LESSON 3

CONCEPT OF DEMAND

Do we ever think how the price of goods and services are determined and why there is change in our desires and wants. The objective of this chapter is to understand the meaning of demand, the factors influencing it and the changes in demand brought about by factors. As demand is the foundation pillar of any economic system, it is necessary to study the concept of individual demand and market demand.

Demand -

The three basic elements of demand are-

1. The effective desire or want for a good,
2. Money to purchase the commodity, and
3. Willingness to pay for the commodity.

If you have a desire for a commodity, but do not have money to buy it, then it is not a demand. On contrary, if you have money then you should also have willingness to purchase the good.

Demand is always related to price. It is said that at the specific price, the quantity of commodity demanded is such.

Demand can be defined as follows - The demand for any commodity is the quantity that buyers would be willing to purchase at different prices at a particular time.

As far as individual is concerned, his demand for a commodity refers to various quantities of it which he is willing to purchase at various prices during a given period of time. The concept of demand that involves the three elements are quantity, time and price.

Market demand

In every market there are several buyers of a commodity. We will try to explain it with a simple example, on an assumption that there are only 2 buyers in the economy. At the given price of ₹ 60 per kg consumer A demands 4 kg of pomergranate and consumer B demands 3 kg of pomegranate. The market demand of pomegranate at ₹60 per kg will be equal to the total demand of both the consumers. The quantity of market demand will be (4+3=7 kg.)

Thus market demand refers to the total quantity of commodity demanded by all the consumers at the given price. The demand of commodity depends upon price of commodity, income of consumer, taste, fashion and prefrence of the consumer.

Demand schedule - While making demand schedule, only the impact of the change in price of commodity on the quantity demanded is shown in a list while all the other factors affecting demand are assumed to be constant.

Demand schedule is of two types -

1. Individual Demand Schedule
2. Market Demand Schedule

Individual Demand Schedule

Individual demand schedule is a list of various quantities of a commodity which a consumer will buy (purchase) at different possible prices at a given time.

Table 3.1 Individual Demand Schedule

Price of Pomegranate per Kg. (in ₹)	Quantity demanded of Pomegranate (in gm per day)
25	1000 gm
50	750 gm
75	500 gm
100	250 gm

As imaginary individual demand schedule is shown in above table 3.1. When the price of pomegranates is ₹ 25 per Kg., then the quantity demanded by a consumer is 1 Kg. (1000 gms.), but when price increases to ₹ 50 per Kg., then the quantity demanded falls to 750 gm., further when the price increases to ₹100 per Kg. the quantity demanded is 250 gm.

Market Demand Schedule

When the sum of quantities of a given commodity demanded by all the consumers at a specific price, in a given time is shown in a table 3.2 then it is known as a market demand schedule.

Table 3.2

Prices Per Kg (in ₹)	Quantity demanded of Pomegrante by A	Quantity dmanded of Pomegrante by B	Market Demand (1+2=3)
25	1000 gm	1100 gm	2100 gm
50	750 gm	800 gm	1550 gm
75	500 gm	475 gm	975 gm
100	250 gm	300 gm	550 gm

The above table depicts sum of quantities demanded by consumer A & B at different prices.

Demand curve

Demand curve is drawn on the basis of demand schedule. Demand curve gives the same information as the demand schedule does, but it is a diagrammatic representation.

Demand curve shows the inverse relationship between various prices and the quantity demanded by the consumer.

Demand curves are of 2 types

1. Individual demand curve.
2. Market demand curve.

Individual demand curve -

Individual demand curve shows different quantities of the commodity demanded by a consumer at different prices. The following Figure (3.1) shows the individual demand curve.

DD is the demand curve. It is simple plotting of graph based on demand schedule showing demand of pomegrantes and depicts an inverse relationship between quantity demanded of pomegrantes and its price. As the price of pomegrantes increases, the quantity demanded by consumer decreases and vice-versa.

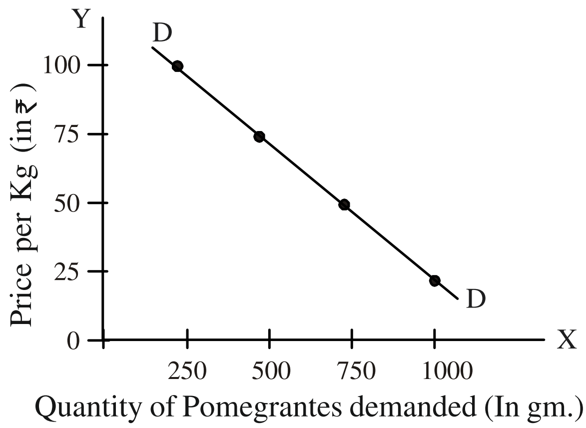


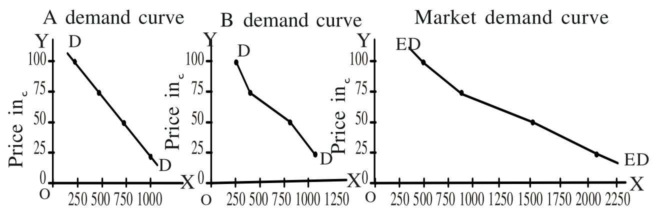
Figure 3.1

Thus, there is an inverse relation between the price of a commodity and the quantity demanded by the consumer.

2. Market demand curve.

Market demand curve is the lateral summation of quantities of a commodity demanded by all the consumers at various price levels in the market. In the following figure (3.2) ED depicts the Market demand curve.

ED is the market demand curve which we get by plotting the data of market demand schedule (Table 3.2) on a graph.



Quantity of good

Figure 3.2

Market demand curve is the horizontal summation of the individual demand curve. In figure (3.2) at the given price ₹ 250, the demand of A is 1000 gm and the demand of B is 1100 gm. So the market demand is 2100 gm (1000+1100) In this way, the market demand on other prices are also calculated. Representing quantities demanded on various prices on a graph, we obtain the market demand curve.

Factors determining demand -

The Factors determining demand are as follows-

1. The price of the commodity.
2. Income of the consumer.
3. Price of other related goods (Substitute or Complementary).
4. Tastes and preferences of a consumer.
5. Price expectations in future.

Mathematically, demand function can be written as follows -

$$D_n = f(P_n, P_1, P_2 P_3 .... P_{n-1}, Y, T, E)$$

According to the equation the demand for n commodity depends on its price P_n, Price of related goods ($P_1 P_2 .... P_{n-1}$), consumer income (Y) preference of a consumer (T), and future expectation (E)

First of all, we will know about the relationship between the price of a commodity and its quantity demanded.

1. Relation between price and the quantity demanded of a good :

   There is an inverse relationship between quantity demanded of a commodity and its price assuming other things remaining constant.

2. The relationship between the quantity demanded and price of other related goods.

   This includes two types of commodity which can be discussed below:-

a) Complementary goods

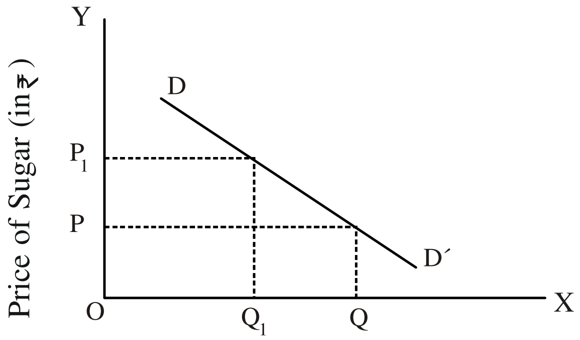


Figure 3.3 (a)

In the above figure3.3 (a) when the price of complementary good, for instance, sugar increases from OP to OP_1 then the quantity demanded of tea decreases from OQ to OQ_1.

Thus, the slope of demand curve for complementary goods is negative.

2. Substitute goods -

In figure 3.3 (b) when the price of coffee increases from OP to OP_1 then the quantity demanded of tea increases from OQ to OQ_1.

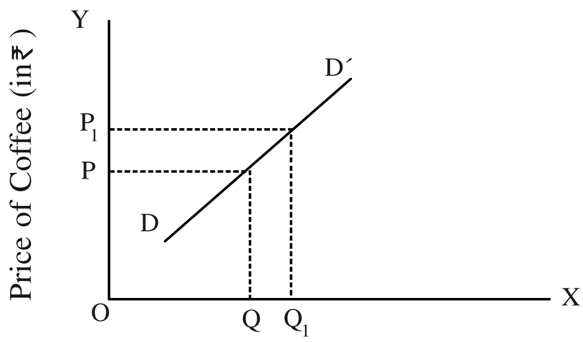


Figure 3.3 (b)

Thus the slope of demand curve for substitute goods is positive.

Goods can be complementary such as tennis racket and ball, bricks and cement which are used together. If the price of tennis ball increases then its demand will fall accompanied with a decrease in demand of racket. Thus, the slope of demand curve for complementary goods is negative.

On the contrary goods can be substitute of each other like tea and coffee. If the price of coffee increases while the price of tea is constant, people will increase the demand of tea and the demand of coffee will decrease. Thus, the slope of demand curve of substitute goods will be positive.

3. Relation between demand and income.

As the income of the consumer increases, generally the demand of goods and services also increases. This includes, the luxury goods. Here the relationship between quantity demanded and income is positive.

There are some goods, whose demand initially increases with the increase in income but after some time there is a fall in demand with the further increase in income. These are inferior goods like demand for

Bajra, maize falls in this category.

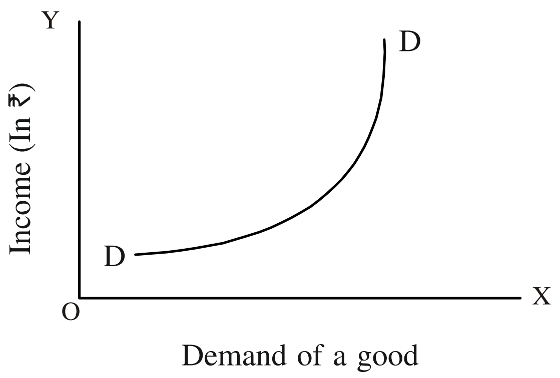


Figure 3.4

4. Relation between Demand and preferences of a consumer -

The demand of the commodities depends upon the tastes and preference of the consumer It is influenced by new inventions, advertisements etc. The preference of the consumer allows him to rank different bundles of goods according to the utility levels of satisfaction received from consumption of the goods.

5. Expectations :

If a consumer expects a fall in the stock of a commodity in near future, then he increases the present demand. On the contrary, if there is possiblity of fall in price of commodity in future, then he will decrease the present consumption of the commodity.

Besides the above factors there are some other factors also which influence the demand. They are as follows :-

1. The size and structure of a population
2. The distribution of the income

1. The size and structure of a population -

As the population of a country grows, there will be increase in demand of goods and services. If the size of the population of a country is large, then the demand for fast moving consumer goods (FMCG) will be more. Not only the size but the structure also influences the demand. If youth population is more than the demand of life style products like mobile, lap tops, smart phones etc. will be more.

2. Distribution of National Income

If there is unequal distribution of income in a country then the demand for luxury goods will be more but if the distribution is equal, then the demand for necessity goods will be more.

Change in the quantity demanded and change in demand

Change in quantity demanded refers to increase or decrease in quantity purchased of a commodity in response to decrease or increase in its price, other things remaning constant. It is expressed through movement along the same demand curve.

On other hand, change in demand refers to increase and decrease in quantity demanded of a commodity in response to change in other determinants of demand other than price of same commodity like consumer's income, taste and preferences of a consumer, change in prices of other goods etc. It is expressed through shifts in demand curve forward shift or backward shift.

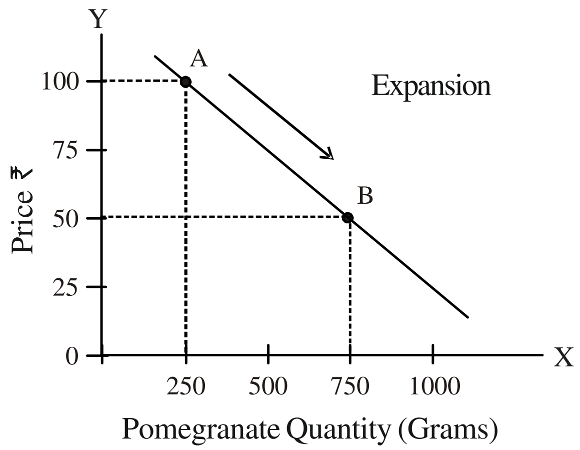


Figure A. Expansion in demand

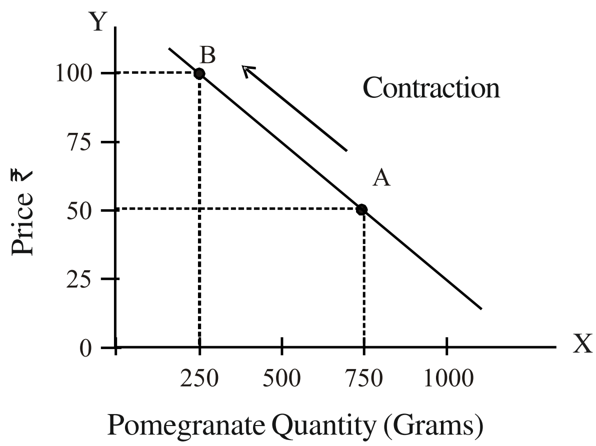


Figure B. Contraction in demand

Figure 3.5

Other things remain constant, if due to fall in price, quantity demanded increases then it is called expampsion in demand. There is movement on the same demand curve.

In figure 3.5(a) When the price of a Pomegranate is ₹ 100. per kg then the amount demanded is 250 gms when the price falls to ₹ 50 per kg then its quantity demand increases to ₹ 750 gms. This is called expansion in demand. The movement from point A to B in the figure depicts expansion of demand.

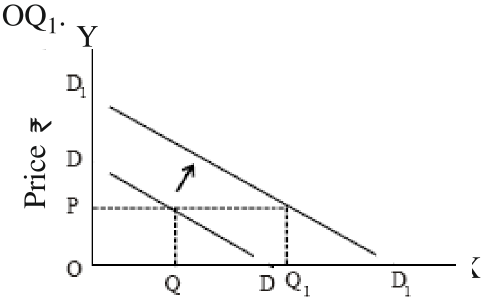
In the Fig 3.5 (b) when the price of Pomegranate is ₹ 50 per kg the quantity demanded is 750 gms. When the price increases from ₹ 50 per, kg. to ₹ 100, per. kg., then its quantity demanded decreases to 250 gm. Other things remaning constant, with the increase in the price there is decrease in the quantity demanded. This is called contraction of demand. The movement is from lower to upper side along the same demand curve.

Shift in demand Curve :

There can be two types of shift in demand curve :-

1. Shift in demand curve to the right or upwards shift.
2. Shift in demand curve to the left or down wards shift

1. Shift in demand curve to the right or upward shift - According to fig. 3.6 (a) if the price of the commodity remains constant but there is an increase in the income of a consumer then demand curve will shift from DD curve to D_1D_1 to the right. This is known as increase in demand. At OP price the quantity demanded shifts from OQ to OQ_1.

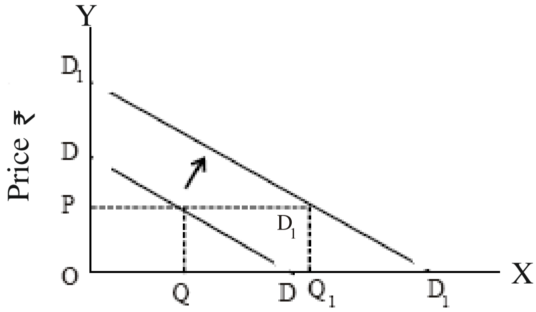


Quantity of a good.

Figure 3.6 (a)

2. The shift in demand curve to the left or downward - According to the fig 3.6 (b) when the price of the commodity is constant but due to decrease in the income of a consumer the demand curve shifts downward from original DD to D_1D_1 to the left. This is known as decrease in demand.

At OP price the quantity demanded falls from OQ_1 and OQ .



Quantity of a good.

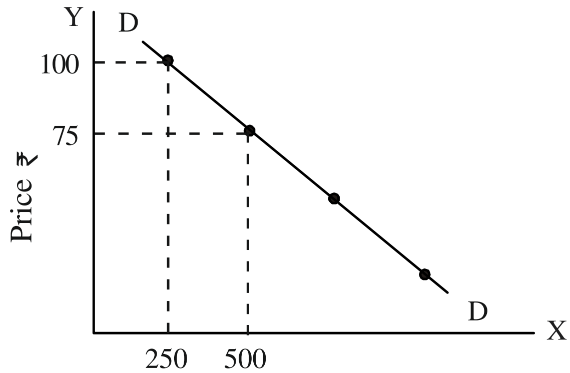
Figure 3.6 (b)

The increase and decrease in demand beside change in income can also be due to change in price of related goods, change in tastes and preferences and price expectations.

Law of demand

Various factors influence the demand of a commodity like the price of the commodity, income of the consumer, price of related goods, preference of a consumer and future expectations of price by a consumer.

The Law of demand states that other things remaining constant if the price of a commodity falls the quantity demanded will rise and if the price of the commodity rises the quantity demanded will decline.



Quantity of a good.

Figure 3.7

In the above figure 3.7 on Y axis there is the price of a commodity and on X axis is the quantity demanded. When the price is ₹ 100 per kg, then the quantity demanded is 250 and when the price falls to ₹ 75 per kg then, the quantity demanded increases to 500 gm.

Thus, we observed that when other factors remain constant with the decrease in price of a commodity, the quantity demanded increases. Thus there exists inverse relation ship between price of a commodity and its quantity demanded.

Derivation of Law of demand.

The Law of demand states the inverse relationship between price of a commodity and its quantity demanded. It can can be derived in two ways.

1. Marginal utility = Price of good.
2. Law of equi-marginal utility

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

1. Marginal Utility and Price -

In the state of equilibrium a consumer demands the quantity of a commodity where MU = P condition gets fulfilled.

Case 1 if MU > P

If the price of a commodity falls then its marginal utility becomes more than its price, which encourages the consumer to buy more of its quantity. Thus, with fall in price the quantity demanded of a consumer increases and he continues to do so till the marginal utility is equal to its price.

Case 2. MU < P

If the price of a commodity rises then its marginal utility becomes less than its price. Hence, a consumer will decrease his demand till the marginal utility is again equal to its price. Thus, quantity demanded decreases with the rise in price.

2. Law of equi-marginal utility -

According to this law, in state of equilibrium a consumer spends his income in such a way that ratio of marginal utility and price of various commodities are equal.

In case of two goods the condition of consumer's equilibrium is

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

Case 1 - If the price of X falls then $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$, in this situation a consumer is getting more marginal utility from X in comparison to Y. Hence, he will buy more of X and less of Y.

Thus, it shows that when the price of X falls then he will demand more of X. He will continue to do so till $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ situation is reached.

Case 2. If the price of X rises then $\frac{MU_x}{P_x} < \frac{MU_y}{P_y}$. In this situation the marginal utility from Y is more than that of X, hence he will buy more of Y and less of X. He will continue to do so till $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ condition is achieved.

Thus, there is inverse relationship between the price of X and its quantity demanded.

Reasons for the operation Law of Demand -

1. Law of Diminishing Marginal Utility.

This law states that at a given time, as a consumer increases the consumption of a commodity, the marginal utility from each successive unit goes on diminishing, consequently a consumer will not pay the same price for successive units but will purchase at a lower price.

2. Substitution Effect -

Substitution effect refers to substitution of one commodity with other when it becomes relatively cheaper. Thus, when the price of commodity X falls it becomes relatively cheaper in relation to commodity

Y.

It leads to substitution of X commodity for Y.

3. Income Effect -

Income effect is the effect on the change in the quantity demanded when the real income of consumer changes because of the change in the price of the commodity. With the fall in price the real income increases, this increased real income is used to buy more units of a good. Price effect is the summation of these two effects-income effect and substitution effect.

4. Size of consumer group -

When the price of commodity falls many consumers who were not able to purchase earlier begin to purchase it and old consumers also increase their consumption, consequently the total demand of the commodity expands.

5. Different uses -

Many goods have alternative uses. When the price of a good falls then that good is allocated to other uses too resulting an increase in total demand of that commodity.

Exceptions to the law of demand

The exception to law of demand refers to those situations where the slope of demand curve is positive and law of demand does not operate.

1. Giffen goods - These are those inferior goods where demand increases with the rise in price and decreases with in fall in price.

Jawar (Maize) and Bajra (Millet) are examples of giffen goods. A consumer decreases the consumption of these goods with decrease in their prices. Thus, law of demand does not operate in giffen goods.

2. **Goods having Prestigious Value :** Diamonds, jewellery are considered prestigious goods in the society. Higher the price of diamonds, higher is their prestigious value and therefore higher will be the demand for them.
3. Possibility of change in price of a commodity in future.
4. Ignorance and misconceptions of the consumer.
5. Demand for necessary goods in life.

Important points

- Individual demand refers to the quantities of a good demanded by an individual consumer at various levels of prices in given time period.
- The Market demand refers to the summation of quantity of a commodity demanded by all consumers at various price levels in a given time period.
- Individual demand schedule depicts the quantities of a commodity which a consumer will purchase at various levels of price in a given time period.
- Market demand schedule is a list which shows the total quantity of a good that all consumers in the market will purchase at different prices.
- A demand function is the amount of commodity demanded and the factors influencing it. Symbolically, $Dx = f(P_x, I.... P_y\ T)$ The quantity demanded is inversly related to its price, other things remaining constant like consumer's income, price of related goods and taste.
- The Law of demand states that there is an inverse relationship between the price and quantity demanded of a commodity.
- Other things remaning constant, with fall in price the quantity of goods demanded increases, this is called expansion in demand.
- Other factors remaining constant, with rise in price the quantity of goods demanded decreases this is called contraction in demand.
- The shift of demand curve to the right due to change in other factors of demand like increase in income is called as increase in demand.
- The shift of demand curve to the left or backward due to change in other factors except price like decrease in income is called decrease in demand.
- Those goods for which demand increases with the increase in income are called normal goods.
- Those goods for which demand decreases with the increase in income are called inferior goods.

Exercise Questions

Objective Type Questions :-

1. The law of demand, shows the relationship between the price of a good and its quantity demanded-

   (A) Positive (B) Infinite

   (C) Zero (D) Inverse

2. Market demand curve is derived from the __________ summation of individual demand curves.

   (A) Horizontal (B) Vertical

   (C) Cross (C) None of the above

3. The expansion and contraction of demand is due to which of the following –

   (A) Due to the change in the price of the good

   (B) Due to the change in the price of other goods

   (C) Due to change in the taste and preference of a consumer.

   (D) Due to change in consumer's income

4. If the demand function of a good is given as Dx = 35 - 4P, then what will be the demand of a good at price Rs. 5 per unit.

   (A) 20 (B) 15,

   (C) 35 (D) 0

5. The Law of demand does not operate in which of the following goods :-

   (A) Giffen goods

   (B) Normal goods

   (C) Substitute goods

   (D) Complementary goods

Very Short Answer Type Questions :-

1. Write the meaning of Giffen goods.
2. Define Law of Demand .
3. How is Market Demand Curve derived form individual demand curves?
4. If with the increase in the income, the quantity demanded of a commodity increases, then what are such commodities called ?
5. If the demand curve shifts upward to the right with increase in income, what is it called ?

Short Answer Type Questions :-

1. Explain the movement on a demand curve and shift in demand curve with the help of a Figure.

2,. Explain the difference between a normal good and an inferior good.

3. If X & Y are substitute goods then what will be the effect of fall in the price of Y on the quantity demanded of X. Explain with the help of suitable Figures.

Essay Type Questions :-

1. Explain law of demand with the help of a schedule and a figure
2. Explain the differences between change in demand and change in the quantity demanded with respect to demand curve.
3. Explain the effects on the demand of a good in the following situations

   a) Increase in income.

   b) Increase in the prices of related goods.

Answer Table

1	2	3	4	5
D	A	A	B	A