in output, both factors are increased in smaller proportionate units, there are increasing returns to scale.

Increasing Returns to Scale:

Below figure shows the case of increasing returns to scale where to get equal increases in output, lesser proportionate increases in both factors, labour and capital, are required.



It follows that in the figure:

100 units of output require 3C + 3L
200 units of output require 5C + 5L
300 units of output require 6C + 6L

So that along the expansion path OR, OA > AB > BC. In this case, the production function is homogeneous of degree greater than one. The increasing returns to scale are attributed to the existence of indivisibilities in machines, management, labour, finance, etc. Some items of equipment or some activities have a minimum size and cannot be divided into smaller units. When a business unit expands, the returns to scale increase because the indivisible factors are employed to their full capacity.

Increasing returns to scale also result from specialisation and division of labour. When the scale of the firm expands there is wide scope for specialisation and division of labour. Work can be divided into small tasks and workers can be concentrated to narrower range of processes. For this, specialized equipment can be installed.

Thus with specialization efficiency increases and increasing returns to scale follow:

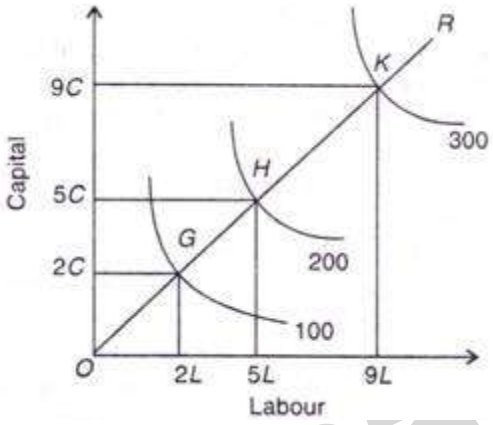
Further, as the firm expands, it enjoys internal economies of production. It may be able to install better machines, sell its products more easily, borrow money cheaply, procure the services of more efficient manager and workers, etc. All these economies help in increasing the returns to scale more than proportionately.

Not only this, a firm also enjoys increasing returns to scale due to external economies. When the industry itself expands to meet the increased long-run demand for its product, external economies appear which are shared by all the firms in the industry. When a large number of firms are concentrated at one place, skilled labour, credit and transport facilities are easily available.

Subsidiary industries crop up to help the main industry. Trade journals, research and training centres appear which help in increasing the productive efficiency of the firms. Thus these external economies are also the cause of increasing returns to scale.

Decreasing Returns to Scale:

Below Figure shows the case of decreasing returns where to get equal increases in output, larger proportionate increases in both labour and capital are required.



It follows that:

100 units of output require 2C + 2L

200 units of output require 5C + 5L

300 units of output require 9C + 9L

So that along the expansion path OR, OG < GH < HK.

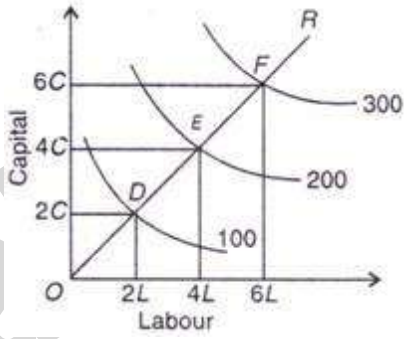
In this case, the production function is homogeneous of degree less than one. Returns to scale may start diminishing due to the following factors. Indivisible factors may become inefficient and less productive. Business may become unwieldy and produce problems of supervision and coordination.

Large management creates difficulties of control and rigidities. To these internal diseconomies are added external diseconomies of scale. These arise from higher factor prices or from diminishing productivities of the factors. As the industry continues to expand the demand for skilled labour, land, capital, etc. rises.

There being perfect competition, intensive bidding raises wages, rent and interest. Prices of raw materials also go up. Transport and marketing difficulties emerge. All these factors tend to raise costs

and the expansion of the firms leads to diminishing returns to scale so that doubling the scale would not lead to doubling the output.

Constant Returns to Scale:
Below Figure shows the case of constant returns to scale. Where the distance between the isoquants 100, 200 and 300 along the expansion path OR is the same, i.e., OD = DE = EF. It means that if units of both factors, labour and capital, are doubled, the output is doubled. To treble the output, units of both factors are trebled.



It follows that:
100 units of output require
1 (2C + 2L) = 2C + 2L
200 units of output require
2 (2C + 2L) = 4C + 4L
300 units of output require
3 (2C + 2L) = 6C + 6L
The returns to scale are constant when internal economies enjoyed by a firm are neutralised by internal diseconomies so that output increases in the same proportion. Another reason is the balancing of external economies and external diseconomies.
Constant returns to scale also result when factors of production are perfectly divisible, substitutable, homogeneous and their supplies are perfectly elastic at given prices. That is why, in the case of constant returns to scale, the production function is homogeneous of degree one.

ECONOMIES AND DISECONOMIES OF SCALE

Economies of scale are advantages that arise for a firm because of its larger size, or scale of operation. These advantages translate into lower unit costs (or improved **productive efficiency**), although some economies of scale are not so easy to quantify.
In some markets, firms have to be of at least a certain size to be able to compete at all, because of the minimum level of investment required; economists call this **minimum efficient scale**.
On the other hand, inefficiencies can also creep in because of increased size, known as **diseconomies of scale**
In the correct sense of the term, **economies and diseconomies of scale** relate to advantages and disadvantages of an ***increase*** in the firm's productive capacity – such as moving to a larger factory or installing completely new technology. Do not confuse these terms with **capacity utilisation**, which is the degree to which the***current*** scale of operations is actually being used.
Economies of scale can be 'internal' (specific to an individual firm) or external (advantages that benefit the industry as a whole).

The main kinds of ***internal*** **Economies of Scale** are:
Purchasing – firms producing on a larger scale should be able to *bulk buy* raw materials or product for resale in larger quantities. They may be able to cut out wholesalers by buying direct from producers, and transport costs per unit may also be reduced. The firm might also be buying in large enough

quantities to make very specific demands about product quality, specifications, service and so on, so that supplies exactly match their needs.

Technical – it may be cost-effective to invest in more advanced production machinery, IT and software when operating on a larger scale.

Managerial – larger firms can afford to have specialist managers for different functions within a business – such as Marketing, Finance and Human Resources. Furthermore, they may be able to pay the higher salaries required to attract the best people, leading to better planning and decision making.

Specialisation – with a larger workforce, the firm may be better able to divide up the work and recruit people whose skills very closely match the requirements of the job.

Marketing – more options are available for larger firms, such as television and other national media, which would not be cost-effective for smaller producers. The marketing cost for selling 10 million items might be no greater than to sell 1 million items. Larger firms might find it easier to gain publicity for new launches simply because of their existing reputation.

Financial – there is a wider range of finance options available to larger firms, such as the stock market, bonds and other kinds of bank lending. Furthermore, a larger firm is likely to be perceived by banks as a lower risk and the cost of borrowing is likely to be lower.

Risk bearing – a larger firm can be safer from the risk of failure if it has a more diversified product range. A larger firm may have greater resilience in the case of a downturn in its market because of larger reserves and greater scope to make cutbacks.

Social and welfare – larger firms are more likely to be able to justify additional benefits for employees such as pension funds, healthcare, sports and social facilities, which in turn can help attract and retain good employees.

External economies of scale

External economies of scale arise from firms in related industries operating in a concentrated geographical area; suppliers of services and raw materials to all these firms can do so more efficiently. Infrastructure such as roads and sophisticated telecommunications are easier to justify.

There is also likely to be a growing local pool of skilled labour as other local firms in the industry also train workers. This gives a larger and more flexible labour market in the area.

Diseconomies of scale

These are inefficiencies that can creep in when a firm operates on a larger scale (do not confuse with high capacity utilisation). The main diseconomies of scale are:

Lack of motivation – in larger firms, workers can feel that they are not appreciated or valued as individuals - see **Mayo** and **Herzberg**. It can be more difficult for managers in larger firms to develop the right kind of relationship with workers. If motivation falls, productivity may fall leading to inefficiencies.

Poor communication – it can be easier for smaller firms to communicate with all staff in a personal way. In larger firms, there is likely to be greater use written of notes rather than by explaining personally. Messages can remain unread or misunderstood and staff are not properly informed.

Co-ordination – a very large business takes a lot of organising, leading to an increase in meetings and planning to ensure that all staff know what they are supposed to be doing. New layers of management may be required, adding to costs and creating further links in the chain of communication.

UNIT-IV

FACTORS OF PRODUCTION

INTRODUCTION

1) Production is the process of conversion of inputs into outputs.
2) By production, we mean the process by which man utilizes or converts the natural resources, working upon them so as to make them satisfy human wants.
3) It is the creation of utility and addition of value. This creation of utility may be by way of creating goods in physical terms (called commodities) or non-physical terms (called services).
4) Production of all goods and services require the use of certain factors (or inputs). The inputs/resources used for production are called factors of production. These are namely land, labour, capital & entrepreneur.

LAND –

The term 'Land' in economics is often used in a wider sense. It does not mean only the surface of the soil, but it also includes all those natural resources which are the free gifts of nature.

It, therefore, means all the free gifts of nature. These natural gifts include: (i) rivers, forests, mountains and oceans; (ii) heat of sun, light, climate, weather, rainfall, etc. which are above the surface of land; (iii) minerals under the surface of the earth such as iron, coal, copper, water, etc. According to Marshall, "By land is meant… materials and forces which nature gives freely for man's aid in land, water, air, light and heat." Therefore, land is a stock of free gifts of nature.

Characteristics of Land:

Land possesses the following characteristics:

1. Free Gift of Nature:

Man has to make efforts in order to acquire other factors of production. But to acquire land no human efforts are needed. Land is not the outcome of human labour. Rather, it existed even long before the evolution of man.

2. Fixed Quantity:

The total quantity of land does not undergo any change. It is limited and cannot be increased or decreased with human efforts. No alteration can be made in the surface area of land.

3. Land is Permanent:

All man-made things are perishable and these may even go out of existence. But land is indestructible. Thus it cannot go out of existence. It is not destructible.

4. Land is a Primary Factor of Production:

In any kind of production process, we have to start with land. For example, in industries, it helps to provide raw materials, and in agriculture, crops are produced on land.

5. Land is a Passive Factor of Production:

This is because it cannot produce anything by itself. For example, wheat cannot grow on a piece of land automatically. To grow wheat, man has to cultivate land. Labour is an active factor but land is a passive factor of production.

6. Land is Immovable:

It cannot be transported from one place to another. For instance, no portion of India's surface can be transported to some other country.

7. Land has some Original Indestructible Powers:

There are some original and indestructible powers of land, which a man cannot destroy. Its fertility may be varied but it cannot be destroyed completely.

8. Land Differs in Fertility:

Fertility of land differs on different pieces of land. One piece of land may produce more and the other less.

9. Supply of Land is Inelastic:

The demand for a particular commodity makes way for the supply of that commodity, but the supply of land cannot be increased or decreased according to its demand.

10. Land has Many Uses:
We can make use of land in many ways. On land, cultivation can be done, factories can be set up, roads can be constructed, buildings can be raised and shipping is possible in the sea and big rivers.

LABOUR
Labour includes both physical and mental work undertaken for some monetary reward. In this way, workers working in factories, services of doctors, advocates, ministers, officers and teachers are all included in labour. Any physical or mental work which is not undertaken for getting income, but simply to attain pleasure or happiness, is not labour.
For example, the work of a gardener in the garden is called labour, because he gets income for it. But if the same work is done by him in his home garden, it will not be called labour, as he is not paid for that work. So, if a mother brings up her children, a teacher teaches his son and a doctor treats his wife, these activities are not considered 'labour' in economics. It is so because these are not done to earn income.

Characteristics of Labour:
Labour has the following peculiarities which are explained as under:
1. Labour is Perishable:
Labour is more perishable than other factors of production. It means labour cannot be stored. The labour of an unemployed worker is lost forever for that day when he does not work. Labour can neither be postponed nor accumulated for the next day. It will perish. Once time is lost, it is lost forever.
2. Labour cannot be separated from the Labourer:
Land and capital can be separated from their owner, but labour cannot he separated from a labourer. Labour and labourer are indispensable for each other. For example, it is not possible to bring the ability of a teacher to teach in the school, leaving the teacher at home. The labour of a teacher can work only if he himself is present in the class. Therefore, labour and labourer cannot be separated from each other.
3. Less Mobility of Labour:
As compared to capital and other goods, labour is less mobile. Capital can be easily transported from one place to other, but labour cannot be transported easily from its present place to other places. A labourer is not ready to go too far off places leaving his native place. Therefore, labour has less mobility.
4. Weak Bargaining Power of Labour:
The ability of the buyer to purchase goods at the lowest price and the ability of the seller to sell his goods at the highest possible price is called the bargaining power. A labourer sells his labour for wages and an employer purchases labour by paying wages. Labourers have a very weak bargaining power, because their labour cannot be stored and they are poor, ignorant and less organised.
Moreover, labour as a class does not have reserves to fall back upon when either there is no work or the wage rate is so low that it is not worth working. Poor labourers have to work for their subsistence. Therefore, the labourers have a weak bargaining power as compared to the employers.
5. Inelastic Supply of labour:
The supply of labour is inelastic in a country at a particular time. It means their supply can neither be increased nor decreased if the need demands so. For example, if a country has a scarcity of a particular type of workers, their supply cannot be increased within a day, month or year. Labourers cannot be 'made to order' like other goods.
The supply of labour can be increased to a limited extent by importing labour from other countries in the short period. The supply of labour depends upon the size of population. Population cannot be increased or decreased quickly. Therefore, the supply of labour is inelastic to a great extent. It cannot be increased or decreased immediately.
6. Labourer is a Human being and not a Machine:
Every labourer has his own tastes, habits and feelings. Therefore, labourers cannot be made to work like machines. Labourers cannot work round the clock like machines. After continuous work for a few hours, leisure is essential for them.

7. A Labourer sells his Labour and not Himself:
A labourer sells his labour for wages and not himself. 'The worker sells work but he himself remains his own property'. For example, when we purchase an animal, we become owners of the services as well as the body of that animal. But we cannot become the owner of a labourer in this sense.

8. Increase in Wages may reduce the Supply of Labour:
The supply of goods increases, when their prices increase, but the supply of labourers decreases, when their wages are increased. For example, when wages are low, all men, women and children in a labourer's family have to work to earn their livelihood. But when wage rates are increased, the labourer may work alone and his wife and children may stop working. In this way, the increase in wage rates decreases the supply of labourers. Labourers also work for less hours when they are paid more and hence again their supply decreases.

9. Labour is both the Beginning and the End of Production:
The presence of land and capital alone cannot make production. Production can be started only with the help of labour. It means labour is the beginning of production. Goods are produced to satisfy human wants. When we consume them, production comes to an end. Therefore, labour is both the beginning and the end of production.

10. Differences in the Efficiency of Labour:
Labourer differs in efficiency. Some labourers are more efficient due to their ability, training and skill, whereas others are less efficient on account of their illiteracy, ignorance, etc.

11. Indirect Demand for Labour:
The consumer goods like bread, vegetables, fruit, milk, etc. have direct demand as they satisfy our wants directly. But the demand for labourers is not direct, it is indirect. They are demanded so as to produce other goods, which satisfy our wants. So the demand for labourers depends upon the demand for goods which they help to produce. Therefore, the demand for labourers arises because of their productive capacity to produce other goods.

12. Difficult to find out the Cost of Production of Labour:
We can easily calculate the cost of production of a machine. But it is not easy to calculate the cost of production of a labourer i.e., of an advocate, teacher, doctor, etc. If a person becomes an engineer at the age of twenty, it is difficult to find out the total cost on his education, food, clothes, etc. Therefore, it is difficult to calculate the cost of production of a labourer.

13. Labour creates Capital:
Capital, which is considered as a separate factor of production is, in fact, the result of the reward for labour. Labour earns wealth by way of production. We know that capital is that portion of wealth which is used to earn income. Therefore, capital is formulated and accumulated by labour. It is evident that labour is more important in the process of production than capital because capital is the result of the working of labour.

14. Labour is an Active Factor of Production:
Land and capital are considered as the passive factors of production, because they alone cannot start the production process. Production from land and capital starts only when a man makes efforts. Production begins with the active participation of man. Therefore, labour is an active factor of production.

DIVISION OF LABOUR

Division of labour first originated from the division of workers in different occupations. Now, when the production is done on a large scale with the help of heavy machines, it is split up into a number of processes and many people join to produce an article.

It is called the division of labour. For instance, in a large scale readymade garment factory, a man does cutting of cloth, the second man stitches clothes with machines, the third buttons, the fourth makes folding and packing, etc.

This way of doing the work is called division of labour because different workers are engaged in performing different parts of production. In the words of Watson, "Production by division of labour consists in splitting up the productive process into its component parts."

In fact, one cannot produce all the goods he requires. Production has become so technical and complex that different workers are put to different tasks according to their capacity and ability. One becomes specialised in the production of those goods for which he or she is best suited. Different workers perform different parts of production on the basis of their specialisation.
The result is that goods come to the final shape with the cooperation of many workers. Thus, division of labour means that the main process of production is split up into many simple parts and each part is taken up by different workers who are specialised in the production of that specific part.

Forms of Division of Labour:
The division of labour has been divided into different forms by the economists which can be explained as follows:
1. Simple Division of Labour:
When the production is split up into different parts and many workers come together to complete the work, but the contribution of each worker cannot be known, it is called simple division of labour. For example, when many persons carry a huge log of wood, it is difficult to assign how much labour has been contributed by an individual worker. It is simple division of labour.
2. Complex Division of Labour:
When the production is split up into different parts and each part is performed by different workers who have specialised in it, it is called complex division of labour. For example, in a shoe factory one worker makes the upper portion, the second one prepares the soles, the third one stitches them, the fourth one polishes them, and so on. In this way, shoes are manufactured. It is a case of complex division of labour.
3. Occupational Division of Labour:
When the production of a commodity becomes the occupation of the worker, it is called occupational division of labour. Thus, the production of different goods has created different occupations. The caste system in India is perhaps the best example of the occupational division of labour. The work of farmers, cobblers, carpenters, weavers and blacksmiths isknown as occupational division of labour.
4. Geographical or Territorial Division of Labour:
Sometimes, due to different reasons, the production of goods is concentrated at a particular, place, state or country. This particular type of division of labour comes into being when the workers or factories having specialised in the production of a particular commodity are found at a particular place. That place may be the most suitable geographically for the production of that commodity. This is called the geographical or territorial division of labour. For example, Assam has specialised in the production of tea, whereas the textile industry is localised in Mumbai and the jute production in West Bengal.

Merits and Demerits of Division of Labour:
Division of labour possesses the following merits and demerits:

Its Merits:
Division of labour has the following merits:
1. Increase in Production:
With the adoption of division of labour, the total production increases. Adam Smith has explained the advantage of division of labour with the help of an example that a worker can produce only 20 pins daily. If the making of pins in a modern factory is divided into 18 processes, then 18 workers can produce 48,000 pins in a single day.
2. Increase in Efficiency of Labour:
With division of labour, a worker has to do the same work time and again, and he gets specialisation in it. In this way, the division of labour leads to a great increase in efficiency.
3. Increase in Skill:
Division of labour contributes to the development of skill, because with the repetition of the same work, he becomes specialised in it. This specialisation enables him to do the work in the best possible way, which improves his skill.

4. Increase in Mobility of Labour:
Division of labour facilitates greater mobility of labour. In it, the production is split up into different parts and a worker becomes trained in that very specific task in the production of the commodity which he performs time and again. He becomes professional, which leads to the occupational mobility. On the other hand, division of labour implies a large-scale production and labourers come to work from far and near. Thus, it increases geographical mobility of labour.

5. Increase in Use of Machines:
The division of labour is the result of the large-scale production, which implies more use of machines. On the other hand, the division of labour increases the possibility of the use of machines in the small-scale production also. Therefore, in modern times the use of machines is increasing continuously due to the increase in the division of labour.

6. Increase in Employment Opportunities:
Division of labour leads to the diversity of occupations which further leads to the employment opportunities. On the other hand, the scale of production being large, the number of employment opportunities also increases.

7. Work According to Taste:
Workers have their own taste in production. For example, a person can take up that type of job for which he considers himself to be the most suitable and which is in accordance with his taste. Division of labour extends the work to such an extent that every person can find work according to his taste and interest.

8. Work for Disable:
Division of labour splits up the production work in small processes and different persons can work at different places with the help of machines. Certain machines can be operated with the help of hands only and others with the help of foot as well. Therefore, the disabled persons can also find work according to their suitability.

9. Best Use of Tools:
In this system, it is not necessary to provide each worker with a complete set of tools. He needs a few tools only for the job in which he can make their best use. Therefore, the continuous use of tools is possible which are used at different stages.

10. Best Selection of the Workers:
Division of labour helps the employers in the best selection of workers.
As the work is divided into different parts and each part is taken up by such a worker who is more suitable for it, the employer can select very easily the man who is best suited for the work.

11. Saving of Capital and Tools:
Division of labour helps in the saving of capital and tools. It is not essential to provide a complete set of tools to every worker. He needs a few tools only for the job he has to do. Thus there is the saving of tools as well as capital. For instance, if a tailor stitches the shirt, he requires a sewing machine, scissors, etc. But on the basis of division of labour, one can do the cutting and the other can stitch the clothes. In this way, two tailors can work with the help of one pair of scissors and one machine only.

12. Goods of Superior Quality:
Division of labour is beneficial in making goods of superior quality. When the worker is entrusted with the work for which he is best suited, he will produce superior quality goods.

13. Saving of Time:
There is no need for the worker to shift from one process to another. He is employed in a definite process with certain tools. He, therefore, goes on working without loss of time, sitting at one place. Continuity in work also saves time and helps in more production at less cost.

14. Right Man at the Right Job:
Division of labour implies splitting up of production into a number of processes. Each person is given the job for which he is best suited. There will be no round pegs in square holes. In this way, a right man is placed at the right job.

15. Reduction in the Cost of Production:

If a shoe-maker makes himself two pairs of shoes daily, then four shoe-makers can make more than eighth pairs of shoes if they work in cooperation with each other. In this way, division of labour increases production which reduces the average cost of production. Saving of capital, tools and machinery, etc. also help in the reduction of cost of production.

16. Cheap Goods:

Division of labour helps in mass production. Thus production becomes less expensive and more economical. Therefore, cheaper goods are turned out, which improve the standard of living of the people.

17. Saving of Time and Expenses in Training:

Under division of labour, a worker has to train himself in a small part of production. There is no need to learn the whole process of production. It ensures saving of time as well as expenses in training.

18. Spirit of Co-operation among Workers:

Division of labour gives chances of working under the same roof and with the cooperation of each other. It further gives rise to the feeling of cooperation and trade unionism in their daily lives. The work cannot be completed unless they cooperate with each other. They help each other at the time of adversities as well.

19. Development of International Trade:

Division of labour increases the tendency of specialisation not only in the workers or industries, but in different countries also. On the basis of specialisation, every country produces only those goods in which it has a comparative advantage and imports such goods from those countries which have also greater comparative advantage. Therefore, division of labour is beneficial for the development of international trade also.

Its Demerits:

The division of labour has also certain demerits which are explained below:

1. Monotony:

Under division of labour, a worker has to do the same job time and again for years together. Therefore, after some time, the worker feels bored or the work becomes irksome and monotonous. There remains no happiness or pleasure in the job for him. It has an adverse effect on the production.

2. Loss of Joy:

In the absence of division of labour, he feels a lot of pleasure on the successful completion of his goods. But under division of labour, nobody can claim the credit of making it. The work gives him neither pride nor pleasure. Therefore, there is total loss of joy, happiness and interest in the work.

3. Loss of Responsibility:

Many workers join hands to produce a commodity. If the production is not good and adequate, none can be held responsible for it. It is generally said that 'every man's responsibility is no man's responsibility.' Therefore, the division of labour has the disadvantage of loss of responsibility.

4. Loss of Mental Development:

When the labourer is made to work only on a part of the work, he does not possess complete knowledge of the work. Thus, division of labour proves to be a hurdle in the way of mental development.

5. Loss of Efficiency:

Division of labour is sometimes accounted for the loss of efficiency. For instance, if a cobbler goes on cutting the leather for a long time, he may lose the efficiency of making shoes.

6. Reduction in Mobility of Labour:

The mobility of labour is reduced on account of division of labour. The worker performs only a part of the whole task. He is trained to do that much part only. So, it may not be easy for him to trace out exactly the same job somewhere else, if he wants to change the place. In this way, the mobility of labour gets retarded.

7. Increased Dependence:

When the production is split up into a number of processes and each part is performed by different workers, it may lead to over-dependence. For instance, in the case of a readymade garments factory, if the man cutting cloth is lazy, the work of stitching, buttoning, etc. will suffer. Therefore, increased dependence is the result of division of labour.

8. Danger of Unemployment:

The danger of unemployment is another disadvantage of division of labour. When the worker produces a small part of goods, he gets specialised in it and he does not have complete knowledge of the production of goods. For instance, a man is expert in buttoning the clothes. If he is dismissed from the factory, it is difficult for him to find the job of buttoning. Thus division of labour has a fear of unemployment.

9. Increased Dependence on Machines:

As division of labour increases, there will be an increased use of machines. Almost all the workers work on different types of machines. It is difficult for them to work without machines. Thus, division of labour increases the dependence on machines.

10. Danger of Over-Production:

Over-production means that the supply of production is comparatively more than its demand in the market. Because of the division of labour, when production is done on a large scale, the demand for production lags much behind its increased supply. Such conditions create overproduction which is very harmful for the producers as well as for the workers when they become unemployed.

11. Exploitation of Labour:

Division of labour is concerned with large scale production in big factories which are owned by the capitalists. No poor worker can afford to start his own production. Therefore, they have to seek employment in big factories of the capitalists. These employers pay less wages to them as compared to their marginal productivity, because there is no other alternative to the workers but to work at very low wages. Therefore, division of labour results in the exploitation of labour.

12. Evils of Factory System:

The modern industrial or factory system has been developed as a result of the division of labour. This system further gives rise to the evils like dense population, pollution, bad habits of gambling and drinking, low standard of living, poor food, clothes and housing, etc.

13. Employment of Women and Children:

Division of labour results in the large scale production in which children and women are also employed. It is because a simple and small part of the whole task can easily be performed by them. Thus the number of employed women and children increases. They are also exploited by the employers by paying them lower wages.

14. Industrial Disputes:

The industrial disputes mean strikes by workers, closure of factory, etc. due to clashes between the employees and the employers. Division of labour results in the division of society into workers and employers. The employer always tries to increase his profits by exploiting the workers and workers form trade unions against the employers to put an end to their exploitation or to make them increase their wages. It gives rise to a severe conflict between the employers and the workers in the form of strikes, closures and lockouts of factories.

Conclusion:

To sum up, we can say that division of labour is beneficial to the workers, to the producers and to the society as a whole. Its merits outweigh its demerits.

EFFICIENCY OF LABOUR :- The working capacity of the labour is called his efficiency being given the same time limit and given the same type of work.

FACTORS DETERMINING THE EFFICIENCY OF LABOUR

1. PERSONAL QUALITIES :- Some people have some personal qualities and they are suitably built foe certain heavy labour. On other hand some people are very suitable for mental labour. Family background also pays very important role in this regard.

2. EDUCATION :- It is the basic and essential element which determines the efficiency of labour. Educated labourer is more efficient as compared to the illiterate worker.

3. TRAINING AND SKILL :- The modern world requires highly skilled labourers. A labourer with sound technical training will be more effective as compared to a labourer who has no training. It increases the efficiency of the labourer.

4. CLIMATIC CONDITIONS :- Climates also plays an important role in increasing or decreasing the efficiency. Hot weather has a vital factor for the low efficiency of labour in Asia and Middle East. On other hand cold weather is an important element for increasing the efficiency in labour in U.S.A and Europe.

5. WAGES AND BENEFITS :- If wages, allowances, bonuses and other frigs benefits are given to the workers, then their working efficiency increases. Labourer works very hard if he has attractive salary. On other hand if wages rate is low then efficiency of the labourer will be also low.

6. COMBINATION OF PRODUCTION FACTORS :- If the other three factors of production combination is ideal then efficiency of labourer will be high otherwise low.

7. WORKING HOURS :- If working hours of labourer are reasonable then the efficiency will be high. If the working time is very long and without extra payment then efficiency of the worker will be low.

8. ENVIRONMENT :- If the working environment is pleasant then efficiency of labourer will be high. It is observed that labourer working in air conditions rooms and healthy conditions are more efficient as compared to others.

9. RACIAL QUALITIES :- By birth some races are very hard working and strong built so they are more efficient as compared to other races.

FACTORS PROMOTING EFFICIENCY OF LABOUR

Following are the important factors which promote the efficiency of labour.

1. INCREASE IN WAGES :- Increase in wages and fringe benefits promote the efficiency of labour. When wages and incentives will increase it will make the labourer hard worker and efficient.

2. TECHNICAL EDUCATION :- Vocational, technical and commercial colleges, should be opened to provide technical skill to the people. Modern industry, agriculture, banking, transport and commerce require highly skilled persons. Such type of training and skill is provided in the colleges and universities.

3. CARE OF HEALTH :- Health facilities should be provided to the labourers. A healthy worker can work more efficiently as compared to sick worker. All the factory owners should opened the health clinics in their factories and regular medical check-up should be compulsory.

4. INCREASES IN ALLOWANCES :- Various types of allowances like dearness and bonus must be increased. Special allownces should be given to the efficient workers.

5. LABOUR LAWS :- Government should also frame the strict labour laws. In case of accident special

compensation should be given. In case of industrial dispute courts should be established. This step will provide the security to the labourers and they will work with full concentration.

6. SPECIAL STORES :- To provide the goods on lower rates to the labourers special stores should be opened for the workers.

7. ESTABLISHMENT OF THE CANTEEN :- Lunch and dinner facility should be provided to the workers. On the lower rates food should be provided during the working interval. In this way time of the workers will be saved and their efficiency will increase.

MOBILITY OF LABOUR

Mobility refers to the willingness and actual movement of labour from one place to another-near or far and distant. This mobility may be for searching jobs or for better job prospects. This mobility may be territorial, occupational or intra-regional.

FACTORS AFFECTING MOBILITY OF LABOUR:

1) Means of transport and communication
2) Knowledge and Information
3) Stage of development
4) Family bonds
5) Urge to excel

CAPITAL

Meaning

The term, 'Capital', in economics does not mean merely money as the accountants call it. Capital is that part of wealth which can be used for further production of wealth. According to Marshall, "Capital consists of all kinds of wealth, other than free gifts of nature, which yield income." Therefore, every type of wealth other than land which helps in further production of income is called capital.

In this way, money, machine, factories, etc. are included in capital provided they are used in production. For instance, if a man has an income of Rs 10,000 per month and out of it he invests Rs 6,000 in a business, this amount of Rs 6000 is called capital. In the same way, plough, tractor and other agricultural implements of farmers are also capital. The house in which a man resides is his wealth and the house which is given on rent is his capital.

Characteristics of Capital:

Capital has its own peculiarities which distinguish it from other factors of production. Capital possesses the following main characteristics:

1. Man Produces Capital:

Capital is that wealth which is used in the production of goods. Capital is the result of human labour. Thus, every type of capital such as roads, machines, buildings and factories etc. are produced by man.

2. Capital is a Passive Factor of Production:

Capital cannot produce without the help of the active services of labour. To produce with machines, labour is required. Thus, labour is an active, whereas capital is a passive factor of production. Capital on its own cannot produce anything until labour works on it.

3. Capital is a Produced Means of Production:

The composition or supply of capital is not automatic, but it is produced with the joint efforts of labour and land. Therefore, capital is a produced means of production.

4. Capital is Variable:

The total supply of land cannot be changed, whereas the supply of capital can be increased or decreased. If the residents of a country produce more or save more from their income, and these savings are invested in factories or capital goods, it increases the supply of capital.

5. Capital is more Mobile than other Factors of Production:
Of all the factors of production, capital is the most mobile. Land is perfectly immobile. Labour and entrepreneur also lack mobility. Capital can be easily transported from one place to another.

6. Capital Depreciates:
As we go on using capital, the value of capital goes on depreciating. When machines are used continuously for some time, these depreciate and their value falls.

7. Capital is Stored-up Labour:
Scholars like Marx admit that capital is stored-up labour. By putting in his labour man earns wealth. A part of this wealth is spent on consumption of goods and the rest of it is saved. When saving is invested, it becomes capital. In other words, capital is the result of accumulation of savings of a man. Therefore, capital is stored-up labour.

8. Capital is Destructible:
All capital goods are destructible and are not permanent. Because of the continuous use, machines and tools become useless with the passage of time.

Classification of Capital
The functional classification of capital is as follows:

1) **Real capital and financial capital:** Real capital refers to physical goods (capital goods as they are known to be) used for further production like, equipments, machinery, structure, plants etc. Financial capital is monetary resources available for investment into these physical goods.
2) **Private capital and social capital:** Private capital includes the amount and type of investment made by the private sector, usually, for earning some profits. Social capital, on the other hand, is created and developed by the state, for example, construction of roads, bridges, educational institutions and some such economic organizations.
3) **Fixed and Floating capital:** The long-term capital like plant and machinery is fixed capital whereas cash, inventories required for production is floating or circulating capital.
4) **Tangible and Intangible capital:** Any capital which has physical manifestation like plant and machinery, building etc. is called tangible capital. Intangible capital is not physically existing but contributing to the production of goods and services like goodwill, brand image etc.
5) **Indigenous and Foreign capital:** Such capital having its sources from within the country is called indigenous capital whereas the capital, in any form, brought from abroad is called foreign capital.

Capital Formation
Production is an ongoing process. Whatever amount of goods and services are produced in a certain period of time (usually in a year) are not consumed instantaneously. A part of it is set aside for "Some future use" in production. This keeps on increasing and used for further production sometime somewhere. This 'setting aside of a portion of current production' and used for further production is known as 'capital formation'. We may define capital formation as the surplus of production over consumption in a certain period which is used for further production.

Role of Capital Formation:

1) Capital formation plays a very crucial role in the process of economic development of a country. Higher the rate of capital formation higher will be the growth prospects of the economy. The fact is that capital formation shows the potentials of the economy.
2) Another contribution of capital accumulation (or formation) is that it makes the technology development possible in an economy. Without capital formation, new discoveries, inventions will remain unused and efforts in researching and developing them will go waste.
3) Capital formation also creates job opportunities in the economy both at the level of production of capital and at the level of utilization of such capital.

Stages of Capital Formation:

- **Stage 1:** Savings
- **Stage 2:** Mobilisation of Savings
- **Stage 3:** Investment

ORGANIZATION AND ENTERPRISE (ENTREPRENEURSHIP)

Features of Entrepreneurship

The entrepreneur as an organizer of the process of production is the fore-runner of economic development of a country.

1. Scare human resource

Entrepreneurship is a very scarce human factor as it involves specific talent, organizational capacity, innovative sprit and boldness to bear risk which is not found in every person. In developing countries like India lack of entrepreneurship is a major impediment to development.

2. Heterogeneous factor

Entrepreneurship is a heterogeneous factor of production because efficiency, talents, organizing skills, ability to bear risk, foresights and innovating capacities, etc. vary from entrepreneur to entrepreneur. The nature of enterprise varies with various forms of business organizations like sole trading, partnership, co-operatives, Joint Stock Company and public undertakings. In a small business, the same person may work as an entrepreneur, manager and capitalist.

3. Indispensable factor

In modern business, entrepreneur is a very important factor of production as he organizes production of goods & services by coordinating the other factors in an optimum way. He is an organiser & owner of the firm. Production is impossible in his absence.

4. Intangible factor

Entrepreneurship is an abstract phenomenon. It is intangible. Entrepreneurial efforts cannot be measured in quantitative terms while we can measure in terms of hours of work and number of days. We can calculate the number of individual workers and their contribution to the firm but it is not possible to measure entrepreneurship.

5. Highly mobile

Of all factors entrepreneur possess a higher degree of mobility as he can easily move from one industry to another or from one region to another. An entrepreneur's ability to move from one industry to another depends upon his knowledge, experience and specialization.

6. Cannot be Bought & Sold

Land labour and capital can be bought and sold in factor markets but it is not possible to deal with entrepreneurs in a factor market. Since enterprise is an intangible factor, it cannot be bought and sold. Hence, like land, labour and capital market there is no entrepreneurial market where entrepreneurship can be bought and sold. Transaction is not possible in case of enterpreneurship.

We cannot derive the demand and supply curves in case of entrepreneur. Hence, the Demand and Supply Theory of value cannot be applied to the factor enterpreneurhip.

7. Residual reward

Entrepreneurship is a reward in terms of profit which is a residual reward, i.e. an income which is left after meeting all business expenses from the total sales revenue.

Functions of an Entrepreneur:

1) Co-ordinating functions
2) Risk bearing functions
3) Innovating functions

UNIT-V

What is Market?

Meaning

"Market refers to an arrangement, whereby buyers and sellers come in contact with each other directly or indirectly, to buy or sell goods."

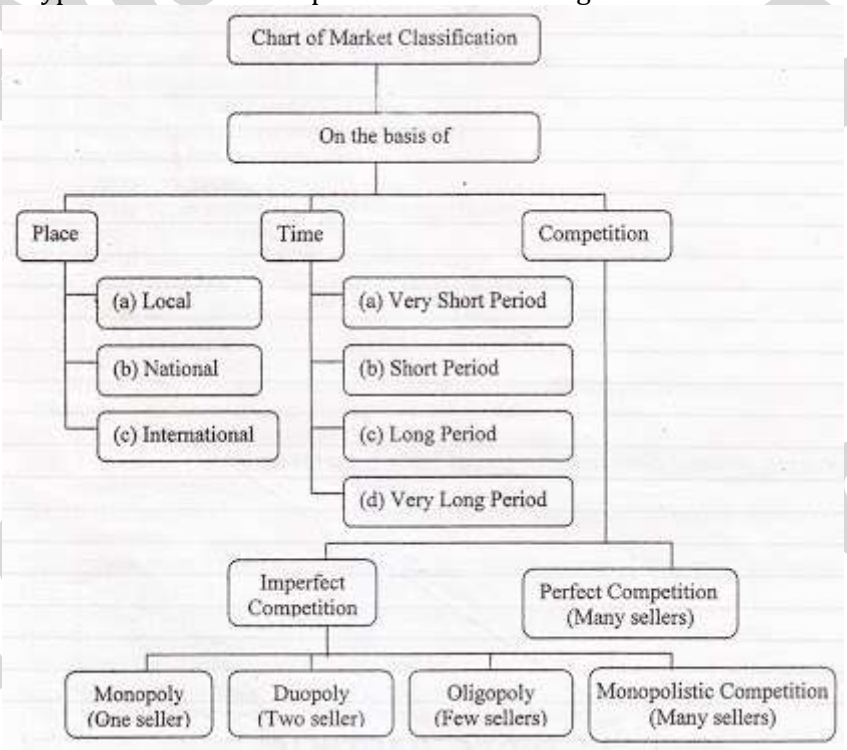
Thus, above statement indicates that face to face contact of buyer and seller is not necessary for market. E.g. In stock or share market, the buyer and seller can carry on their transactions through internet. So internet, here forms an arrangement and such arrangement also is included in the market.

Characteristics of Market

1. Existence of commodity which is to be bought and sold.
2. The existence of buyers and sellers.
3. A place, be it a certain region, a country or the entire world.
4. Communication between buyers and sellers that only one price should prevail for the same commodity at the same time.

Classification or Types of Market

The classification or types of market are depicted in the following chart.



Generally, the market is classified on the basis of:

1. Place,
2. Time and
3. Competition.

On the basis of **Place**, the market is classified into:

1. Local Market or Regional Market.
2. National Market or Countrywide Market.
3. International Market or Global Market.

On the basis of **Time**, the market is classified into:

1. Very Short Period Market.

2. Short Period Market.
3. Long Period Market.
4. Very Long Period Market.

On the basis of **Competition/Market Structure**, the market is classified into:

1. Perfectly Competitive Market Structure.
2. Imperfectly Competitive Market Structure.

(Market structure refers to number and types of firms operating in the industry.)

Both these market structures widely differ from each other in respect of their features, price, etc. Under imperfect competition, there are different forms of markets like monopoly, duopoly, oligopoly and monopolistic competition.

1. A monopoly has only one or a single (mono) seller.
2. Duopoly has two (duo) sellers.
3. Oligopoly has little or fewer (oligo) number of sellers.
4. Monopolistic competition has many or several numbers of sellers.

The suffix poly has its origin from Greek word *Polus* which means many seller.

PERFECT COMPETITION

What is Perfect Competition?

1) Perfect Competition refers to a market situation where there are very large number of buyers and sellers dealing in a homogenous product at a price fixed by the market.
2) Perfect Competition is a market structure where there is a perfect degree of competition and single price prevails.
3) The concept of Perfect Competition was introduced by Dr. Alfred Marshall.
4) Nothing is 100% perfect in this world. So, this states that perfect competition is only a theoretical possibility and it does not exist in reality.

Main Features of Perfect Competition ↓

The following are the characteristics or main features of perfect competition :-

1. Many Sellers

In this market, there are many sellers who form total of market supply. Individually, seller is a firm and collectively, it is an industry. In perfect competition, price of commodity is decided by market forces of demand and supply. i.e. by buyers and sellers collectively. Here, no individual seller is in a position to change the price by controlling supply. Because individual seller's individual supply is a very small part of total supply. So, if that seller alone raises the price, his product will become costlier than other and automatically, he will be out of market. Hence, that seller has to accept the price which is decided by market forces of demand and supply. This ensures single price in the market and in this way, seller becomes price taker and not price maker.

2. Many Buyers

Individual buyer cannot control the price by changing or controlling the demand. Because individual buyer's individual demand is a very small part of total demand or market demand. Every buyer has to accept the price decided by market forces of demand and supply. In this way, all buyers are price takers and not price makers. This also ensures existence of single price in market.

3. Homogenous Product

In this case, all sellers produce homogeneous i.e. perfectly identical products. All products are perfectly same in terms of size, shape, taste, colour, ingredients, quality, trade marks etc.

4. Zero Advertisement Cost
Since all products are identical in features like quality, taste, design etc., there is no scope for product differentiation. So advertisement cost is nil.

5. Free Entry and Exit
There are no restrictions on entry and exit of firms. This feature ensures existence of normal profit in perfect competition. When profit is more, new firms enter the market and this leads to competition. Entry of new firms competing with each other results into increase in supply and fall in price. So, this reduces profit from abnormal to normal level.
When profit is low (below normal level), some firms may exit the market. This leads to fall in supply. So remaining firms raise their prices and their profits go up. So again this ensures normal level of profit.

6.Perfect Knowledge
On the front of both, buyers and sellers, perfect knowledge regarding market and pricing conditions is expected. So, no buyer will pay price higher than market price and no seller will charge lower price than market price.

7. Perfect Mobility of Factors
This feature is essential to keep supply at par with demand. If all factors are easily mobile (moveable) from one line of production to another, then it becomes easy to adjust supply as per demand.
Whenever demand is more, additional factors should be moved into industry to increase supply and vice versa. In this way, with the help of stable demand and supply, we can maintain single price in the Market.

8. No Government Intervention
Since market has been controlled by the forces of demand and supply, there is no government intervention in the form of taxes, subsidies, licensing policy, control over the supply of raw materials, etc.

9. No Transport Cost
It is assumed that buyers and sellers are close to market, so there is no transport cost. This ensures existence of single price in market.

IMPERFECT COMPETITION
It is an important market category wherein individual firms exercise control over the price to a smaller or larger degree depending upon the degree of imperfection present in a case.

A) Monopoly

1. The term monopoly is derived from Greek words '*mono*' which means single and '*poly*' which means seller. So, monopoly is a market structure, where there is only a single seller producing a product having no close substitutes.
2. This single seller may be in the form of an individual owner or a single partnership or a Joint Stock Company. Such a single firm in market is called monopolist. Monopolist is price maker and has a control over the market supply of goods. But it does not mean that he can set both price and output level. A monopolist can do either of the two things i.e. price or output. It means he can fix either price or output but not both at a time.

Characteristics / Features of Monopoly
Following are the features or characteristics of Monopoly :-

1. A single seller has complete control over the supply of the commodity.
2. There are no close substitutes for the product.
3. There is no free entry and exit because of some restrictions.

4. There is a complete negation of competition.
5. Monopolist is a price maker.
6. Since there is a single firm, the firm and industry are one and same i.e. firm coincides the industry.
7. Monopoly firm faces downward sloping demand curve. It means he can sell more at lower price and vice versa. Therefore, elasticity of demand factor is very important for him.
8. No advertisement cost

Classification / Kinds / Types of Monopoly

1. Perfect Monopoly

It is also called as absolute monopoly. In this case, there is only a single seller of product having no close substitute; not even remote one. There is absolutely zero level of competition. Such monopoly is practically very rare.

2. Imperfect Monopoly

It is also called as relative monopoly or limited monopoly. It refers to a single seller market having no close substitute. It means in this market, a product may have a remote substitute. So, there is fear of competition to some extent e.g. Mobile (Cellphone) telcom industry (e.g. vodaphone) is having competition from fixed landline phone service industry (e.g. BSNL).

3. Private Monopoly

When production is owned, controlled and managed by the individual, or private body or private organization, it is called private monopoly. e.g. Tata, Reliance, Bajaj, etc. groups in India. Such type of monopoly is profit oriented.

4. Public Monopoly

When production is owned, controlled and managed by government, it is called public monopoly. It is welfare and service oriented. So, it is also called as 'Welfare Monopoly' e.g. Railways, Defence, etc.

5. Simple Monopoly

Simple monopoly firm charges a uniform price or single price to all the customers. He operates in a single market.

6. Discriminating Monopoly

Such a monopoly firm charges different price to different customers for the same product. It prevails in more than one market.

7. Legal Monopoly

When monopoly exists on account of trademarks, patents, copy rights, statutory regulation of government etc., it is called legal monopoly. Music industry is an example of legal monopoly.

8. Natural Monopoly

It emerges as a result of natural advantages like good location, abundant mineral resources, etc. e.g. Gulf countries are having monopoly in crude oil exploration activities because of plenty of natural oil resources.

9. Technological Monopoly

It emerges as a result of economies of large scale production, use of capital goods, new production methods, etc. E.g. engineering goods industry, automobile industry, software industry, etc.

10. Joint Monopoly

A number of business firms acquire monopoly position through amalgamation, cartels, syndicates, etc, it becomes joint monopoly. e.g. Actually, pizza making firm and burger making firm are competitors of

each other in fast food industry. But when they combine their business, that leads to reduction in competition. So they can enjoy monopoly power in market.

Monopolistic Competition

1. Pure monopoly and perfect competition are two extreme cases of market structure. In reality, there are markets having large number of producers competing with each other in order to sell their product in the market. Thus, there is monopoly on one hand and perfect competition on other hand. Such a mixture of monopoly and perfect competition is called as monopolistic competition. It is a case of imperfect competition.
2. Monopolistic competition has been introduced by American economist Prof. Edward Chamberlin, in his book 'Theory of Monopolistic Competition' published in 1933.

Features of Monopolistic Competition ↓

The following are the features or characteristics of monopolistic competition :-

1. Large Number of Sellers

There are large number of sellers producing differentiated products. So, competition among them is very keen. Since number of sellers is large, each seller produces a very small part of market supply. So no seller is in a position to control price of product. Every firm is limited in its size.

2. Product Differentiation

It is one of the most important features of monopolistic competition. In perfect competition, products are homogeneous in nature. On the contrary, here, every producer tries to keep his product dissimilar than his rival's product in order to maintain his separate identity. This boosts up the competition in market. So, every firm acquires some monopoly power.

3. Freedom of Entry and Exit

This feature leads to stiff competition in market. Free entry into the market enables new firms to come with close substitutes. Free entry or exit maintains normal profit in the market for a longer span of time.

4. Selling Cost

It is a unique feature of monopolistic competition. In such type of market, due to product differentiation, every firm has to incur some additional expenditure in the form of selling cost. This cost includes sales promotion expenses, advertisement expenses, salaries of marketing staff, etc.
But on account of homogeneous product in perfect competition and zero competition in monopoly, selling cost does not exist there.

5. Absence of Interdependence

Large numbers of firms are different in their size. Each firm has its own production and marketing policy. So no firm is influenced by other firm. All are independent.

6. Two Dimensional Competition

Monopolistic competition has two types of competition aspects viz.

i. Price competition i.e. firms compete with each other on the basis of price.
ii. Non price competition i.e. firms compete on the basis of brand, product quality advertisement.

7. Concept of Group

In place of Marshallian concept of industry, Chamberlin introduced the concept of Group under monopolistic competition. An industry means a number of firms producing identical product. A group means a number of firms producing differentiated products which are closely related.

8. Falling Demand Curve
In monopolistic competition, a firm is facing downward sloping demand curve i.e. elastic demand curve. It means one can sell more at lower price and vice versa.

Oligopoly
The term oligopoly is derived from two Greek words: 'oligi' means few and 'polein' means to sell. Oligopoly is a market structure in which there are only a few sellers (but more than two) of the homogeneous or differentiated products. So, oligopoly lies in between monopolistic competition and monopoly.
Oligopoly refers to a market situation in which there are a few firms selling homogeneous or differentiated products. Oligopoly is, sometimes, also known as 'competition among the few' as there are few sellers in the market and every seller influences and is influenced by the behaviour of other firms.

Example of Oligopoly:
In India, markets for automobiles, cement, steel, aluminium, etc, are the examples of oligopolistic market. In all these markets, there are few firms for each particular product.
DUOPOLY is a special case of oligopoly, in which there are exactly two sellers. Under duopoly, it is assumed that the product sold by the two firms is homogeneous and there is no substitute for it. Examples where two companies control a large proportion of a market are: (i) Pepsi and Coca-Cola in the soft drink market; (ii) Airbus and Boeing in the commercial large jet aircraft market; (iii) Intel and AMD in the consumer desktop computer microprocessor market.

Types of Oligopoly:
1. Pure or Perfect Oligopoly:
If the firms produce homogeneous products, then it is called pure or perfect oligopoly. Though, it is rare to find pure oligopoly situation, yet, cement, steel, aluminum and chemicals producing industries approach pure oligopoly.

2. Imperfect or Differentiated Oligopoly:
If the firms produce differentiated products, then it is called differentiated or imperfect oligopoly. For example, passenger cars, cigarettes or soft drinks. The goods produced by different firms have their own distinguishing characteristics, yet all of them are close substitutes of each other.

3. Collusive Oligopoly:
If the firms cooperate with each other in determining price or output or both, it is called collusive oligopoly or cooperative oligopoly.

4. Non-collusive Oligopoly:
If firms in an oligopoly market compete with each other, it is called a non-collusive or non-cooperative oligopoly.

Features of Oligopoly:
The main features of oligopoly are elaborated as follows:
1. Few firms:
Under oligopoly, there are few large firms. The exact number of firms is not defined. Each firm produces a significant portion of the total output. There exists severe competition among different firms and each firm try to manipulate both prices and volume of production to outsmart each other. For example, the market for automobiles in India is an oligopolist structure as there are only few producers of automobiles.

The number of the firms is so small that an action by any one firm is likely to affect the rival firms. So, every firm keeps a close watch on the activities of rival firms.

2. Interdependence:
Firms under oligopoly are interdependent. Interdependence means that actions of one firm affect the actions of other firms. A firm considers the action and reaction of the rival firms while determining its price and output levels. A change in output or price by one firm evokes reaction from other firms operating in the market.
For example, market for cars in India is dominated by few firms (Maruti, Tata, Hyundai, Ford, Honda, etc.). A change by any one firm (say, Tata) in any of its vehicle (say, Indica) will induce other firms (say, Maruti, Hyundai, etc.) to make changes in their respective vehicles.

3. Non-Price Competition:
Under oligopoly, firms are in a position to influence the prices. However, they try to avoid price competition for the fear of price war. They follow the policy of price rigidity. Price rigidity refers to a situation in which price tends to stay fixed irrespective of changes in demand and supply conditions. Firms use other methods like advertising, better services to customers, etc. to compete with each other.
If a firm tries to reduce the price, the rivals will also react by reducing their prices. However, if it tries to raise the price, other firms might not do so. It will lead to loss of customers for the firm, which intended to raise the price. So, firms prefer non- price competition instead of price competition.

4. Barriers to Entry of Firms:
The main reason for few firms under oligopoly is the barriers, which prevent entry of new firms into the industry. Patents, requirement of large capital, control over crucial raw materials, etc, are some of the reasons, which prevent new firms from entering into industry. Only those firms enter into the industry which is able to cross these barriers. As a result, firms can earn abnormal profits in the long run.

5. Role of Selling Costs:
Due to severe competition 'and interdependence of the firms, various sales promotion techniques are used to promote sales of the product. Advertisement is in full swing under oligopoly, and many a times advertisement can become a matter of life-and-death. A firm under oligopoly relies more on non-price competition. Thus, Selling costs are more important under oligopoly than under monopolistic competition.

6. Group Behaviour:
Under oligopoly, there is complete interdependence among different firms. So, price and output decisions of a particular firm directly influence the competing firms. Instead of independent price and output strategy, oligopoly firms prefer group decisions that will protect the interest of all the firms. Group Behaviour means that firms tend to behave as if they were a single firm even though individually they retain their independence.

7. Nature of the Product:
The firms under oligopoly may produce homogeneous or differentiated product.
i. If the firms produce a homogeneous product, like cement or steel, the industry is called a pure or perfect oligopoly.
ii. If the firms produce a differentiated product, like automobiles, the industry is called differentiated or imperfect oligopoly.

8. Indeterminate Demand Curve:
Under oligopoly, the exact behaviour pattern of a producer cannot be determined with certainty. So, demand curve faced by an oligopolist is indeterminate (uncertain). As firms are inter-dependent, a firm

cannot ignore the reaction of the rival firms. Any change in price by one firm may lead to change in prices by the competing firms. So, demand curve keeps on shifting and it is not definite, rather it is indeterminate.

Duopoly
Duopoly is a limiting case of oligopoly, in the sense that it has all the characteristics of oligopoly except the number of sellers which are only two incase of duopoly.

Examples are:
Pepsi and Coca-Cola soft drinks.

Price Determination under Perfect Competition

1. In prefect competition, price is determined by the market forces of demand and supply. All buyers and sellers are price takers and not price makers. Buyer represents demand side in the market. Every rational buyer aims at maximising his satisfaction by purchasing more at lower price and lower at higher price. This is called demand behaviour of buyer i.e. Law of Demand.
2. Seller represents supply side in the market. Every rational seller aims at maximizing his profits by selling more at higher price and lesser at lower price. This is called supply behaviour of seller i.e. Law of supply. But at a common price, buyer is ready to demand a particular quantity of goods and seller is also ready to supply exactly the same quantity of goods to buyer, such common price is called 'Equilibrium Price' and such quantity is called 'Equilibrium Quantity'.

"***Equilibrium Price is a price which equates both demand and supply***".

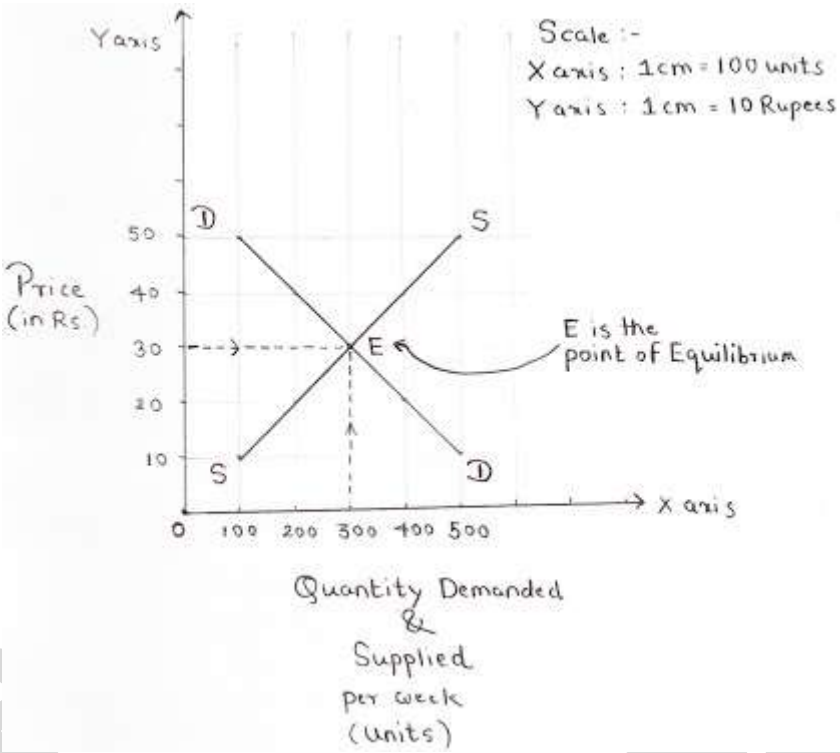
Table - Sample Demand and Supply Schedules

Demand and Supply Schedules

Price per unit of commodity	Quantity demanded per week	Quantity Supplied per week
(Rs.)	(Units)	(Units)
50	100	500
40	200	400
30	300	300
20	400	200
10	500	100

It is the price at which total demand is exactly equal to total supply. Graphically it is the point where DD curve and SS curve intersect each other.

Graph - Equilibrium Price Determination



In the above graphical diagram, the following points have been observed :-

1. On X axis, quantity demand and supplied per week has been given and on Y axis, price has been given.
2. Buyers are purchasing more at lower price and vice versa. This negative relationship is shown by downward sloping DD curve.
3. Sellers are selling more at higher price and vice versa. This positive relationship is shown by upward sloping SS curve.
4. As per the data given in table, Rs. 30 is that price at which demand equates supply (300 units). So, Rs. 30 is an equilibrium price and 300 units is an equilibrium quantity.
5. Suppose, price fails to Rs. 20/-, So this results into increase in demand (as per Law of Demand) and decrease in supply (as per Law of Supply). Since DD > SS, i.e. because of low supply, sellers will be dominant and competition will be among buyers, this leads to rise in price level. (i.e. from Rs. 20 to Rs. 30) Again price will come back at original level i.e. equilibrium price (Rs. 30).
6. Suppose, supply exceeds demand (DD < SS) now buyers become dominant and competition will be among sellers. This leads to downfall in price. (i.e. from Rs. 40 to Rs.30). Again price will come back to original level. i.e. equilibrium price (Rs. 30).
7. Such automatic adjustment by demand and supply forces will keep single price in market.

Price Determination under Monopoly

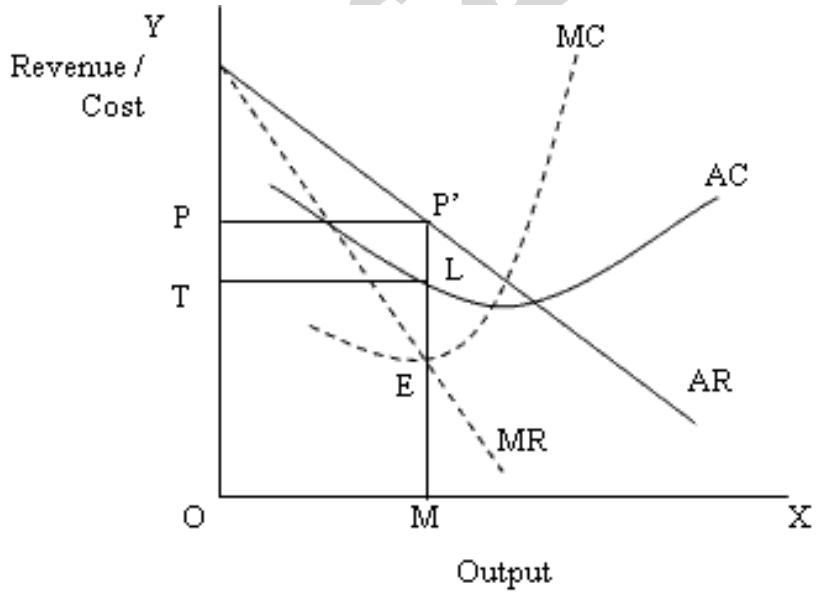
1. *Monopoly is that market form in which a single producer controls the whole supply of a single commodity which has no close substitute.*
2. From this definition there are two points that must be noted:

(i) <u>Single Producer:</u> There must be only one producer who may be an individual, a partnership firm or a joint stock company. Thus single firm constitutes the industry. The distinction between firm and industry disappears under conditions of monopoly.

(ii) <u>No Close Substitute:</u> The commodity produced by the producer must have no closely competing substitutes, if he is to be called a monopolist. This ensures that there is no rival of the

monopolist. Therefore, the cross elasticity of demand between the product of the monopolist and the product of any other producer must be very low.

3. A firm under monopoly faces a downward sloping demand curve or average revenue curve. Further, in monopoly, since average revenue falls as more units of output are sold, the marginal revenue is less than the average revenue. In other words, under monopoly the MR curve lies below the AR curve.
4. The Equilibrium level in monopoly is that level of output in which marginal revenue equals marginal cost. The producer will continue producer as long as marginal revenue exceeds the marginal cost. At the point where MR is equal to MC the profit will be maximum and beyond this point the producer will stop producing.



5. It can be seen from the diagram that up till OM output, marginal revenue is greater than marginal cost, but beyond OM the marginal revenue is less than marginal cost. Therefore, the monopolist will be in equilibrium at output OM where marginal revenue is equal to marginal cost and the profits are the greatest. The corresponding price in the diagram is MP' or OP. It can be seen from the diagram at output OM, while MP' is the average revenue, ML is the average cost, therefore, P'L is the profit per unit. Now the total profit is equal to P'L (profit per unit) multiply by OM (total output).
6. In the short run, the monopolist has to keep an eye on the variable cost, otherwise he will stop producing. In the long run, the monopolist can change the size of plant in response to a change in demand. In the long run, he will make adjustment in the amount of the factors, fixed and variable, so that MR equals not only to short run MC but also long run MC.

Price Determination under Monopolistic Competition:

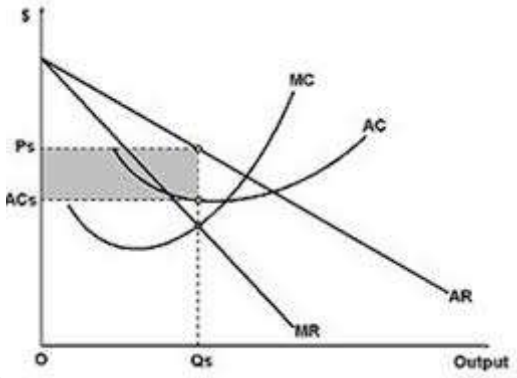
Now the question arises at which price-output level the monopolistic competitive firm will be in equilibrium position? Here we have to remember that every seller, whether a monopolist or one working under perfectly or imperfectly competitive situations, wants to maximise his profits.

The seller will go on producing till the extra receipts to be had from additional production exceed the extra cost incurred in the production process. In other words, profits will be maximised when marginal revenue is equal to marginal cost. So long as marginal revenue is greater than marginal cost, the seller will find it profitable to expand his output, and if marginal revenue is less than marginal cost, obviously it is to his advantage to reduce his output to the point where marginal revenue is equal to marginal cost. In the short run, therefore, the firm will be in equilibrium when it is maximising its profits, i.e., when

Marginal Revenue = Marginal Cost

In the short run, a monopolistically competitive firm may either realise abnormal profits or be faced with losses. But, in the long run, such supernormal profits disappear. This is because we assume that entry is free and new firms will enter the industry if the existing firms are making supernormal profits. As new firms enter and start production, the demand curve or average revenue curve faced by the firms will fall (shift to the left) and, therefore, the supernormal profits will be competed away, and the firms will be earning only normal profits.
Similarly, if in the short run firms are suffering losses, then in the long run some firms will leave the industry so that the remaining firms are able to earn normal profits. Another point which is to be noted in regard to the long-run equilibrium under monopolistic competition is that average revenue curve in the long run will be more elastic, since large number of substitutes will be available in the long run. Therefore, in the long run, equilibrium is restored when firms are earning only normal profits. Now, profits are normal only when
Average Revenue = Average Cost.
Therefore, equilibrium in the long run under imperfect competition holds when

Average Revenue = Average Cost.



Price determination under Oligopoly:
In an oligopoly, the number of sellers is small as against a sole seller under monopoly and many sellers under monopolistic completion.
Principal Characteristics of Oligopoly
The principal features of oligopoly are as under:
(i) Interdependence:
Owing to a small number of sellers, the price-output decisions of one firm are taken note of by other firms and affect their decisions too.
(ii) Indeterminate Demand Curve:
Since no firm is able to predict the reaction or behaviour of other firms consequent on price output decision of one firm, there is uncertainty, and no firm can be sure of the quantity of the commodity it can sell at a price. The demand curve is thus indeterminate.
(iii) High Pressure Salesmanship:
There being only a small number of firms in the field, there is a tendency for a firm in oligopoly to increase its selling costs and indulge in advertisement so that it may capture as much of the market as possible. There is a counter-campaign by the rivals.

(iv) Sticky Prices:
In order to avoid adverse reaction by the rivals, there is a tendency for the firms to avoid changing the price of their products. Hence comparative price stability rules in the oligopolistic market.

How is Price Determined under Oligopoly?

Since price-output decisions by one firm affect the decisions of other firms, nobody can be sure of their reaction. As pointed out above, the demand curve is indeterminate and no single price-output decision is possible.