2. UTILITY ANALYSIS

2. Distinguish ordinal utility from cardinal utility.

The theory of consumer behaviour has two aspects (1) Marginal utility approach and (2) indifference curve approach. The marginal utility approach is called as cardinal utility approach. The indifference curve approach is called as ordinal utility approach.

Meaning of utility: 'Utility' is the power of a commodity or service to satisfy a human want. Generally utility is said to mean satisfaction. But there is distinction between utility and satisfaction. Utility of commodity refers to the expected satisfaction where as satisfaction refers to 'realised satisfaction'.

When a consumer wants to buy a commodity, he thinks about the utility or amount of satisfaction that he is expecting from it. Only after consuming the commodity he realises satisfaction.

Measurement of utility: In the marginal utility approach it is assumed that utility is measurable, just as the weight of an article is measureable. The utility of a product can be measured by money. The units of measurement are called "units". For example, if a person is willing to pay 30 paise for cup of tea. We can say that the utility which he derives from a cup of tea is equal to 30 units.

Cardinal and Ordinal utility: These are two approaches in the utility analysis. The terms cardinal and ordinal are borrowed from mathematics. The number 1,2,3,4 etc. are cardinal numbers. The numbers 2 for example is twice the size of number 1. According to the concept of cardinal utility, it is possible to measure and compare the utilities of two commodity. For example an apple may yield a consumer utility of 20 units. Where as a mango, yield 10 units. From this it is clear that the consumer derives twice as much utility from an apple as from a mango. The units of measurement are imaginary. They are called units or utils. Marshall and other writers used the cardinal number system to utility. They argue that the utility of a commodity can be measured and compared with others.

On the other hand, according to the concept of ordinal utility, the utility cannot be measured. The numbers 1st, 2nd, 3rd, 4th are ordinal numbers. The ordinal numbers are ordered or ranked. For example, the consumer prefers Apple than mango. The ranking does not tell as the size of the number. There is no trouble of measuring utility. According to the ordinalists utility is non-measurable, *Prof Hicks* and *Allen* used the ordinal system of utility.

In short, the cardinal approach has come to be known as Marshallian utility analysis and the ordinal approach is called

Hicksian indifference curve approach.

3. TOTAL UTILITY AND MARGINAL UTILITY

3. Explain the concept total utility and marginal utility.

Utility are of two types 1) Total utility and the Margin utility. According to Prof. *Mayers* "Total utility is the amou of satisfaction, derived from the consumption of or posse sion of good". On the other hand, marginal utility is the utili or satisfaction derived from one more unit of the commodit In short total utility is the total satisfaction derived in consum ing all the quantities of commodity, in possession. Margin utility is the utility derived in consuming just one more unit o that commodity. For example if a consumer consume 5 apple the total satisfaction which he derives known as total utility The utility which he derives from the 5th apple will be known as the marginal utility. The total utility and marginal utility, are closely related with each other. Their relationship can be illus trated with the help of a table.

No. of apples Consumed	Total utility	Marginal utility
1	10	10
2	18	8
3	25	7
4	30	5
5	32	2
6	32	0

The above table reveals the following relationship 1) When marginal utility declines, total utility increase at a diminishing rate. 2) When marginal utility reaches zero, the total utility is maximum.

Among these two concept the marginal utility occupies an important place in economic theory. Economist have developed two important laws, based on the marginal utility analysis. 1) The law of diminishing marginal utility. 2) The law of

equi-marginal utility. With the help of these two laws, the theory of consumer behaviour is being studied.

4. LAW OF DIMINISHING MARGINAL UTILITY

4. State and explain the law of diminishing marginal utility.

This law refers to a common experience of all consumers, in consuming commodities. It is a psychological fact, that when a consumer gets more and more units of the same commodity during a particular time, the utility from the successive units will diminish.

The concept of diminishing marginal utility was developed by W.S. Jevons, Karl Menger and Leon walras. However, the law of diminishing marginal utility was stated in a systematic way by Gossen and Marshall. According to this law as a person purchases more and more units of a commodity, its marginal utility goes on diminishing.

Marshall has defined the law as follows: *The additional benefits which a person derives from a given increase of his stock of a thing diminishing with every increase in his stock that he already has".*

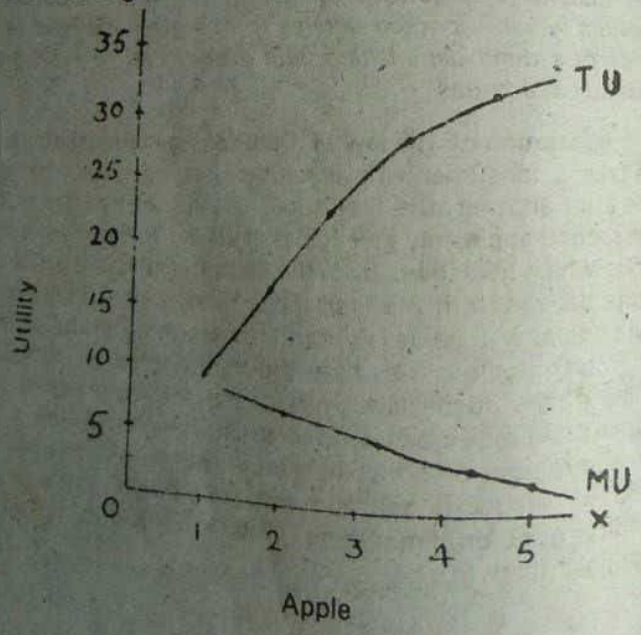
Illustration of the law of Diminishing marginal utility: Let us take a consumer who consume. As he consumes apple one after another, the first apple would give him more utility the second apple may give him less utility. In other words, the utility which he derives from the second apple, is less than the utility derives from the first apple. Similarly the utility of the third apple, will be less than the second, and the utility of the fourth apple is less than the third and so on. Thus the utility of the successive units of the commodity consumed without a break goes on decreasing. In other words as a consumer goes on consuming more and more units of a commodity. The utility derived from the additional unit of a commodity, goes on diminishing. This is the law of diminishing marginal utility.

The following table and figure shows the operation of the law of diminishing marginal utility.

Utility Schedule of a consumer

No.of apples consumed	Total Utility	Marginal Utility
	10	
1	18	10
2	25	8
3	30	7
4	32	5
5		2

From the utility schedule, it is clear that total utility goes on increasing at a diminishing rate. The marginal utility goes on diminishing. The law of diminishing marginal utility can be explained with the help of total utility and marginal utility by means of a diagram.



The commodity consumed are represented in the x-axis and the utility are expressed in y-axis. With help of the data available by marking dot, for the total utility and marginal utility, we can draw two separate curves as shown in the figure. If we look at the curves the total utility curve slopes upward from left to right and the marginal utility curve slopes downward from left to right. This curve slopes downward to the right because with every increase in the quantity of the commodity consumed, the marginal utility decline. It shows the law of diminishing marginal utility.

Assumptions of the law: The law of diminishing marginal utility based upon certain assumptions. The law assumes that the taste, habit, fashion of the consumer remain unchanged. Any change in them may obstruct the operation of the law. 2. The law assumues that the various units of the commodity are homogeneous. For example, all units of apple should be the same size and quantity. 3. There is continuity in the consumption of one commodity. There is no time gap between the consumption of one commodity and another. 4. The units of the commodity should be of a suitable size. It should be too small in size. 5. The income of the consumer remains constant. Based on these assumptions the law operates successfully.

Exceptions of the law: The law of diminishing marginal utility has exceptions 1. There are certain thing where the marginal utilty of that does not diminish with every increase in its stock. Example collection of stamps, rare coins, reading of novels 2. The law does not apply to money. The more money a person has, the greater is his desire to acquire more of it. 3. *Pigou* has pointed out, the utility of commodity depends on the quantity of the commodity which other people possess. For example in a locality where there are rich people possession of a second car, will give him more satisfaction.

Importance of the law: The law of diminishing marginal utility has immense use in economics.It has practical utilityand

theoretical significance. 1. The law of diminishing marg
utility is the basic law of consumption. The law of dem
the law of equimarginal utility and the concept of consu
surplus are based on it. To Quote *Nevin*, the normal dem
curve is no more than a graphical expression of the law
diminishing marginal utility. 2. It helps to regulate our expen
ture. 3. It provides the basis for the progressive taxation
public finance. The marginal utility of money to rich people
not as great as it is to a poor man. So the income of the ri
people are taxed at a progressive rate. 4. The law of dimin
ing marginal utility provides the basis for egalitarian societ

Criticism of the law: The methodology relating of the la
of diminishing marginal utility has been subject to criticism
modern economist. The main criticism are 1. The utility is
mental phenomena and it cannot be measured by money. 2
The law assume the constant utility of money. This is highl
unrealistic 3. In practical life, nobody consumes the commo
ity without any interval of time.

5. LAW OF EQUI-MARGINAL UTILITY

5. Explain the law of equi-marginal utility or Explain the principle of substitution.

The principle of consumer's equilibrium is best explained through the law of Equi-marginal utiliy. This is an importan law of consumption which has been derived from the law o diminishing marginal utility. This law is also referred to as th law of substitution, the law of maximum satisfaction, the law of equi-marginal returns, Equi-marginal principle, the principl of marginal comparisons etc., It is also called as Gossen's second law.

Gossen explained the law of substitution for the first time He called it as the second law of consumption. However it was Marshall who popularised it. He has shown that the law of substitution as applied to the behaviour of the consumer called the law ow equi-marginal utility.

Law of equi-marginal utility: This law has been stated by *Marshall* in these words. "If a person has a thing which can be ut to several uses, he will distribute it among the uses in uch a way that it has the same marginal utility in all. If he has reater marginal utility in one use than in another he would ain by taking away some from second use and applying it for ne first".

This law explains the behaviour of the consumer relating o the purchase of two or more number of commodities or the se of thing that can be put into several uses.In order to aximise his total utility the consumer will substitute one com- odity for another. He will substitute one commodity for an- ther until one paise spent on any one commodity yields the ame satisfaction. That is why it is called as the law of substi- ution.

Illustration of the law of equi-marginal utility: Every indi- idual according to this law tends to regulate the expenditure f his money income. The consumer will stop buying at the oint at which price equals marginal utility. This will be true ot only of one commodity but any number of commodities hich a consumer buy. A Consumer can obtain maximum sat- isfaction when he allocates his income in such a way that the arginal utilities of the various goods purchased are propor- onal to their prices. The consumer is in equilibrium when.

$$\frac{\text{Mu of A}}{\text{Price of A}} = \frac{\text{Mu of B}}{\text{Price of B}} = \frac{\text{Mu of C}}{\text{Price of C}} = \text{etc.}$$

Suppose the consumer wants to buy two types of fruits ay Orange and Apple. The price of Orange is 50 Paise per nit and the price of Apple is Re.1. The consumer has Rs.5/- o spend on these items. The consumer expects one unit of atisfaction from one paise spent. The utility schedule to the onsumer for both Orange and Apple is given below.

Units of money pent	Utility of Orange	Utility of Apple
irst Rupee	10	8

Units of money Spent	Utility of orange
Second Rupee	8
Third Rupee	6
Fourth Rupee	4
Fifth Rupee	2

The equilibrium position for the consumer is to distri his income of Rs.5 in the ratio of Rs.3 on orange and Rs.2 apple. This gives equal satisfaction to the consumer. Th also the highest satisfaction the consumer can get from money income (Rs.5) If he spends his income in any o way his total satisfaction will be less. In our example marginal utility from the third rupee spent on orange is e to the marginal utility from the second rupee on apple. (8 are 6)

The law of equi-marginal utility or the equilibrium of consumer can be stated as follows.

$$\frac{MUa}{Pa} = \frac{MUb}{Pb} = \frac{MUc}{Pc}$$ and so on. Mu-Marginal utilit

a,b,c, Commodities, P-Price

In short, consumer allocates his expenditure so that marginal utilities yielded by the last rupees spent on each co modity are equal.

Assumption of the law of equi-marginal utility: The law based on certain assumptions. Marshall has explained t law on the following assumptions.

1. Utility can be cardinally measured, 2. Marginal uti of money remain constant. 3. Taste of the consumer rema the same. The money income of the consumer remains same. It means that the consumer goes to the market wit fixed sum of money 4. The price of substitute goods rem the same and no new substitute goods has been bought the consumer 5. Units of a particular commodity are identic The consumer buys the commodity at one and the same ti

5. The consumer behaves rationally and he wants to maximise his total utility.

Limitations of the law equi-marginal utility: The law is ubject to certain limitations. It has been criticised on the ollowing grounds.

1. The equi-marginal principle can work out fully if the oods are divisible into small parts. Boulding has argued that here are goods like car, T.V.which are indivisible. In such ases the law is not applicable.

2. Hicks and Allen have shown that this law is based on nrealistic assumption. The assumptions of absolute mea- urement of utility and constant marginal utility of money are nrealistic assumption.

3. It is very difficult to calculate marginal utilities of vari- us commodities accurately.

Importance of the law equi-marginal utility: With all these mitation, the law of equi-marginal utility is considered to be n important law in economics. The law applies not only to onsumption but also applicable to other spheres of economic ctivities.

1. Production: An entrepreneur acts under the influence f this law to maximise his profits. The producer substitutes ne high productivity factor in the place of low productivity actor and low-priced factor in the place of high priced factor. his helps the producer to keep cost of production at low evel.

2. Exchange: The law is applicable in the field of exchange n bringing about equality of price of a commodity in all parts f the market. People may substitute less scarce goods for carce goods. This principle helps individual for allocation of is income between consumption and saving.

3. Distribution: The prices of factors of production are etermined according to the principle of marginal productivity. or maximum profit producer combines the factors of produc- ion in such a way that their marginal product are the same.

4. Public finance: In the field of public finance this finds application. In allocating public revenue among the ous heads of expenditure this law serves as a guide to fin minister. The principle of maximum social advantage is ing but equi-marginal principle.

5. The law of equi-marginal utility helps to bring a the optimum distribution of the commodity among the m bers of community. The commodity is so distributed am different person that its marginal utility in each case come be equal.

6. The law finds application in the case of any comm ity available in limited quantity and that can be put into serv uses. For example the ideal distribution of resources is th which the marginal social utility in each use is the same.

According to *Marshall,* "The application of the princ of substitution extent over almost every field of economi quiry". As *Briggs* and *Jordan* has observed substitution is key note of all economic society".

The state of balance obtained by an end-user of products that refers to the number of goods and services they can buy given their existing level of income and the prevailing level of cost prices. **Consumer equilibrium** permits a customer to get the most satisfaction possible from their income.

6

Demand

1. State clearly the law of demand and explains why does demand curve slope downwards? Are there exceptional cases to it ?

In Economics the term demand occupies a very significant place. According to *Benham,* the demand for anything at a given price, is the amount of which will be bought per unit at time at that price". The demand is always at a price. The relationship between quantity demanded and price is studied under law of demand.

Law of demand: The law of demand explains the inverse relationship between the demand and price. It can be stated as follows, "A rise in the price of a commodity or service is followed by a reduction in the demand for it, and a fall in price is followed by an increase in demand, if conditions of demand remain constant". This is law of demand. It simply says that, if price falls, the demand increase and if price rises, the demand decreases.

In the statement of law of demand the phrase "If conditions of demand remain constant is very important. Conditions of demand refer to fashion, tastes, price of other related goods, change in population and income of the consumers etc., At any given time these conditions remain the same. The law will operate only if the above things unchanged.

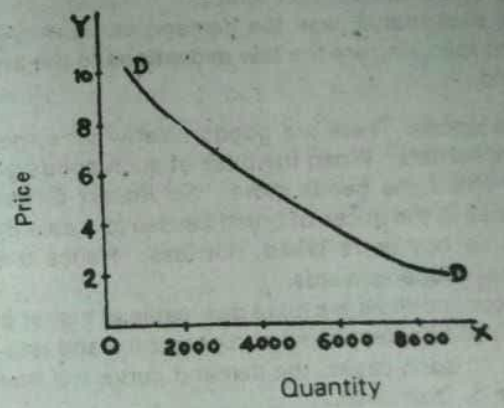
Demand Schedule and demand curve: The law of demand is illustrated with the help of a demand schedule and demand

curve. A demand schedule is a list of prices and quantities. The table below represents an imaginary **demand schedule.**

Price of Apples (per dozen Rs.)	Quantity demanded (in dozen)
10	1,000
8	2,000
6	4,000
4	6,000
2	8,000

From the demand schedule it is clear that the quantity demanded rises as price fall, and the quantity demanded falls as price rises.

Demand curve can be drawn from the demand schedule.



Quantity

In the diagram, DD is the demand curve. Any point on the demand curve DD refers both price and quantity. The demand curve DD is downward sloping to the right. The downward slope of the curve indicates that the quantity demanded rises as price falls.

The demand curve slope downwards because:

price elasticities of demand.

ELASTICITY OF DEMAND

The concept of elasticity of demand is associated with name of *Marshall*. Elasticity of demand refers to the responsiveness of demand to changes in price.

Elastic Demand: Demand is said to be elastic when it is responsive to changes in price. When there is a small change in price, the demand changes very much the demand is to be elastic. For example the price of radio falls a little and demand increases very much demand for radio is said to be elastic.

Inelastic demand: Demand is said to be inelastic when it is not responsive to changes in prices. When the demand for commodity change little, for even a great change in its price the demand for it is inelastic. For example, if the price of salt falls, much amount of demand may not increase. The demand for salt is inelastic.

Marshall defines the concept as follows. "The elasticity of demand in a market is great or small according to the amount demanded increases much or little for a given fall in price and diminishes much or little for a given rise in price".

In short demand is elastic when a small change in price leads to a great change in demand. It is inelastic when a big change in price is followed by a small change in demand.

Types of elasticity of demand: There are three types of elasticity of demand. They are 1) Price elasticity. 2) income elasticity and 3) cross elasticity. Of the kinds of elasticities, it is price elasticity which is of great significance. It is generally referred as elasticity of demand.

Price elasticity of demand: The change in quantity demanded due to a change in price is known as price elasticity of demand. The formula for calculating price elasticity is:

3. The government has to take into account the ela of demand for a product before imposing price control 4. In the case of joint products, separate cost of pr tion of the two commodities are not ascertainable. In cases, price of each will depend on the elasticity of dema each eg., Paddy and straw.

5. The transport authorities also fix the prices for various service after considering their elasticity of dema

6. It is used in the calculation of terms of trade. possible to calculate the terms of trade between cou only by taking into account the elasticities of demand.

7. Elasticity can influence wages. If demand for a ticular type of labour is inelastic, the trade unions can ea get their wages raised.

8. The concept of elasticity can be used to explain the farmers may remain poor even when there is bumper c

9. The rate of exchange between currencies are fi depending on the elasticity of demand for currencies in exchange market.

Thus the concept of elasticity of demand has great nificance in the various fileds of applied economics.

MEASUREMENT OF ELASTICITY OF DEMAND

4. Discuss any two methods of measuring price elasticity demand. *or*
Explain one of the method of measuring the price elasticity demand.

Measurement of elasticity of demand: Alfred Marshall h given different methods of measuring elasticity of dema Measurement of elasticity is useful to find out to what ext the demand is elastic or inelastic. There are a various me ods of measuring elasticity. They are given below:

1. Total outlay or Expenditure method: According to t method total expenditure on the commodity before and af

the change in price is compared. Elasticity of demand is expressed in three ways 1) Unity, 2) greater than unity and 3) less than unity.

Elasticity is *unity* when the total amount spent on the quantity remain the same eventhough the prices has risen or fallen.

Elasticity is said to be *greater than unity,* when the total amount spent increase with a fall in price or the total amount spent decreases with a rise in price.

Elasticity of demand is said to be less than unity when the total amount spent increase with a rise in price and decreases with fall in price. It will be clear from the following table.

No.	Price per dozen Rs. p.	Quantity demanded	Total outlay	Elasticity
1	2-00	3	6-00	
2	1-75	4	7-00	} >1
3	1-50	5	7-50	
4	1-20	6	7-50	} =1
5	1-00	7	7-00	
6	0- 75	8	6-00	} <1

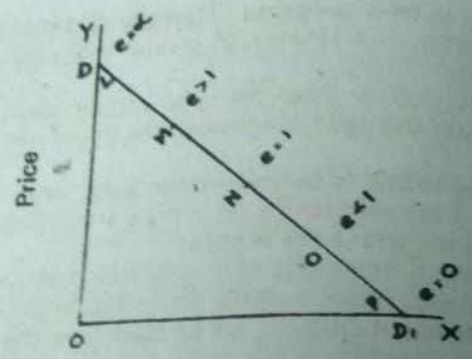
Between 1 and 2, elasticity of demand is greater than unity. 3 and 4, elasticity of demand is unity and between 5and 6, elasticity of demand is less than unity.

Though this method is simple it does not assist in measuring elasticity in exact numerical terms.

2. Point method: Prof. *Marshall* devised a geometrical method for measuring elasticity at a point on the demand curve. According to this method, a straight line demand curve is taken.

In the figure DD, is the straight line demand curve. Elasticity is represented by the distance from D, to a point on the curve divided by the distance from the other end to that point.

For example N is the middle point of the demand curve



Quantity

DD. Elasticity at point $= \frac{ND_1}{ND} = 1$ (Unity).

It is clear that elasticity at a lower point on the curve less than unity, higher point on the curve is more than unity.

The point method of measuring elasticity is very useful to the economists. It is useful to measure price elasticity when there are minute change in price and the quantity demanded.

3. Percentages method: According to this method we compare the percentage change in price with the percentage change in the quantity demanded. If the change in demand is proportionate to the change in price, elasticity is said to be unity. If the change in demand is more than proportionate to change in price, it is greater than unity. If the change in demand is less than proportionate to change in price it is less than unity.

The formula for elasticity of demand is

$$= \frac{\text{Percentage change in amount demanded}}{\text{Percentage change in price}}$$

$$\text{or} = \frac{\text{Change in demand}}{\text{Amount demanded}} \div \frac{\text{change in price}}{\text{price}}$$

4. Arc method: When elasticity is measured between two points on the same demand curve. It is known as arc elasticity. This method uses the mid - point. Between the old and new data in the case of both price and quantity demanded. The formula for measuring arc elasticity is.

$$\text{E.P.} = \frac{\dfrac{\text{Original Quantity - New Quantity}}{\text{Original Quantity + New Quantity}}}{\dfrac{\text{Original price - New price}}{\text{Original price + New price}}}$$

Arc elasticity is average elasticity. It takes into consideration the price and quantity both before as well as after the change.

These are the different methods of measuring elasticity of demand.

5. Write short notes on the following:
a) Income elasticity b) Cross elasticity.

a) Income elasticity: Income elasticity refers to the change in demand which is the result of given change in income. It shows the responsiveness of a consumer purchase of that commodity to a change in his income.

Income elasticity can be measured by the formula

$$\text{Ey} = \frac{\text{Proportionate change in quantity demanded,}}{\text{Proportionate change in income.}}$$

Income elasticity can be classified under five heads.

1) Income elasticity, is zero: when quantity demanded remaining unchanged as income rises.

2) Income elasticity is negative: When quantity demanded fall as income rises, eg. inferior goods.

Income elasticity is unity: When the proportion of the consumer's income spent on the commodity is exactly the same before and after the increase in income.

4) Income elasticity is greater than unity: When the consumer spends a greater proportion of his money income on the commodity after the increase in income.

5) Income elasticity is less than unity: When the consumer spends a smaller proportion of his money income on the commodity after the increase in income.

These are the types of income elasticity of demand.

6) Cross elasticity of demand: The responsiveness of demand to changes in the prices of other commodities is called the cross elasticity of demand. A change in the price of one good causes a change in the demand for another. This shows cross elasticity of demand. This type of elasticity arises in the case of inter-related goods; such as substitutes and complementary goods. Cross elasticity is measured by the following formula.

$$\frac{\text{Percentage change in the quantity of good X}}{\text{Percentage change in the price of good Y}}$$

Cross elasticity can vary from minus infinity to plus infinity. Complementary goods will have negative cross elasticity and substitutes will have positive cross elasticities.

$$E = \frac{\text{Percentage change in the amount demanded}}{\text{Percentage change in the price}}$$

The responsiveness of demand to change in price d... from product to product. There are five different kin... **price elasticity of demand.** They are:

1. Perfectly elastic demand: It refers to a situation ... a small fall in price leads to an unlimited extension of dem... and small rise in the price caused the demand fall to zero. ... demand is perfectly elastic or the elasticity of demand is i... ity. (E =)

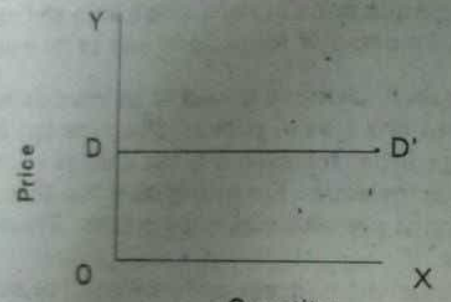


Figure shows an infinite elastic demand curve DD'. It... horizontal line parallel to the X-axis.

2. Perfectly inelastic demand: It refers to a situation wh... the quantity demanded remains unchanged irrespective of a... rise or fall in the price of a commodity. The demand is p... fectly inelastic, the elasticity of demand is zero. (E = 0)

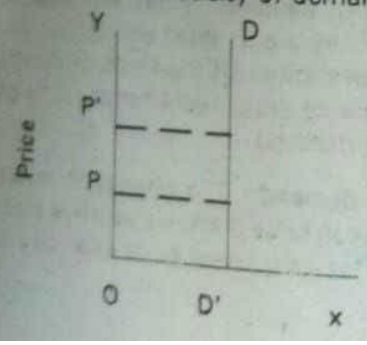


Figure shows a perfectly inelastic demand curve DD'. It ... a verticle line parellel to the Y-axis. In the figure amount ... demanded is OD' both at the price OP and at the price OP'

3. Relatively inelastic demand or less than unity: It refers to a condition when a big change in the price leads to a small change in the quantity of demand. The demand is a relatively inelastic, if the elasticity of demand is less than unity. (E < 1)

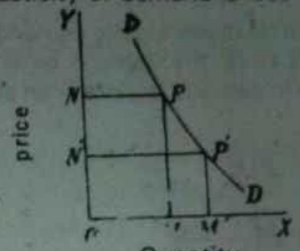


Figure shows a relatively inelastic demand curve DD. As the price from N to N' the quantity demanded extends from MM'. Here the increase in quantity demanded is less than proportionate to the fall in price.

4. Unitary elastic demand: When proportionate change in price brings about an equal proportionate change in the demand, the demand has unitary elasticity.

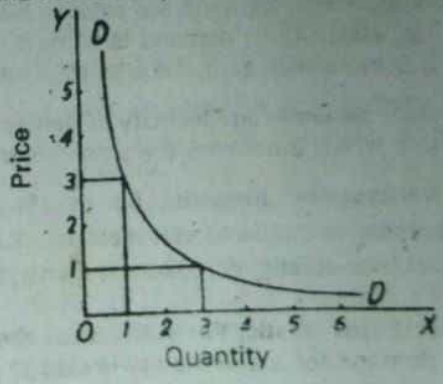
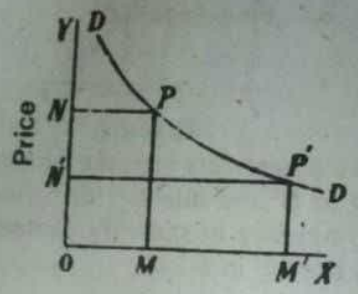


Figure shows a unitary elastic demand. As the price from Rs. 3 to 1, the quantity demanded increases from 1 A demand curve which is having unitary elasticity is c rectangular hyperbola.

5. Relatively elastic demand: It refers to a situation a small change in price leads to a great change in the qua demanded. The elasticity of demand is greater than E>1.

Figure shows relatively elastic demand curve DD. A price falls from N to N' the demand extends from M to Here the increase in demand is more than proportionate to fall in price.



Of these five kinds of elasticities, both inelastic dem and infinitely elastic demand are seldom met with in real In real life, elasticity of demand is somewhere between limits. It is more than zero and less than infinity.

Factors determining Elasticity of demand: There are s eral factors which determine the elasticity of demand.

1. Necessaries - inelastic: For necessaries and conv tional necessaries the demand is inelastic. E.g. Salt, Toba

2. Luxuries-elastic: For luxuries, demand is comparati elastic. Eg. Ratio.

3.Sustitutes elastic; For substitutes the demand is e tic: The demand for a commodity is said to be elastic if t

ommodity has substitutes. e.g. Coffee and tea.

4. Good with several uses elastic: Demand for goods aving several uses is elastic. e.g. Coal.

5. Postponable uses - elastic: Demand for goods the use f which can be postponed is elastic. e.g. Umbrella.

6. Level of price: Elasticity also depends on the level of rice. If the price is either too high or too low, the demand will e inealstic. e.g. diamond, safety pin.

7. Some commodity may have inelastic uses: e.g. Wheat s human food has inelastic demand but its demand as cattle eed is elastic.

8. Proportion of consumer's income spend on the commodity: The proportion of total expenditure devoted to a commodity is small the demand for it tends to be inelastic e.g. Proporation of expenditure on ink is quite small and consequently the demand for this is inelastic.

9. Habit and Fashion: Demand for those good which are habitually consumed or which are in fashion is inelastic.

10. Time: Elasticity varies with the length of time periods. In too larger period of time demand is more elastic. In the short periods of time demand is less elastic or inelastic.

These are the factors which determine whether the demand for a commodity is elastic or inelastic.

Practical importance of elasticity of demand: The concept of elasticity of demand has practical importance.

1. It guides the business man in fixing the prices of his goods. If the demand for a commodity is inelastic he can raise the price. If it is elastic, he has to bring down the price.

2. The Finance minister has to keep in mind the elasticity of demand for a commodity before imposing a tax. The Finance Minister must levy tax on such commodities for which the demand is less elastic.

5

Consumer's surplus

1. What do you understand by the term "consumer's surplus" Has the concept any practical value? or
What is consumer's surplus? Can it be measured?

The concept of consumer's surplus is an important tool in modern economic theory. The idea of consumer's surplus was originally devised by *Dupit,* a French Engineer-Economist. *Marshall* elaborated and further refined this concept and described it as consumer's surplus. Prof *Boulding* has renamed it as Buyer's surplus. *Hicks* rehabilitated it, with the help of indifference curve technique in 1930. However, this doctrine is very often attributed to Alfred Marshall.

Meaning: The price which a consumer pays for a commodity is sometimes less than what he is willing to pay for it. In otherwords, the satisfaction that a consumer gets from the purchase of a commodity is more than the price paid for it. Thus he derives a surplus satisfaction, which Marshall calls consumer's surplus.In the words of *Marshall,* The excess of price which a person would be willing to pay rather than go without the thing over that what he actually does pay is the economic measure of his surplus satisfaction. It may be called as consumer's surplus.

Consumer's surplus can also defined in the following ways.

1. potential price minus actual price.
2. price a consumer is prepared to pay minus price which he actually pays.

does not gives surplus utility of satisfaction since u
equal to price. Hence there is no shaded area in th
rectangle. The shaded area represents consumer's su

The relationship between the price of a commod
its consumer's surplus is direct. If the price of the com
falls, consumer's surplus decreases. The reason is, when
raises, the difference between what he is willing to pa
what he pays get reduced. So the consumer's surplus
diminishes.

Assumptions of consumer's surplus: The Marshall
cept of consumer's surplus based on certain assumptio

1. It is assumed that the marginal utility of mone
mains constant.

2. Utility is quantitatively measureable. It is based o
cardinal utility analysis.

3. It is also assumed that substitute and complem
have no influence upon the demand of the commodity.

Based on these assumption Marshall explained the
cept of consumer's surplus.

Criticisms of the concept of consumer surplus: Marsh
concept of cohsumer surplus is severely criticised by ma
economists. Prof.*Nicholson Cannan, Hick, Taussig a*
Dawenport are important among them. The main criticism
in the assumptions or the doctrine.

1. The assumption of marginal utility of money rema
constant is unreal.

2. The utility cannot be measured quantitative
Consumer's surplus based on the cardinal utility analysis
hypothetical and unreal.

3. The concept of consumer's surplus is not applicable
the case of necessaries of life. People would be prepared
pay anything for necessaries of life.

4. Prof.Nicholson criticised the concept as hypothetic
imaginary and unreal. In the case of highly luxurious article
of conspicuous consumption, there is no consumer's surplu

3. satisfaction minus sacrifice.

In real life, there are several commodities from which consumer obtain surplus satisfaction or he secures more satisfaction than what he has paid for it. For example, commodities like salt, post-card, cheap-transport (Season ticket) etc., yield surplus satisfaction to the consumer.

For example, a consumer who wants to buy sugar is prepared to pay Rs.6/- per kilo. In the market, the price actually quoted is Rs.4/- per kilo. The difference between what the consumer is prepared to pay(Rs.6/-) and what he actually pays (Rs.4/-) is called consumer's surplus.

The consumer's surplus is the product of opportunities available to the consumers in a country. The consumer's surplus entirely the product of environments. The volume of consumer's surplus is larger in advanced countries because these commodities are available to the consumers in abundance at cheap rates.

Measurement of consumer's surplus

The following table illustrate measurement of consumer's surplus.

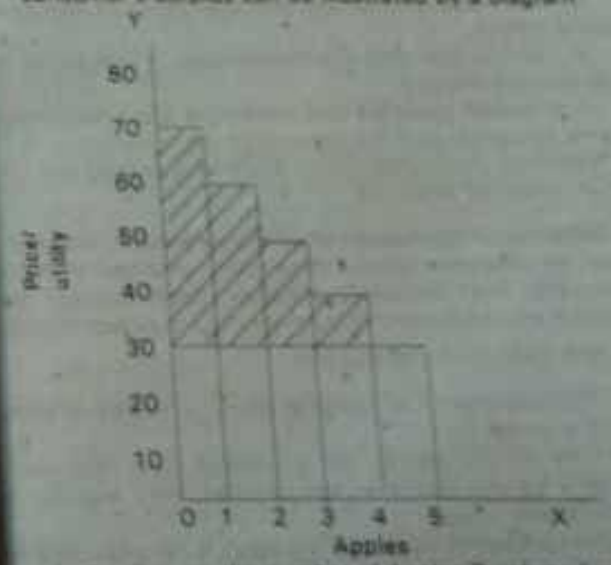
Units of Apple	Marginal Utility (Potential price)	Actual Price	consumer's Surplus
1	0-70 paise	0-30 paise	0-40 paise
2	0-60 "	0-30 "	0-30 "
3	0-50 "	0-30 "	0-20 "
4	0-40 "	0-30 "	0-10 "
5	0-30 "	0-30 "	—
Total units Purchased 5	Total Utility 250 paise	Total Spent 150 paise	consumer's surplus 100 paise

For example the consumer purchase 5 units. He pays 30 paise for each. For the first apple the consumer is willing

pay 70 paise because the first Apple gives him satisfaction of 70 paise. But the consumer actually pays only 30 paise. Thus the consumer gets surplus satisfaction equal to 40 paise. Similarly he gets surplus satisfaction equal to 30,20,10 paise from other units. Thus total utility in terms of money is Rs.2-50 and total price is Rs.1-50 Consumer's surplus Re.1/-

In terms of formula consumer's surplus is potential prices minus Actual price. Rs.2-50-Rs.1-50 Rs.1/-. In other words the price which the consumer is willing to pay (Rs.2-50/-) minus the price what the price what he actually pay (Rs.1-50/-) is consumer's surplus (Re.1/-)

consumer's surplus can be illustrated by a diagram



In the diagram the number of Apples Purchased are measured along X-axis and utility or price paid along OY-axis. The first rectangle shows utility of the first Apple, the second rectangle the utility of the second and so on. The shaded area shows the surplus utility derived from apples. The fifth Apple

1. The relation between price and quantity demanded is inverse. Such, an inverse relation can be shown only by a falling curve.

2. As the price of commodity falls, new consumer purchase the commodity. As a result the quantity of demand will rise.

3. The existing consumers purchase additional units of commodity, as the commodity becomes cheaper. This is based on the law of diminishing marginal utility.

4. When the price of a commodity falls, the real income of the consumer increase. The increased income enables the consumer to buy more. This effect is known as income effect.

5. When the price of a commodity falls it becomes a cheaper good. So consumer substitutes the cheaper goods. This effect is called substitution effect.

In some exceptional case the demand curve may slope upwards. The following are the **few exceptions** to the general law of demand.

1. Giffen goods: There are goods chiefly consumed by the poor wage earners. When the price of such goods go up, the poor buy the same goods more. *Sri Robert Giffen* observed that a rise in the prices of bread caused low paid British wage-earners, to buy more bread, not less. Hence the demand curve may slope upwards.

2. Some commodities are more desireable at higher price. Then more of it will be demanded at higher price and less of it at lower price. In such cases, the demand curve will have an upward slope e.g. Diamond.

3. If people fear that the rise in price in future will be more than the prevailing price, they will buy more even at higher price. Similarly if they anticipate further fall in price, they buy less even at less price.

So the exceptional demand curve slopes upward.

2. What are the determinants of demand ? What happens if one or more of them should change ? ***or***