Economics is the term derived from a Greek word, OIKOS (a house) and NEMEIN (to manage) which in effect meant managing a household using limited funds available in the most economical manner possible.

Four Important definitions are,
- Wealth definition of Adam Smith - Father of Economics
- Science of Material Welfare definition of Alfred Marshall
- Scarcity definition of Lionel Robbins
- Growth definition of Paul Samuelson

Adam Smith defined economics as a science, which studies the nature and causes of wealth of nations.

Criticism on wealth - Many philosophers like Dickens, Ruskin, Carlyle and Mathew Arnold strongly criticised the wealth definition. They said that the science which concentrates only on the study of wealth is a “Selfish Science”, “Mundane Science”, “Bastard Science”, “Bread and butter Science”, “The Science of getting riches”, “the gospel of mammon” (song of the devil), “a science of illth and not wealth” etc. These philosophers were highly critical of the wealth definition because they at that time were highly influenced by the religious sentiments and spiritual values. They considered that mere acquisition of wealth is not the object of all human activity and they looked at acquiring wealth with great contempt.

Defects of wealth - Stress in the wealth definition is only on acquiring wealth. But in reality the human life and activity consists of other considerations like love, affection, charity, social obligation, family obligation etc. Wealth is only a means and not an end to human activity. End of human activity is his welfare i.e. welfare of man. Wealth definition did not include the services of various professionals like teachers, doctors, veterinarians, lawyers etc.

Alfred Marshall (1819) defines economics as: "Political economy, or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and the use of material requisites of wellbeing."

Marshall defined there is a shift of emphasis from wealth to human welfare. In his view wealth is not an end by itself, it is the means to promote the economic well being of the people. The term ordinary business of life denotes among various people and groups of society.

Lionel Robbins (1931), defined economics as the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.

Limitations of Scarcity definition

- Resources are limited, but scarcity definition has not taken into account the possibility of improving resources due to scientific and technological development.
- Scarcity definition is silent about the role of resources towards human welfare.
- Problems can arise not necessarily due to scarcity of resources but also due to abundance. For example more production of eggs and milk than the demand will bring down the price to such an extent that even the production cost may not be met.
• Scarcity definition does not discuss about employment, economic growth, determination of value or price etc.
• Paul Samuelson defined "Economics is the study of how men and society choose with or without the use of money, to employ scarce productive resources which could have alternative uses to produce various commodities over time and distribute them for consumption now and in the future among various people and groups of society.

In Traditional approach, economics is studied under 5 major divisions.

Consumption
• Satisfaction of human want on use of goods and services is known as consumption.

Production
• It is the creation of utilities and values. This part of subject deals with economics of agents or factors of production i.e. land, labour, capital or organisations, earning wealth for the purpose of satisfaction of human wants.
• Marshall makes a distinction between two types of things i.e. material things and immaterial things.

Exchange
• It is the act of obtaining the desired object from some one by offering something in return.
• Goods produced are not for self-consumption alone. They are primarily for sale.
• They are sold in market where buyers buy the commodities and sellers sell the commodities in particular price.
• Thus the process of buying and selling put together constitute exchange.

Distribution
• Production of any commodity requires land, labour, capital and management.
• These factors of production are to be rewarded for their services in the process of production.
• The landlord gets rent for land, labour earns wages. The capital is given with interest or manager is rewarded with profit.
• Thus the process of determining wages, rent, interest and profit is known as distribution.

Public Finance
• Studies that how the Government gets money and how it spends money. Hence in public finance, taxation, interest structure, Public expenditure etc., are dealt.

• Subject matter of economics is divided by modern approach in two as
  • Micro economics
  • Macro economics

Micro economics
• It is also called as Price Theory. Price theory explains the composition, or allocation, of total production- why more of some things is produced than of others.
• The word Micro means a millionth part. When we speak of microeconomics or the micro approach, what we mean is that it is some small part or component of the whole economy that we are analysing.
• Thus, micro economic theory studies the economic behaviour of individual decision - making units such as consumers, resource owners and business firms.

Macro economics

• It is also called as Income Theory. Income theory explains the level of total production and why the level rises and falls.
• Macro - economics is concerned with aggregates and averages of the entire economy, such as national income, aggregate output, total employment, total consumption, savings and investment, aggregate demand, aggregate supply, general level of prices, etc.,
• It studies the behaviour of economic system as a whole or all the decision making unit combined together.

Positive or Normative Science

• Economics is both positive and normative science. Positive science deals with things as they are. Hence it addresses what it is. Eg. The feed unit is sick.
• The normative science makes distinction between right and wrong of a thing.
• It prescribes what it should be. Positive science describes while normative science evaluates.

ECONOMIC SYSTEMS

• Each economy is a system in which the production and distribution of goods are organised around people's wants.
• There are three important alternative economic systems functioning in the world.
• They are,
  • Capitalist economy
  • Socialist economy
  • Mixed economy

Capitalist economy

• The prominent characteristics of a capitalist economy are
  • Right to private property.
  • Prevalence of free enterprise commonly known as laissez faire that is, free play of price mechanism in determining economic activity.
  • Absence of government controls and of central economic planning.
  • Profit motive being the moving force behind any economic activity.
  • Full freedom for the consumer in the choice of consumption, which is popularly referred to by the expression Consumer sovereignty.
  • USA and UK follow this system.
**Socialist economy**

- The cardinal characteristics of a socialist economy are bound to be the opposite of capitalism.
  - All means of production and natural resources are socially owned.
  - There is centralised economic planning.
  - There are rigorous controls, directing the entire gamut of trade (internal and international) and production.
  - This also means that there is no scope for free play of price mechanism or market forces. In brief, it is a command economy.
  - Consumer sovereignty is severely restricted by means of predetermined allotment of consumer goods and rationing.
  - Welfare is the main goal, all other factors becoming matter of less importance.
  - This system took place in western countries after industrial revolution.

**Mixed economy**

- The features of mixed economy are
  - Both private sector and public sector co-exist: supplementing efforts of each other in attaining targeted economic goals.
  - While the market forces are free, prices may still be administered by state intervention.
  - Certain industries (especially monopolies) may be nationalised, areas such as agriculture may be left in the hands of private enterprise.
  - Again, works and services whose benefits are indivisible between different sections of the society (for instance, the benefits of an army to the country as a whole) are taken care of by the government, while operations in which cost-price relationship is straight and simple, are left in the hands of private entrepreneurs.
  - After independence, we follow this system with inclusion of public and private sectors.

**CONSUMPTION**

- World is at work, the farmers plough their land, factory workers control machines, feed them with raw materials and transform into manufacture goods.
- Buyers and sellers are busy, thus economic activities are circling around.
- People want to earn money. They need money to satisfy their wants relating to food, clothing, shelter and other necessities and luxuries.
- Thus wants make people to work, i.e. wants give rise to various kinds of economic activities.
- This is the starting point of all economic activities for the existence of human wants.
- Goods and services that satisfy our wants are to be produced. They are produced with the help of available resources in nature.
- The resources that can be used for the production of goods and services are not available in plenty. They are scarce. Hence the economic problems arise.
- The responsible factors for emergence of economic problems are
  - The existence of human wants
- Scarcity of available resources
- Thus the sign of economics wonders around wants, efforts, and satisfaction.

## Wants

- In general, wants may be defined as desires of consumers to obtain and use various goods and services, which give pleasure and satisfaction.
- However, more wish or desire to have goods and services in the economic sense is not a want.
- Therefore, wants can be defined as those effective desires for goods and services which are associated with the following three essentials.
  - Desire to acquire goods or service.
  - Ability to pay for the desired goods and
  - Willingness to pay for those goods.
- The wants originate from one of the following sources
  - Desire of the minimum of goods required for existence. Eg. Food, Clothes etc.
  - Desire to maintain the standard of living, giving rise to conventional necessaries. E.g. Well equipped house, membership of a club etc.
  - Desire of distinction and excellence. Eg. Latest model of a car, dress of latest design etc.

## Classification of Wants

- Wants can be classified as
  - Necessaries
  - Comforts
  - Luxuries

### Necessaries

- Necessaries are goods that are essential for human existence and to maintain our efficiency.
- Goods, which are used for our existence, are called necessaries for existence and goods that we use to improve our efficiency are called necessaries for efficiency.
- E.g. Nutritive food. Goods, which are used out of habit or long established customs and conventions, are called as conventional necessaries. Eg. Tea, Coffee.

### Comfort

- Comforts are goods that lead to easy living and make our life pleasant.
- They also improve our efficiency, but improvement in efficiency is not in a proportion to the money spending on them. Eg. Car, Refrigerator, etc.

### Luxuries

- Luxuries are goods and services, which are generally non-essential and very
expensive.
- They do not improve the efficiency of the people.
- It is just meant for increasing the prestige of a person. Eg. Diamond ornaments.

**CHARACTERISTICS OF WANTS**

Wants are unlimited
- As soon as one want is satisfied another want comes up in it's place.

Wants vary in their intensity
- Wants differ in importance. Some wants are more urgent and others are less urgent wants.

Wants are satiable
- A single want can be satisfied at a particular time.
  - If a person is hungry he can satisfy his want fully by taking sufficient amount of food.

Wants are recurrent
- Wants get themselves repeated at interval of short or long period.

Wants are alternative
- A person can substitute coffee in the place of tea.

Wants are competitive
- For a hungry person wants for food is more urgent than anything else.
  - The most urgent wants takes the first position with satisfaction and the less follows.

Wants are complementary
- To satisfy particular want we need several things.
  - For eg. If a person wants to write a letter he needs pen, paper, ink etc.

Wants tend to become habits

**GOODS AND ITS CLASSIFICATIONS**

**Classification of Goods**
- Anything that satisfies human wants is called goods or commodity.
- Goods can be classified into
  
  **Free goods**
  - Air we breath has utility for us. So it is a commodity. For the use of this commodity we do not pay any price.
  - Such goods are called free goods. Free goods are available in plenty and not in
Economic goods
- Milk is a commodity we have to pay price to get it.
- Such goods are called economic goods.
- They are available in scarce.

Visible goods and non-visible goods
- Egg can be seen and felt by touch. Such goods are called material or visible goods.
- Copy write of books or services of a doctor can be sold for money but they cannot be seen or felt, such types of goods are immaterial or invisible goods.

Consumer and Producer goods
- We use goods like egg, pen etc. which satisfy our wants directly. They are called consumer goods.
- We use goods like machine to produce other goods. They do not satisfy our wants directly.
- Such goods are called producer goods or capital goods or investment goods.

Durable goods and perishable goods
- Goods, which decay quickly, are known as perishable goods. Eg. Milk.
- Goods which lasts for long period are called durable goods. Eg. Incubator, milking machine, etc.

Competitive goods
- Production of one good must be forgone in order to produce more of other good. For example for a given level of maize, one has to give up a certain level of piggery production in place of increasing broiler production.

Supplementary goods
- Some positive level of one good is produced without reduction in output of another good. For example, women labourer employed in backyard poultry keeping.

Substitute goods
- If price of one good falls with consequent increase in demand for it, the demand for other related good decreases and can act as substitute for the first one. Soya can be substituted for maize in feed ration.

Complementary goods
- If production of one good causes the increased production of another goods. For example a legume in rotation increase the production of grain crops in alternate years.
Meaning

- It refers to the state of economic goods at a particular time, i.e. goods which are not transferable are not included. E.g. personal skill and ability.
- However, it may not be true while calculating wealth of a country, which may include the skill and ability of its citizens.

Classification of Wealth

- This can be classified into three forms
  - Personal or individual wealth
    - A common human being requires this wealth e.g. clothes, books, scooter etc.,
  - Business wealth
    - This is used for further production of goods and services, e.g. farms, industries, machines etc.,
  - National or Social Wealth
    - This includes the goods owned by states or local bodies e.g. educational institutions, public library, transport, electricity etc.,

VALUE, PRICE, INCOME AND UTILITY

Value

- In economics we use the term value in the sense of exchange.
- Value of commodity means purchasing power of the commodity.

Price

- The value is expressed in terms of money it is called price. Eg. A pack of rice.

Income

- Income is the remuneration paid to the service rendered by factors of production.

Real income and Money income

- Income can be expressed in terms of commodities or money.
- When we express income, the terms of commodities it is called real income.
- If we say that income of a person is five kg rice, he express his income in terms of commodity.
- When we express income in terms of money it is called money income.

Utility

- Utility means capacity to satisfy wants, i.e. want satisfying power of a commodity.
- Total utility may be defined as the total satisfaction derived from the consumption of all the goods or services at the disposal of the consumer, i.e. aggregate utilities derived.
- Different types of utilities are

Form utility
• Form utility is added when the processor of the goods (such as milk, paddy and oilseeds) transforms the material into finished products ready for consumption (such as cheese, rice and edible oil respectively).
• In doing so, he adds form utility to the raw products, i.e. form utility is created by the processing functions.

**Time utility**

• Time utility is added when products are stored from the time of production to the time of consumption.
• Time utility is created by the operations like storage in ware houses and godowns.

**Place utility**

• Place utility is added by the transporting system which transfers the goods from one point where it is not needed to another point where it is consumed.
• Hence, transporting agencies contribute to place utility.

**Possession utility**

• Possession utility is added to the product when its ownership is transferred to the final consumer.
• Thus, all the institutions and agents in the marketing chain which enable transfer of ownership are contributing to possession utility.

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**FACTORS OF PRODUCTION**

• Production is the process by which resources are transformed into products usable by consumers either directly or indirectly.
• Generally, resources or inputs of any production process are otherwise called as factors of production.
• These factors are broadly grouped into four viz.
  • land,
  • labour,
  • capital,
  • entrepreneurship management/Organisation.

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**FACTORS OF PRODUCTION - LAND, LABOUR AND CAPITAL**

**Land**

• The term land has been given a special meaning in economics.
• Land does not mean soil surface alone as it is ordinarily understood, but it includes the materials and forces which nature gives in land, water, air, light and heat.
• Land has some characteristic features. They are
  • Land is fixed in quantity
  • Land is immobile
  • Land is permanent i.e. there are some inherent properties of land
which are original and indestructible.
• Land has infinite variation of degrees of fertility so that no two pieces of land on earth is same.

Rent

• It is a reward for land and refers to that part of payment by a tenant which is made only for use of land i.e free gift of nature.
• It is of two types namely economic rent and contract rent.
• Economic rent is the payment made for the use of land only.
• Contract rent is total payment made by tenant to landlord.

Lease

• It is defined as an oral or written contract outlining how a tenant and landlord will do business and share income, provide for expenses, improve the land and determine business program, practices and compensation for demage to the land or termination of lease.
• It is of five types in order of risk and return to the tenant.
  • Cash lease - Direct cash payment at end of year
  • Flexible cash lease - Hybrid of cash and crop share.
  • Crop share lease - sharing only crop not cash deal
  • Livestock share lease - Sharing livestock and its income.
  • Labour share lease - Giving way for landlord to acquire extra labour and suitable for young farmer without enough capital.

Labour

• Labour means any exertion of mind or body undertaken for a monetary consideration.
• Any work done for the sake of pleasure does not fall under labour in economic sense. Wage is known as reward of labour.

Characteristics of labour

• Labour is perishable
  • A day without work in worker’s life is lost forever. He cannot store his labour and deliver it later.
• Labour has a poor bargaining power
  • As labour is perishable, they accept even low wages.
• Labour is inseparable from labourers
  • Labour is an integral part of the labourer’s personality.
• Supply of labour changes very slowly
  • Supply of labour cannot be curtailed at once even if wages fall because the labourers must earn their subsistence.
  • It also takes time for children to grow up or people to get trained in order to increase the supply of labour.
  • Labour is not so mobile as capital – It happens due to differences in language, environment, habit etc.

Wage

• It is a reward for labour. It means payment made for services of labour. It may be defined as a sum of money paid under contract by an employer to a worker for his physical or mental service rendered.
It is of two type namely nominal wage and real wage.

Determinants of wages are efficiency, existence of non-competing groups, ability of learning trade, social acceptance, hazardous and dangerous occupation, bargaining power.

**Nominal Wage**

- It is a wage paid or received in terms of money.

**Real Wage**

- It is not money wage but rather it represents that part of standard of living of labourer.
- It includes purchasing power of money and constitutes subsidiary earning, extra work without extra payment, regularity or irregularity of employment, condition of work, future prospect, etc.

**Capital**

- Capital is a stock or fund existing at a given moment.
- Capital is man made. Man constructs capital equipment to help him in the production of other goods and services. Hence capital is defined as produced means of production.

**Characteristics of capital**

- It is man-made and its supply is therefore, within the control of man.
- It involves the element of time as it renders its services over a period of time. Therefore payment to capital is calculated in terms of so much per cent per annum.
- Production of wealth with the aid of capital has been called the round about process of production.
- Labour can produce more with aid of capital than it was without it. Since capital is productive, there is demand for capital.
- People look forward to getting an income by accumulating capital. Hence capital is prospective.

**Functions of capital**

- Capital increases productivity by enabling the entrepreneur to acquire the other factors of production.
- It provides subsistence to enable workers to maintain themselves during the period of waiting for marketing of goods.
- It provides appliances or auxiliaries of production to carry on production effectively on modern lines.
- It provides raw materials to feed the machines.

**Interest**

- It is a reward or payment for capital use.
- It is of two types ie. Gross interest and Net interest.
- Gross interest is the total payment which debtor pays to the creditor.
- Net or pure interest is the payment only for the services of capital as such or for the money borrowed.
- Gross interest include net interest, insurance against risk, wage for management, return for inconvenience.
FACTORS OF PRODUCTION - ORGANISATION

Meaning

- Organisation combines the other factors of production. Viz. Land, labour and capital and decides on what to produce.
- A special skill is required to combine factors of production and accomplish the difficult task of production.
- This task is undertaken by organiser or entrepreneur. Profit is known as reward of management.

Types of Organisation

- There are five forms of organisations viz.
  - Sole proprietor
  - Partnership
  - Joint stock company
  - Co-operative societies and
  - Public sector undertaking

Sole proprietor

- This is the oldest form of entrepreneurial organisation. Even today, from the point of view of numbers, small firms are predominantly sole proprietor firms. Such one person firms range from farmer, shop keeper and small factory-owner who employ other workers and may even own many separate units.
- Nevertheless, all these businesses have the same characteristic of being owned and controlled by a single person.
- It is this person's task to make all decisions regarding the policy of the firm and it is he alone who takes the profit, bears the brunt of any losses made.

Disadvantages

- Development of such a firm must proceed slowly because the sources of capital are limited.
- In the event of failure, not only the assets of business but also the private assets and property of the proprietor can be claimed against by creditors. In short there is no limited liability.
- There is lack of continuity; On retirement or death of the owner, a one-person firm may cease to function.
- Because of these disadvantages, this type is confined to those businesses, which are just starting up or to certain industries such as agriculture and retailing.

Partnership

- A large amount of capital is available when persons combine together into a 'partnership'.
- Normally not more than twenty (ten in case of a banking) may so join.
- Each partner provides a part of capital required and shares the profit on an agreed basis.
Joint stock company

- Some kinds of business could not be conducted on a small scale, and these have to start as joint stock companies, either sponsored by some important interests or else developed as subsidiaries of existing large firms.
- The advantages are limited liability, continuity, and availability of capital and ease of expansion.

Co-operative societies

- They are a form of organisation where people work together or business people on the basis of natural benefit.
- It is a voluntary organisation designated to promote economic interests of its members. Members have equal right.
- Co-operative society has the motto of "each for all and all for each".

Public Sector Company

- A company undertaken and run by the local, state and central government are called as public sector undertaking or a company.
- To promote people's welfare, government directly undertakes economic activities.
- Public undertakings have been started with the following reasons,
  - To bring about rapid economic development.
  - Benefits of development are shared by all the people and.
  - Inability of private sectors to find huge amount of capital needed to take up large projects.

THEORY OF CONSUMER BEHAVIOUR

- Utility is a subjective term like pain or joy which can only be felt and which cannot be measured. Suppose a person starts eating egg one after another.
- The first egg gives him great pleasure. By the time he takes the second it gives him less satisfaction as the second egg is meeting with a less urgent want.
- The satisfaction of the third will be lesser than of second, that of the fourth is lesser than that of the third and so on.
- The additional or incremental satisfaction i.e. the marginal utility with every successive unit of egg will go on decreasing till it drops down to zero.
- If the consumer is forced to take more, the satisfaction becomes negative and the utility changes to dis-utility.
- Marginal utility (MU) is defined as the change in total utility (TU) resulting from unit change in consumption of commodity per unit time.

<table>
<thead>
<tr>
<th>Units (eggs)</th>
<th>Total Utility</th>
<th>Marginal Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(units of satisfaction)</td>
<td>(units of satisfaction)</td>
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<tr>
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<td>-------------------------</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
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</tr>
<tr>
<td>3</td>
<td>60</td>
<td>15</td>
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<tr>
<td>4</td>
<td>70</td>
<td>10</td>
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<tr>
<td>5</td>
<td>75</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>71</td>
<td>-4</td>
</tr>
</tbody>
</table>

- Total Utility curve increases at beginning and reaches maximum and decline eventually with increase in quantity of goods consumed.
Marginal utility slopes downward from left to right. It reaches zero when total utility reaches maximum and becomes negative if more of goods consumed after that. It shows as the quantity of goods consumed increases marginal utility decreases. It is notable point that marginal utility is zero when total utility is maximum.

**LAW OF DIMINISHING MARGINAL UTILITY (MARSHALLIAN APPROACH)**

"The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in stock that he already has."

**Assumptions**

- The consumer is assumed to be rational.
- Cardinal utility – The utility of each commodity is measurable in monetary units.
- Money has a constant marginal utility.
- Utilities of different commodities are independent of one another.
- Taste and income of the consumer remains the same.
- Commodity is consumed in suitable size and in suitable time.
- There is no change in fashion.

**Importance of the law**

- The law helps us to derive the law of demand.
- Marginal utility of money to rich people will be smaller than the marginal utility of money to poor people.
- So, the income of the rich people is taxed at a progressive rate.
- Law of diminishing marginal utility is the basis for progressive tax system.
- This law governs our daily expenditure. Our purchase stop at a point where marginal utility equals price.

**INDIFFERENCE CURVE TECHNIQUE**

This technique has been developed by the modern economists J.R.Hicks and R.G.D.Allen for the analysis of demand.

**Assumptions**

- Rationality - The consumer is assumed to be rational.
- Ordinal utility - Here the measure of utility is viewed as the level of satisfaction rather than the amount of satisfaction.
- The levels of satisfaction are comparable rather than quantifiable i.e. consumer ranks his satisfaction derived from different goods and he does not know precisely the amount of satisfaction.
- Consistency and Transitivity of choice – it is assumed that the consumer is consistent in his choice i.e. if he chooses commodity A over B in one period, he would not choose B over A in another period. If A >B, then B<A.
  - Similarly it is assumed that consumer’s choices are characterised by transitivity.
  - If A is preferred to B and B is preferred to C, then A is preferred to C. Symbolically if A>B and B>C, then A>C
**Indifference schedule**

- An indifference schedule may be defined as a schedule of various combinations of two goods that would give the same level of satisfaction to the consumer.

**Indifference schedule – I**

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Kgs. of meat</th>
<th>No. of eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>II</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>III</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>IV</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>VI</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

- Assume a person has the choice of spending a part of his resources on two commodities, meat and eggs.
- The above table shows various combinations of meat and eggs, which give the consumer the same level of satisfaction.
- Since all combinations of meat and eggs give the consumer the same level of satisfaction, the consumer is indifferent whether he gets the first or last of the two commodities.

**Indifference curve**

- The figures in the above table, if plotted on a graph give the Indifference curve.
- While the Indifference schedule is the tabular statement of different combinations of two commodities yielding the same level of satisfaction, Indifference curve depicts the same on a graph.
- An Indifference curve may therefore defined as the locus of various combinations of two commodities which yield the same total satisfaction to the consumer. This curve is also known as Iso-utility curve (Iso means same).

**Indifference map**

- Consider another Indifference schedule which is as follows.

**Indifference schedule – II**

<table>
<thead>
<tr>
<th>Combinations</th>
<th>Kgs. of meat</th>
<th>No. of eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>22</td>
</tr>
</tbody>
</table>
### Table

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>II</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>III</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>IV</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>V</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>VI</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

- **Consumption** of any combination of commodities in the second schedule would mean that the consumer is on a higher level of satisfaction than with the previous schedule because the quantity of egg is higher in all the corresponding combinations in the second schedule.
- Obviously any combination in the schedule II is superior to any combination in schedule I.
- Plotting the second schedule, we get an indifference curve above the first curve implying higher level of satisfaction.
- In the same way, we can draw many similar curves representing greater or lesser satisfaction.
- Two or more indifference curves drawn on a same graph are collectively called as **indifference map**.
- In other words indifference map represents a collection of indifference curves where each curve shows a certain level of satisfaction to the consumer.
- While the higher indifference curve implies higher level of satisfaction, lower indifference curve yield lower utility.
Properties of indifference curves

- An indifference curve has a negative slope, which denotes that if the quantity of one commodity decreases the quantity of the other must increase if the consumer is to stay on the same level of satisfaction.
- Indifference curves do not intersect each other.
- Indifference curves are convex to the origin. This is because as the consumer adds more of the commodity, he gives up only less and less of the other.
- Any movement of the indifference curves to the right is a movement to greater total utility.

DEMAND

Meaning of Demand

- Demand in economics is the desire for something plus the willingness and ability to pay a certain price in order to possess it.

Demand schedule

- Demand schedule is a statement which shows varying quantities of a commodity purchased at an alternative prices at a given time.
- Demand Schedule represents a functional relationship between price and quantity demanded. It is usually represented in a form of a table.

Demand Curve (Click here to view graph)

- The graphical representation of demand schedule is demand curve.
- Usually the demand curves slopes downward from left to right indicating inverse relationship between price and quantity demanded.

Law of demand

- A greater quantity of a commodity is demanded at a lower price and a smaller quantity is demanded at a higher price.
- This inverse relationship between price and quantity demanded is called as "Law of demand".

Reasons for the inverse relationship

- There are two reasons why demand curve slopes downwards (or why people buy more when the price falls).
  - Consumer is able and willing to buy more of a good when its price falls. Because, a fall in the price of a good is equivalent to an increase in the income of the consumer, i.e. with the commodity being cheaper, the consumers’ real income increases which can be used for purchasing some more units of the commodity. This is called as ‘income effect’.
  - If the price of a good falls, it tends to be substituted wholly or partly for other commodities raising the quantity demanded of this good. This is called as ‘substitution effect’.
  - The income and substitution effects combine to increase the ability and willingness of the consumer to buy more of the commodity whose price has fallen.
**TYPES OF DEMAND**

- **Price Demand**: It refers to various quantities of a commodity or a service that a consumer would purchase at a given time in a market at various prices.
- **Income demand**: It refers to various quantities of a commodity or a service that a consumer would purchase at a given time in market at various levels of income.
- **Cross demand**: It means quantities of a good or service which will be purchased with reference to changes in price not of this good but of other related goods. Eg. Changes in quantity demanded of coffee with respect to changes in price of tea.
- **Joint demand**: Certain goods are to be used together to satisfy a particular want. Eg. Pen and Ink. The demand for such commodities is known as Joint demand.
- **Composite demand**: A commodity can be put to several uses and that commodity may be demanded to satisfy any want or more of such uses. The demand for such commodity is known as the composite demand. Eg. Electricity may be demanded for household uses, industrial purpose etc.
- **Derived demand and Direct demand**: Demand for paddy grains is direct demand whereas the demand for organic fertilizer to increase paddy grain production is derived demand.

**EXCEPTIONAL DEMAND CURVE**

- The demand curve instead of sloping downwards may rise upwards when there is an increase in price showing that more quantity would be demanded when the price rises.

![Exceptional Demand Curve](image)

- This tendency was first observed by Sir Robert Giffen in 19th Century.
- Hence this exceptional process is called Giffen paradox.
- The reason for such exceptional behaviour may be
  - Fear of scarcity of goods in future
  - Possession of a goods conferring distinction in the society.

**DETERMINANTS OF DEMAND**

- Amount of a commodity or service that a consumer wishes to purchase is called as quantity demanded of that commodity or service.
- Purchase of this quantity is influenced by several factors, which are called as determinants of demand.
The relationship between the quantity demanded and its determinants are expressed in the form of a functional equation known as demand function.

- \( Q_d = f\{P_i, P_j, Y, T, C, P, I, \ldots\} \)
- Where \( Q_d \) = Quantity demanded
- \( P_i \) = Price of that commodity
- \( P_j \) = Prices of related goods (substitutes and complements)
- \( Y \) = Income of consumer
- \( T \) = Tastes and preferences of consumer
- \( C \) = Climate or weather
- \( P \) = Size and composition of population
- \( I \) = Income distribution of the society

Thus the quantity demanded of a commodity is determined jointly by all these factors indicated.

Changes in any one or two or more of these factors listed above would become the causes for the changes in demand.

### ELASTICITY OF DEMAND

**Definition**

- Elasticity of demand is defined as proportionate change in quantity demanded in response to proportionate change in price.

**Price elasticity of demand**

- It is defined as relative responsiveness of quantity demanded of a commodity to the percentage change in its price.

### Measurement of price elasticity

- Elasticity of demand can be measured by three methods viz.
  - Proportional method
  - Total outlay method and
  - Geometrical method

**Proportional method**

- In proportional method, price elasticity of demand is measured as below.
- Price elasticity of demand is the ratio of proportionate change in the quantity demanded to the proportionate change in the price.
Suppose price of an egg falls from Rs. 1.25 to Re.1 and as a result, the demand rises from 10 to 15 eggs, then price elasticity of demand (Ep)

This indicates that for one-percent decreases in price, there would be 2.5 per cent increase in the quantity demanded.

Total outlay method

In total outlay method, from the changes in the total expenditure made on a good as a result of changes in its price, the price elasticity of demand for the good is measured.

But with this method, we can know only whether the elasticity is equal to one, greater than one or lesser than one and we cannot precisely work out the coefficient of elasticity.

If the total expenditure made on the good remains the same, when the price of a commodity consumed changes, the elasticity of demand is equal to one.

Because, the total expenditure made on the good can remain the same, only when the proportional change in the quantity demanded is equal to the proportional change in price.

When the total expenditure made on the good increases as a result of a fall in price or when the total expenditure decreases as a result of a rise in price, then the price elasticity of demand will be greater than one.

When the total expenditure decreases as a result of a fall in price or when the total expenditure increases as a result of a rise in price, then the price elasticity of demand will be less than one.

Consider the following table, which gives quantity demanded of milk at various prices.

Total outlay and elasticity of demand

Quantity demanded increases from 50 litres to 60 litres and total outlay increases from Rs. 725 to Rs. 855, when the price decreases from Rs. 4.50 to Rs. 4.25 i.e. the quantity demanded increases so much that the total outlay on milk increases indicating thereby that elasticity of demand is greater than one at these prices.

<table>
<thead>
<tr>
<th>Price of milk (Rs.) per litre</th>
<th>Quantity demanded in litres</th>
<th>Total outlay (Rs.)</th>
<th>Elasticity of demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.50</td>
<td>50</td>
<td>725.00</td>
<td>-</td>
</tr>
<tr>
<td>14.25</td>
<td>60</td>
<td>855.00</td>
<td>e&gt;1</td>
</tr>
<tr>
<td>14.00</td>
<td>75</td>
<td>1050.00</td>
<td>e&gt;1</td>
</tr>
<tr>
<td>13.75</td>
<td>80</td>
<td>1100.00</td>
<td>e=1</td>
</tr>
<tr>
<td>13.50</td>
<td>84</td>
<td>1134.00</td>
<td>e&lt;1</td>
</tr>
</tbody>
</table>
When the price falls from Rs. 4.00 to Rs. 3.75, the quantity demanded increases from 75 to 80 litres so that total outlay remains the same at Rs. 300.

This shows that price elasticity of demand is unity. When the price of milk further falls from Rs. 3.75 to Rs. 3.50 and then to Rs. 3.25, total outlay spent on milk decreases in spite of the increase in the quantity demanded.

Thus, the elasticity of demand for milk at these prices is less than unity.

**Geometrical method**

- Geometrical method tells how to measure elasticity of demand at any point on a curve.
- Following is the straight demand curve DD'. Elasticity at a particular point is represented by a fraction -distance from D' to that point divided by the distance from the other end.
- Thus elasticities of demand on the points P, Q, and R are D' P/DP, D' Q/DQ and D' R/DR respectively. Since Q is in the middle of the curve, elasticity D' Q/DQ is equal to one.
- Any point above this point will have an elasticity of more than one and points below Q will have elasticity of less than unity. Therefore, it can be concluded that elasticity of demand is different at different points of the same curve.
- Elasticity calculated in this way can be called as point elasticity.
- Point elasticity can be used only when the demand curve is known. However, often only scanty data on price and quantity are available in which cases it will be difficult to find point elasticity.
- Instead, we shall have arc elasticity (an arc is a portion or a segment of a curve).
- Instead of using old and new price and quantity, here we take the average of both. Thus the arc elasticity is the average elasticity which is equal to

Income elasticity of demand
• It is the responsiveness of change in quantity purchased to change in income.
• Luxury goods will have high-income elasticity while the necessaries have low-income elasticity of demand.

Cross elasticity of demand

• It is a measure of responsiveness of demand for goods to given change in the price of related goods.

MAGNITUDE OF ELASTICITY

On the basis of numerical value five types of elasticity of demand can be distinguished.

- **Elastic Demand**: When the coefficient of elasticity of demand exceeds one, the demand is elastic. The percentage change in quantity demanded is more than that of the price.
- **Inelastic demand**: When the coefficient of elasticity of demand is less than one the demand is called inelastic. The percentage change in quantity demanded is less than that of price.
- **Unitary elastic demand**: When the coefficient of elasticity of demand is equal to one the demand is said to be unitary elastic. That is percentage change in quantity demanded is equal to that of price.
- **Perfectly elastic demand**: When the coefficient of elasticity of demand is infinite the demand is said to be perfectly elastic. i.e. when the quantity demanded changes even when the price level remains static, the demand is said to be perfectly elastic.
- **Perfectly inelastic demand**: When the coefficient of elasticity of demand is zero, the demand is said to be perfectly inelastic. When the change in price does not result in change in quantity demanded, the demand is said to be perfectly inelastic.

SUPPLY

Definition

• Supply of a commodity refers to the various amounts of commodities, which the producers are willing and able to make available for sale at various prices during a given time.

SUPPLY SCHEDULE

• Supply schedule is a statement showing varying quantities of goods offered for sale at alternative prices at a given time.

<table>
<thead>
<tr>
<th>Price of egg Rs / 100 eggs</th>
<th>Market supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>17,500</td>
</tr>
<tr>
<td>140</td>
<td>16,000</td>
</tr>
</tbody>
</table>
**SUPPLY CURVE**

- **Supply** curve is the graphical representation of the supply schedule which represent various amount of goods that would be offered for sale at different prices during a particular period of time.
- **Supply** curve slopes upward from left to right because as the price rises the quantity supplied increases.

**LAW OF SUPPLY**

- Other things remaining constant (ceteris paribus), higher the price of a commodity, the larger will be the quantity supplied and lower the price the smaller will be the quantity supplied.
- In mathematical terms, supply is an increasing function of price.

**Determinants of supply**

- Price of the commodity – when price of a commodity increases, its supply also increases.
- Price of a related commodity – When price of a good increases, supply of its substitute declines e.g. mutton and chicken.
- Cost of inputs of production – When cost of raw materials increases, supply decreases.
- State of technology – Improvement in technology lower the cost of production and increases the supply.
- Factors outside the economic sphere like flood, drought, fire etc.
- Tax and subsidy – Higher taxation will decrease the supply and granting subsidies will raise the supply.

**Elasticity of supply**

- It measures the rate at which the quantity supplied changes due to changes in price.

- Suppose the price of an egg rises from Rs. 1.00 to Rs. 2 and as a result the supply increases from 10 to 30 eggs.
For 1 percent increase in price, there is 4 percent increase (change) in quantity supplied.

Different types of elasticity of supply

- Perfectly inelastic - $E_{sp} = 0$
- Inelastic - $E_{sp} < 1$
- Unitary elastic - $E_{sp} = 1$
- Elastic - $E_{sp} > 1$
- Perfectly elastic - $E_{sp} = \text{Infinite}$

COST CONCEPTS

Production costs

- Production costs play an important role in decisions making by the farmers.
- Cost of production often becomes a policy issue when producers complain that the prices they receive for their product do not cover the cost of production.
- Cost of production here means the expenses incurred per unit of output.
- Costs in farming can be divided into two main categories
  - Fixed cost
  - Variable cost

Fixed cost (or) over head charges (or) sunk cost

- A resource or input is called a fixed resource if its quantity cannot be varied during the production period and in general costs associated with fixed inputs are called fixed costs.
- Fixed costs have to be incurred even when the production is not undertaken.
- E.g., taxes, rent, electricity, water charges, insurance, depreciation, labour hired on a year-round basis, interest on investment in equipment and livestock, etc
- In short run, some costs are fixed and others can be varied. However in long run, all costs become variable.

Variable costs

- An input is a variable input if its quantity can be varied during the period of production and the costs associated with variable inputs are called variable costs.
- Variable costs vary with the level of production.
- These costs will not be incurred in the absence of production.
- E.g., seed, tractor fuel, repairs, feed, fertilizer cost, etc.
- Labour if hired on daily basis, interest on current investment, hired machines and other services are also included in variable costs.

Total costs

- Total costs of production will include both fixed and variable costs.

Cash costs (explicit cost)

- Cash costs are incurred when resources are purchased and used immediately in the production process.
- Cash costs result from purchases of non-durable inputs such as fertilisers, fuel, oil, and casual labour which do not last more than one production process.

Non-cash costs (implicit costs),

- Non-cash costs consist of depreciation and payments to resources owned by the farmer.
- E.g., Depreciation on tractor, equipment, buildings, payments made to the farmer himself or family labour, management and owned capital.

Opportunity cost

- Opportunity cost of an output is defined to be the income that can be earned in the next best alternative use.
For example, a farmer with 25 kg concentrate feed which can either be fed to his cows or sold.

- If he gives the feed to his cows, the opportunity cost is the amount of money for which the feed can be sold to others.
- If he sells the feed, the opportunity cost is the amount of extra income, which can be obtained by giving this feed to his animals.
- Opportunity cost is defined to be the real cost of any input.

**RELATIONSHIP BETWEEN TFC, TVC, AND TC**

- Total fixed cost (TFC) is represented by a straight line parallel to X-axis and it remains unchanged for all output levels in a time period.
- TVC is zero, when output is zero. It increases as output increases. The shape of TVC curve depends on the shape of the production function.
- TC is the sum of TFC and TVC. When no variable output is added, TC is equal to TFC.
- The TC curve is shaped exactly like the TVC curve, but is placed above the total variable cost by the units of total fixed cost.

**Opportunity cost**

- The income which an output can earn in the next best alternative use.

**Physical risks**

- Destruction of the product itself and are due to fire, accident, rain etc.
- Risk attached to such natural hazards is often transferred to institutions (Insurance companies) that specialize in assuming such risk.

- **Unit costs** are
  - Average Fixed Cost (AFC),
  - Average Variable Cost (AVC),
  - Average Total Cost or Average Cost (ATC or AC)
  - Marginal Cost (MC).

  These unit costs are more important than total costs in decision making process. Plotting these, we get unit cost curves.

**Average Fixed Cost**

- Average Fixed Cost is worked out by dividing the Total Fixed Cost by the amount of output.
- It is fixed cost/unit of output. AFC will vary for each level of output.
- As output increases, AFC continues to decline. When output is zero, AFC=TFC. AFC always slopes downwards regardless of production function.
- AFC = TFC /Output

**Average Variable Cost**

- Average Variable Cost is calculated by dividing the Total Variable Cost by the amount of output.
- AVC decreases, reaches a minimum and increases thereafter. AVC cannot be computed when output is zero.
- AVC = TVC / Output

**Average Total Cost**

- Average Total Cost can be computed by dividing Total Cost by output.
- ATC, as AVC, first decreases, attains a minimum and increases thereafter.
- ATC is the cost of producing one unit of output.
  
  \[
  ATC = \frac{TC}{\text{Output}}
  \]

**Marginal Cost**

- **Marginal Cost** is the change in the Total Cost in response to a unit increase in output.
- It is found out by dividing change in total cost (or total variable cost because TFC is not going to change) by change in output.
- MC curve decreases first, reaches its minimum point and then raises upwards and passes through AVC and AC (ATC) at their minimum points.
- In other words, AVC and AC will slope downwards and keep falling as long as MC is below them.

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**BREAK-EVEN POINT**

- Break-Even Point is the quantity of output corresponding to minimum of average total cost.
- Exactly at this point, the producer neither gains nor loses anything.
- Whatever income he gets above this point is his profit.
- Suppose the farmer is operating below this point he will be incurring loss towards his fixed cost.
- In short-run, the farmer continues to operate even below this profit. e.g., broiler farms.
- In the long run, the producer has to operate above this point to remain in the business.

**Shut-Down Point**

- Shut-Down Point is the quantity of output corresponding to minimum point of average variable cost.
- Exactly at this point, the producer is in a position to meet the expenses towards the variable cost alone.
- If he operates below this point, he will not be in a position to meet even the variable expenses.
- In short run, the producer must be able to operate at least above this point in order to sustain in the business.

**Long run**

- Long run is a period of time during which the quantities of all factors, both variable and fixed, can be adjusted.

**Short run**

- Short run is a period of time, within which the firm can vary its output by varying only the amount of variable factors such as labour and raw materials.
- Fixed factors such as capital, equipment, top management personnel cannot be varied.