Intro Microeconomics

1. ECONOMICS– it refers to the study of using the scarce resources to satisfy maximum needs

MICRO ECONOMICS: It is a study of behavior of individual units of an economy such as individual consumer, producer etc.

MACRO ECONOMICS: It refers to study of economy as a whole. Eg. GDP, Aggregate Demand.

2. ECONOMY: An economy is an area where economic units exchange goods and services

3. ECONOMIC PROBLEM: "An economic problem is basically the problem of choice" which arises due to scarcity of resources having alternative uses".

4. CAUSES OF ECONOMIC PROBLEM:

i) Scarcity of resources

ii) Unlimited wants

iii) Limited resources having alternative uses

5. BASIC (CENTRAL) ECONOMIC PROBLEMS

i) Allocation of resources

a. What to produce?

Which products should be manufactured and in what quantities? The products that do not command positive prices in the market will not be manufactured. As a result just those goods with positive prices are to be produced and in such a manner that will clear the markets.

b. How to produce?

'which techniques are to be adopted'?. There are two types of techniques. A labour-intensive technique would employ relatively more labour and less capital. On the other hand, capital- intensive technique means more capital and less labour.

The choice of technique depends on the prices of the factors of production. That is, if labour is cheap and capital is expensive, a labour-intensive technique would be considered and vice-versa. The prices of labour and capital are determined by the demand for and supply of labour and capital respectively

c. For whom to produce

The solution of this problem is very simple commodity can be consumed only by people who have more purchasing power. Price mechanism determines the income of the workers, i.e.; purchasing power. The purchasing power of the owner of capital is determined in the same way. Thus, it relates to determining the price of every commodity and every factor of production

ii). Efficient Utilization of resources

iii.) Growth of resources

i. Meaning

ii. Shape

iii. Reason for such shape

iv. Opportunity cost & Marginal Opportunity Cost concept

v. Shift and rotation in PPC

vi. Depicting central problems using PPC.

(i) It is a curve

- Representing various combination
- Of two goods that can be produced
- Using all the given resources
- For a given state of technology, resources and period of time

(ii) Example– (suppose the resource is fixed i.e., only 10 hector of land)

Good Y	Good X
150 kg	–
130 kg	1kg
100 kg	2kg
60 kg	3kg
0	4kg

Good Y

Good X

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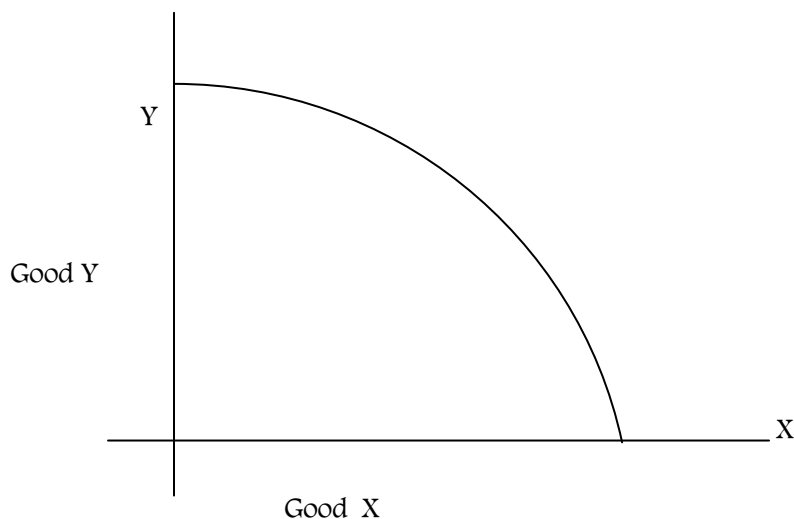
The Shape of PPC curve is –

- Downwards sloping
- Concave to the origin

(iii)   Why it is downward sloping?

- Because a producer has limited resources. So, to increase the production of one good the other has to be sacrificed. Hence, it is downward sloping.

➢ Why PPC/PPF / transformation curve is is concave?

ANS. The PPC is concave to the origin because of the increasing Marginal opportunity cost. The MOC increase because the resources are not equally efficient in production of both the goods, hence more of one good is to be sacrifice for producing an additional unit of another.

➢ What is Marginal opportunity cost?

ANS. A MOC is the sacrifice of production in one good or cost incurred, for producing one additional unit of another. It is the slope of PPC.

$$MOC = -\Delta Y/\Delta X = \text{Loss of Y/Gain of X}$$

Concept of Opportunity Cost–

OC is the benefit of next best alternative forgone.

In economics we not only consider the cost which has been actually incurred but also the cost of the benefit which could not be gained in this way it is different from Accountancy, as it is just a study that tells about decision making.

➢ Depicting central problems using PPC–

Other than the three central problem "what to produce" , "how to produce" , "for whom to produce" there are two other problems as well in an economy phase.

They are–

(i)   Problem of growth

(ii)   Problem of fuller utilization of resources

1. If there is rightward shift in the PPC curve it indicates growth In the economy. It can be representing by the following diagram–
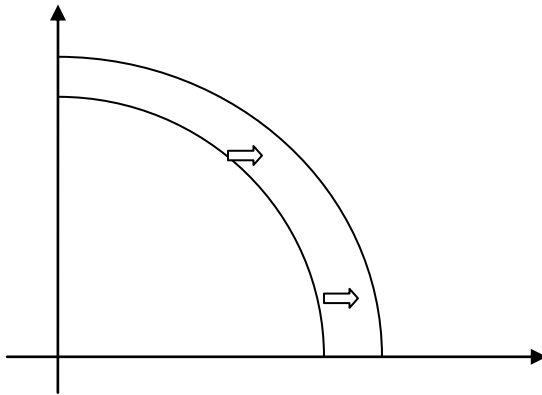

2. An economy can lie in two situations:–
   (i) When it is utilizing all its resources efficiently in such a case it will produce a combination which lies on the PPC.
   (ii) It may not utilize all the resources efficiently indicating the problem of inefficient utilization in such a case it will produce a combination which lies inside the PPC.

➢ Producing a combination outside the PPC is not feasible (possible)

Not feasible

Full and efficient utilization of resources

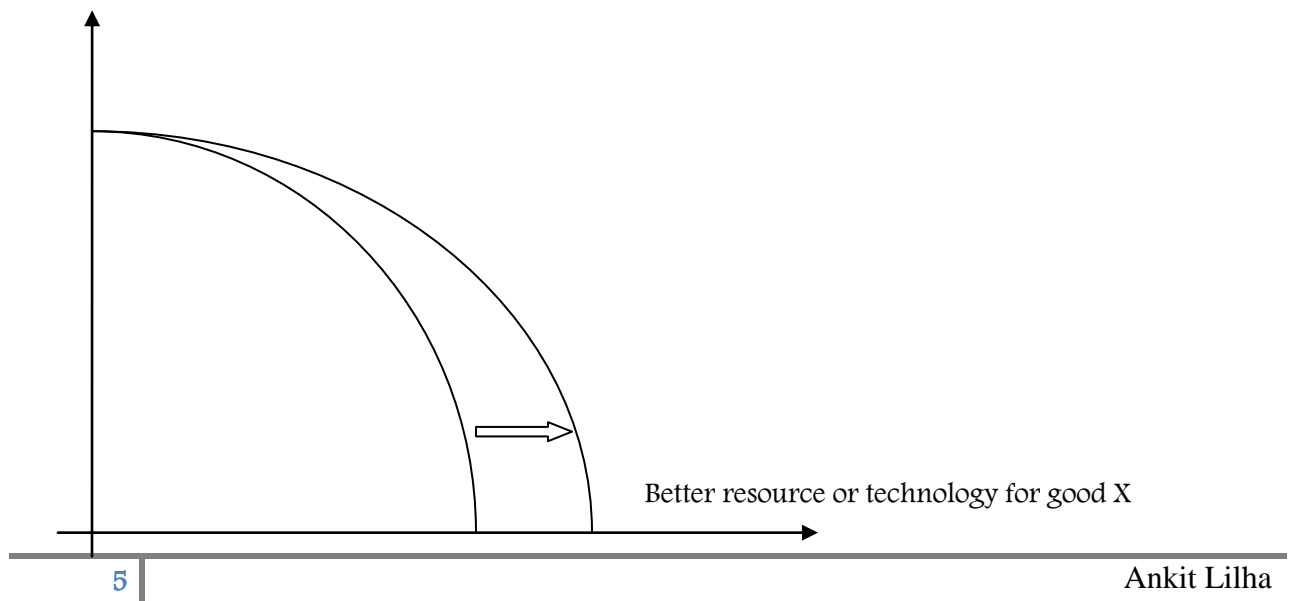Inefficient or underutilization of resources
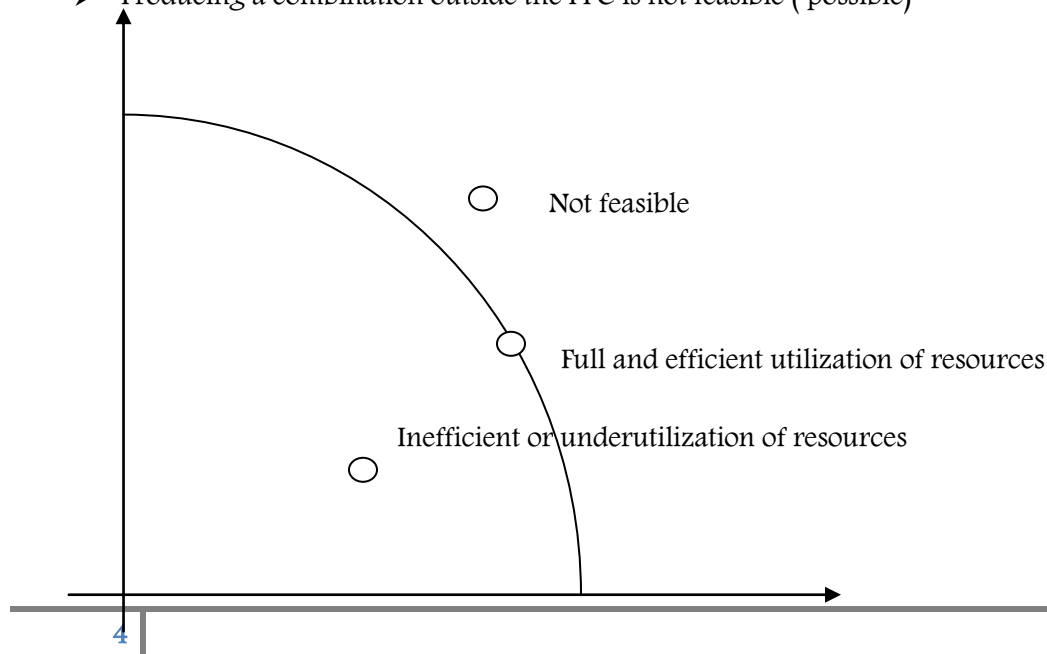
(v) reasons for shift and rotation

1) Shift occurs when a better technology or resource is developed for both the goods.
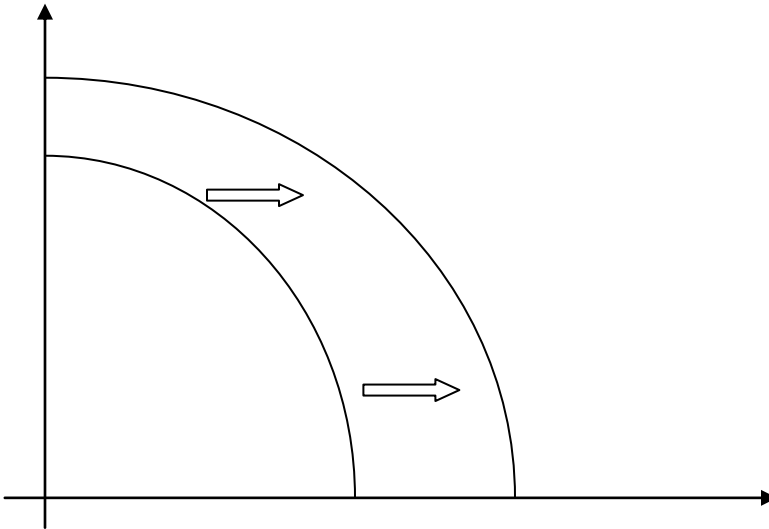
2. Rotation occurs when a better technology or resource is developed for a particular good.

Better resource or technology for good X

Questions for practice (from NCERT & past paper)

Introduction & PPC:-

1. Give two examples of macroeconomics studies.
2. Explain how scarcity and choice go together?
3. Why do problems related to allocation of resources in an economy arise? Explain.
4. Why does technological advancement or growth of resources shift the PPC to the right?
5. Explain how a production possibility curve is affected when resources are inefficiently employed in an economy.
6. Draw a PPC showing the following situations:
   (i)   Full employment of resources
   (ii)   Underemployment of resources
   (iii)   Growth of resources..
7. Explain with the help of a diagram the situations of inefficient and efficient utilization of resources in an economy.
8. Define marginal opportunity cost along a PPC

                         Or

   Define MRT (marginal rate of transformation) along a PPC.
9. What does increasing marginal opportunity cost along a PPC mean?
10. An economy produces two goods: watches and shoes. The following table summarizes its production possibilities. Calculate the marginal opportunity costs of watches at various combinations.

Watches (in million)	Shoes (in thousands)
0	90,000
1	80,000
2	68,000
3	52,000
4	34,000
5	10,000

11. When is PPC a straight line?

12. A country produces two goods: bananas and apples. Its production possibilities are shown in the following table. Plot the PPC in a graph paper and verify that it is concave to the origin. What is the pattern in the table that gives rise to the concave shape of the PPC?

Possibility	A	B	C	D	E	F
Bananas	100	95	85	70	50	25
Apples	0	1	2	3	4	5

13. How is production possibility curve affected by unemployment in the economy? Explain.

Or

"Massive unemployment shifts the PPC to the left. "Defend or refute.

Consumer Equilibrium

1. Explain the law of diminishing marginal utility with the help of a total utility schedule.
2. How does price line change when price of Good-X changes? Show diagrammatically.
3. Explain the concept of Marginal Rate of Substitution (MRS) by giving an example. What happens to MRS when consumer moves downwards along the indifference curve? Give reasons for your answer.
4. What are monotonic preferences? Explain why is an indifference curve
    (i)   Downward sloping from left to right and
    (ii)   Convex.
5. Explain the concepts of
    (i)   Marginal rate of substitution and
    (ii)   Budget line equation with the help of numerical examples.
6. Starting from an initial situation of consumer's equilibrium, suppose MU of rupees increases. Will it increase or decrease the quantity demanded of the product?
7. Derive the law of demand from the single commodity equilibrium condition "Marginal utility = price"

    Or

    Derive the inverse relation between price of a good and its demand from the single commodity equilibrium condition 'Marginal utility = Price'.
8. A consumer consumes only two goods X and Y, at a consumption level of these two goods, he finds that the ratio of marginal utility to price in case of X is higher than in case of Y. Explain the reaction of the consumer.

9. A consumer consumes only two goods X and Y. At a certain consumption level of these goods, he finds the ratio of marginal utility to price in case of X is lower than in case of Y. explain the reaction of the consumer.

10. Explain the concept of Marginal Rate of substitution. Explain the reaction of the consumer when Marginal Rate of Substitution is higher than the ratio of prices.

Utility- It is satisfaction derived from the consumption of a good or,

Want satisfying power of commodity is known as utility.

Two approach for measuring utility are:-

Cardinal approach:-"When utility is measured in quantitative terms. The unit for measurement in this approach 'Utils'"

Ordinal approach: – "when utility is measured through comparison between two goods it is said to be ordinal approach."

Cardinal approach:-

Total utility and Marginal Utility:-

Total Utility: – Total satisfaction derived from consumption of all the units of a good is called total utility.

Marginal Utility: – Satisfaction derived from the consumption of one additional unit of a good or the increase in total utility from consumption of on additional unit

| Units	MU	TU
1	20	20
2	16	36
3	10	46
4	5	51
5	0	51
6	–2	49

Total Utility= TU= $\sum MU$

$$MU = TU_N - TU_{N-1} \quad OR \quad MU = \Delta TU / \Delta Q$$

Law of Diminishing Utility:-

As we consume more and more of a commodity the satisfaction derived from every additional unit keeps on declined i.e. marginal utility keeps on decreasing this is Law of diminishing Marginal Utility.

Assumption of the law: –

1. There is a standard unit of consumption.
2. The consumption is continuous i.e. there should not be too much time gap between consumption of two units.
3. The consumer is rational.
4. Marginal utility of money remains constant.
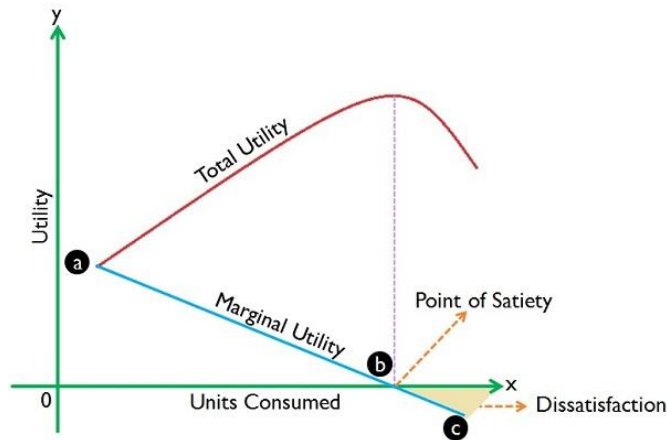
Relationship between Total Utility and Marginal Utility: –

1. When Marginal utility is positive, Total Utility increases.
2. When Marginal utility is 0 Total utility is maximum.
3. When Marginal utility is negative, total utility is decreasing.

Law of Equi-Marginal utility: – A consumer consuming two goods will be in equilibrium when the ratio of their marginal utilities is proportional to their price.

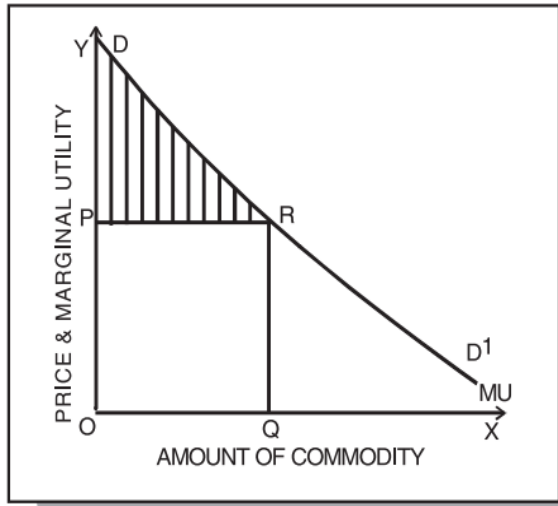**Example:–** Price of X=Rs.10 MU_x=30U therefore MU_x/P_x=3

Price of Y=Rs.5 MU_y=20U therefore MU_y/P_y=4

MU_x/P_x >MU_y/P_y therefore Y will be preferred until the ratio of MU_y/P_y becomes 3

Consumers Surplus–

It is a situation when a consumer is willing to pay more than what he actually pays.

Consumers Surplus = What consumer is ready to pay (MU_x / MU_m) – What he actually pays(P_x)

Consumers Equilibrium–

- It refers to a situation
- In which consumer derives maximum satisfaction i.e., he does not want to consume any more commodity

Consumer Equilibrium

For one commodity

$MU_x/P_x = MU_m$

For two commodity

$MU_x/P_x = MU_y/P_y = MU_m$
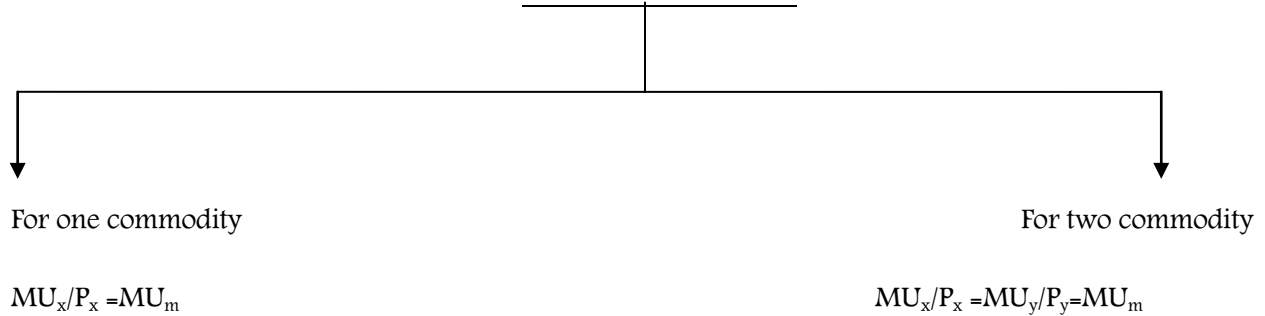
Marginal Utility of Money (MU_m): – The satisfaction derived from one rupee.

Example: – Price of X=Rs.20, Utility of a rupee=2U

Units	MUx	MUx/Px	Situation
1	100U	5	MUx/Px >MUm therefore consumer surplus
2	80U	4	MUx/Px >MUm therefore consumer surplus
3	60U	3	MUx/Px >MUm therefore consumer surplus
4	40U	2	MUx/Px =MUm therefore consumer is in equilibrium
5	20U	1	MUx/Px <MUm therefore consumer will not consume 5th

Assumption of Cardinal approach:

1. Cardinal measurement of utility is possible.

2. Marginal Utility of money remains constant throughout different purchases

3. the total utility derived will be sum total of independent utilities.

Limitation of cardinal approach:-

1) Measurement of utility as cardinal number is difficult.

2) The same product can have different utility for different users.

ORDINAL APPROACH

Topic covered:-

1. Indifference curve, definition

2. Shape of indifference curve

3. Reasons for the shape of indifference curve

4. Marginal rate of substitution

5. Properties of indifference curve

6. Monotonic preference of consumer.

7. Budget set and budget line

8. Equilibrium using indifference curve

1) It is a curve

- Representing various combination of two goods
- Providing the same level of satisfaction.

2)

- It is downwards sloping-
- It is convex to the origin

3)

- It is downwards sloping because to gain one additional unit of a good the other has to be sacrificed so as to maintain the same level of satisfaction.(Monotonic preference of consumer)

- It is convex to the origin because of decreasing marginal rate of substitution.

4) MRS is the rate of sacrifice in the consumption of a good for gaining one additional unit of another good.

It decline because as we consume more unit of a good the marginal utility derived from it keep on declining while on the other hand the good that we are sacrificing its marginal utility is increasing hence, lesser has to be sacrificed every time for gaining one additional unit of another.

It is the slope of indifference curve.

5) Following are the properties:-

- Indifference curve is downwards sloping and convex to the origin.

- Higher IC indicates higher level of satisfaction:- Because in a higher IC a consumer will get either more of one good or more of another good or more of both the goods(MPC)

- Two IC's never intersects each other- An IC shows all the possible combination where the consumer gets same level of satisfaction. If two IC's interests each other they will show the same level of satisfaction at point of intersection, which is not possible.

6) A consumer prefers that bundle of good in which he gets either more of one good or more of another good or more of both the goods(MPC)

7) Budget set refers to the combination of all those goods that can be purchased using the given income(spending the whole income is not necessary).

Equation of Budget Set – Y(Income) >= Price of X * Units of X + Price of Y * Units of Y

Budget line represents various combination of those goods that can be purchased using whole of given income.
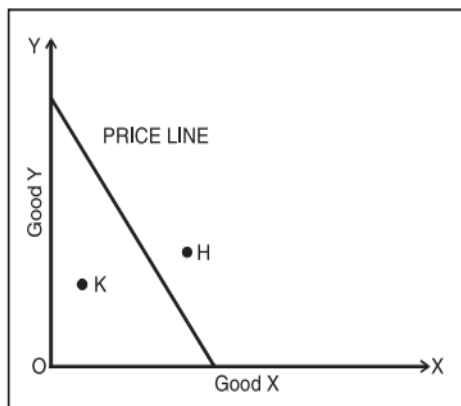
Equation of Budget Set – Y(Income) >= Price of X * Units of X + Price of Y * Units of Y

8) Following are the condition for consumer equilibrium under IC approach:-

- IC is tangent to the budget line at the point of equilibrium i.e.

  Marginal rate of substitution = Price ratio

  $\Delta Y/\Delta X = P_x/P_y$

- The consumer spends all his income on the given goods.
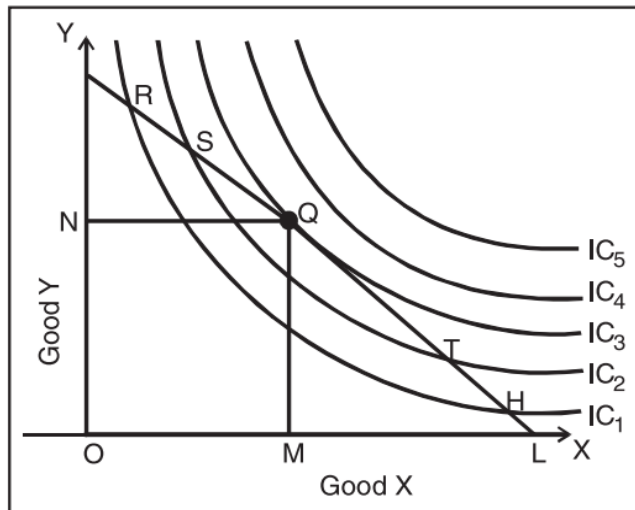
Explanation: As we can see in the above figure there are 5 IC's showing different levels of satisfaction. The consumer would like to prefer IC5 as it gives the highest level of satisfaction, but only IC1, IC2, IC3 are within the reach of budget line.

Hence the consumer would prefer the highest IC within the reach of budget line i.e. IC3.

So the consumer prefers the highest IC which is just in the reach of budget line i.e. tangent to Budget line.

Numericals:

1. Suppose a consumer consumes two goods X and Y and is in equilibrium. If the price of good X rises, what will be the reaction of consumer.

(Other numerical to be dictated in the class)

Test Yourself

1. A consumer consumes only two goods X and Y. marginal utilities of X and Y is 3 and 4 respectively. Prices of X and Y are Rs. 4 per unit each. Is consumer in equilibrium? What will be further reaction of the consumer? Give reason. 3

2. How does price line change when price of good-X changes? Show diagrammatically. 3

3. Give reason why higher indifference curve indicates higher level of satisfaction. 3

4. Define marginal rate of substitution and budget line equation. 4

5. What are the conditions of equilibrium using indifference curve approach? 4

6. What are the limitations of cardinal approach of measuring utility? 2

7. What is the relationship between total utility and marginal utility? 2

8. Satish has Rs. 88 with him. He intended to purchase goods X and Y with his money. The market price of X and Y per unit is Rs. 8. The marginal utility schedule of good X and Y is given below. Find out how many units of X and Y should Satish purchase so that he will get maximum satisfaction? 3

Units of Commodity	Mu of X	Mu of Y
1	80	40
2	72	36
3	64	24
4	56	20
5	48	16
6	40	12
7	32	8
8	24	4
9	16	0
10	8	0

9. Ice creams sells for Rs. 20. Mohini who likes ice creams has already consumes 4. Marginal utility of 1 Rupee is 4. Should she consume more ice cream or stop consumption.

THEORY OF DEMAND

Demand –

- it is a situation
- when a consumer is willing to purchase
- & able to purchase
- At the given prices.

Quantity demanded– It refers to demand at particular level of price , at a particular point of time.

Demand schedule – it is a tabular presentation of demand. It shows quantity demanded at various price level.

Price	Qty
25	5
30	4
35	3

Demand Curve: It shows us graphical presentation of demand i.e. the Quantity demanded at various price level.
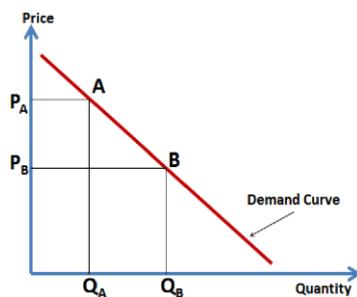
Demand function: It is a mathematical presentation of demand

Eg. Qx = 50–5p, the relative demand schedule will be:

P	Qx
5	25
6	20
10	0

Individual Demand Schedule: It refers to tabular presentation of demand showing quantity demanded at various price level for a individual buyer

Ex– Individual demand schedule of A and B

A		B	
Px	Qx	Px	Qx
10	5	10	7
15	3	15	5
20	0	20	1

Market demand schedule: it refers to tabular presentation of demand showing quantity demanded at various price levels for the market as whole.

Ex – Market demand schedule

Px	Qx
10	12
15	8
20	1

Imp. Note:

| |
|---|
| A demand function always carries a negative sign along with price indicating the inverse relationship between price and quantity demanded. |
| In case of a Giffen good, the sign along with Price would become positive, indicating demand would increase with increase in price. |
| There can be other factors as well, which may affect the demand function such as Income(Y) of consumer. In such a case demand function would be $Q(x) = a + bY - cP(x)$, indicating goods are Normal goods, for an inferior good the demand function would be $Q(x) = a - bY - cP(x)$ |

Individual demand curve: It refers to graphical presentation of demand showing quantity demanded at various price levels for a individual buyer

Market demand curve: It refers to graphical presentation of demand showing quantity demands at various prices level for the market as whole.

Market demand curve is a horizontal summation of individual demand curve.
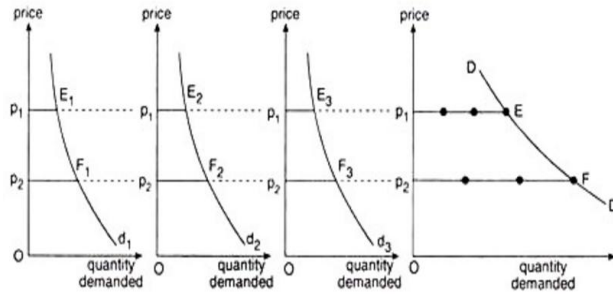
LAW OF DEMAND

It states that with increase in price, demand decreases and with decrease in price, demand increases, assuming all other factors remaining constant.

P ↑   D ↓

P ↓   D ↑

("With increase in Price Demand decreases", but "with Decrease in demand price will increase" may not always be true since there may be several factors affecting demand of a good, hence the vice versa may not always hold true for Law of Demand)

Other factors affecting Demand:

1. Price of related goods

    a. Complementary goods – Those good which are used together are called complementary goods. Ex- Marker & ink, Bike & Fuel.
        If price of complementary goods increases then demand of own goods decreases
        If price of complementary goods decreases then demand of own good increases.

        Pc ↑   Dx ↓

        Pc ↓   Dx ↑

    b. Substitute goods – The goods which can be used in place of each other are called as substitute goods. Ex – Maggie & Yippie.
        If price of substitutes goods increases then demand of own goods increases.
        If price of substitutes goods decreases then demand of own goods decreases.

        Ps ↑   Dx ↓

Ps ↓   Dx ↑

2. Income of consumer
    a. Normal goods – Those goods whose demand increases with increase in income and vice versa are called normal goods.

    Y ↑   D ↓

    Y ↓   D ↑

    b. Inferior goods– those goods whose demand increases with decrease in income and vice versa are called inferior goods.

3. Future expectations – if future price expected to rise then demand at present will increase. If future price expected to decrease then demand at present will decrease.

4. If there is a favorable change in taste & preference then demand increases. If there is an unfavorable change then demand decreases.

Some other factors affecting market demand.

5. Population Size – Population increases, demand increases; population decreases demand decreases

6. Govt. Policy – Favorable policy then demand increases, unfavorable policy then demand decreases.

Reasons for Operation Of Law Of Demand/ Demand Curve Downfall.

1. Law of diminishing marginal utility – According to it as we increase consumption of a good the satisfaction from every additional unit declines. Because of which the price of every additional unit must decline. So, we can say that demand increases or decreases only with increase or decrease on price.

2. Income of consumer – When the price of a good increases or decreases the real income purchasing power of consumer changes. The monetary income doesn't changes. So with increase in price real income decreases. Therefore demand decreases.

3. Substitution effect – When the price of a good increases it is substituted by other goods. Hence, demand decreases and when price decreases. It substitutes other goods. Hence, demand increases.

4. New users – Some new users may enter or existing users may exit the market because of increase or decrease in price respectively.

5. Alternative uses – Some alternative uses of a good may be develops with decrease in price leading to increase in demand
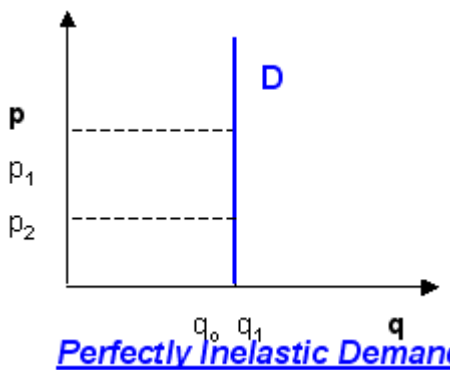
Exceptions to the Law of Demand

1. Giffen good – Those goods whose demand increases with increase in price and decreases with decrease in price are called as giffen goods.
2. Basic or necessary goods – An increase or decrease in the price of such a good does not affect its quantity demanded. These goods have a perfectly inelastic relationship, in that any change in price does not change the quantity demanded
3. Articles of Distinction – If a good is purchased merely because it is a status symbol (articles of distinction) then its demand may increase with increase in price.
4. Future exception – If future prices are expected to raise then demand may increase even with increase in price.
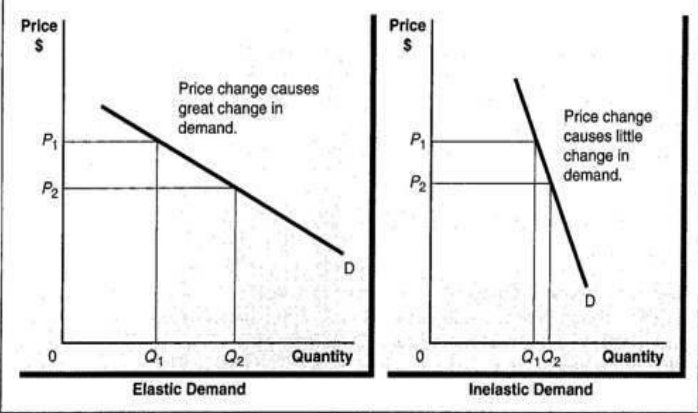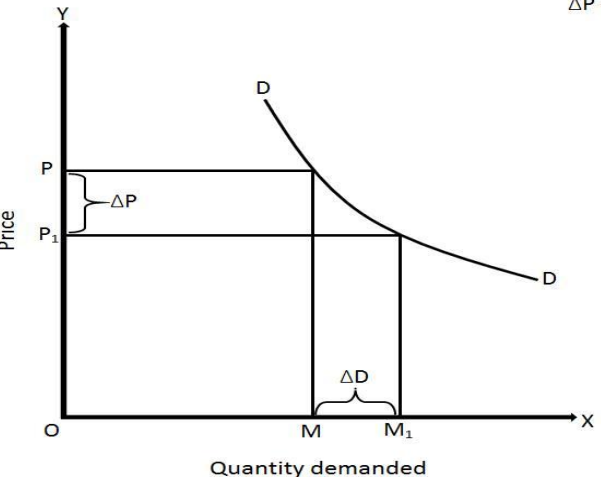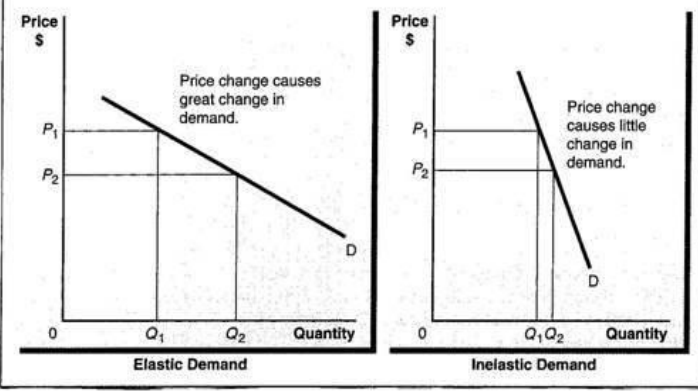
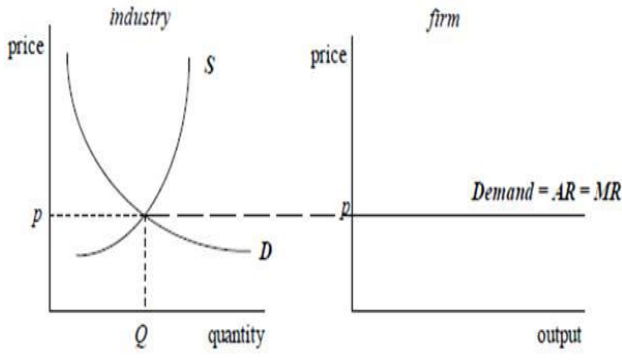Difference between Increase in demand & Extension in demand.

	Increase	Extension
1.	When demand increases at the same price.	When demand increases because of decrease in price.
2.	When there is a change in factor other than price.	When there is decrease in price.
3.	Ex-Favorable policy of govt. income increases (N.G.)	Price decreases
4.	Rightwards shift in demand curve	Rightwards movement along with demand curve.
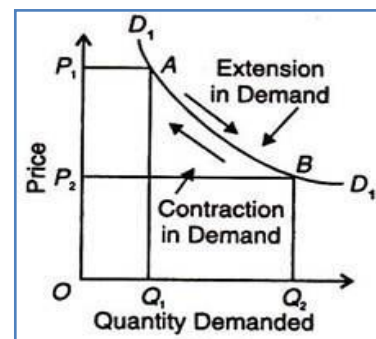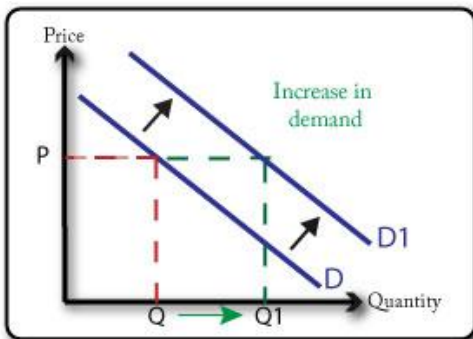
	Decrease	Contraction
i)	When demand decreases at the same price.	When demand decreases because of increase in price.
ii)	When there is a change in factor other than price.	When there is increase in price.
iii)	Ex–Decrease in income unfavorable govt. policy of govt. income increases (N.G.)	Price decreases
iv)	Rightwards shift in demand curve	Rightwards movement along with demand curves.

Demand curve under different situations of Elasticity of Demand				
Name	Diag.		Degree of Elasticity	Explanation
Perfectly Inelastic Demand	Perfectly Inelastic Demand		$E_d = 0$	In this situation there is no change in quantity demanded with change in price. Demand curve is vertical to X–axis. It is an imaginary situation and not seen in the real life.

Inelastic demand		Ed < 1	The % change in Demand < % change in Price. Demand curve is downward sloping line. It happens in case of Monopoly market as the number of sellers is very less.
Unitary elastic demand	$\Delta P = \Delta D$	Ed = 1	Percentage change in demand = percentage change in price Demand curve is a rectangular hyperbola
Elastic Demand		Ed < 1	The % change in Demand % change in Price. Demand curve is downward sloping line. Under Monopolistic competition firms have Elastic demand as the number of sellers is very high & close substitutes available.

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| Perfectly Elastic Demand | | Ed = infinity | There is change in Demand without any change in Price or if there is an increase in price the Qty. demanded falls to zero, and with decrease in price the Qty. demanded will increase by many times. Demand curve is a vertical straight line. In case of Perfect competition firms have perfectly elastic demad due to availability of large number of perfect substitutes . |

Questions:-

1. If the income of the consumer increases state what will be its impact on the demand curve assuming that-

    a. If it is a normal goods
    b. Inferior goods.

a. In case of normal goods demand increases with increase in income and decreases with decrease in income.

   Since there is a change in factor other than price. Hence, there will be increase in demand if income increases and decrease in demand (if income decreases). There will

be a rightward shift in demand curve if income increases and leftward shift if income decreases.

b.   In case of inferior goods demand increases with decrease in income and demand decreases with increase in income.

       Since there is a change in factor other than price. Hence there will be increase in demand (if income decreases) and decrease in demand (if income increases). There will be rightward shift in demand curve if income decreases and leftward shift in demand curve if income increases

2.   Identify the given situation

Px	Initial Demand	New–demand
10	100	120
15	80	90

Since at the same level of price, quantity demanded has increases. So we can say that there is increase in demand which could have occurred because of change in factor other than price.
       Due to increase in demand there will be rightward shift in demand curve.

3.   Due to increase in price of rubber the price of tyre tube has also increased. State what will be its impact on demand of cars.

Ans. Tyre tubes and cars are complementary goods because of increase in price of tyre tube the demand of cars will decrease.

Hence, there will be a leftwards shift in demand curve.

4.   Identify the type of good.

$Qx = 20 - 1/2P + Y$

Since there is a positive relationship with increase so, the given good is normal good.

$Qx = 20 - 1/2P - Y$

Since there is negative relationship with income so the given good is inferior good