

1. What do you mean by utility? What are the different types of utility?

Ans:- Utility refers to the wants satisfying power of a commodity. In other words utility refers to the psychological satisfaction that a person derives from the consumption of a particular commodity. Utility may be of two types: (i) Total utility.

(ii) Marginal utility.

2. What is total utility?

Ans:- Total utility is the sum total of the satisfaction that a consumer derives when a certain number of units of a particular commodity is consumed.

3. What is marginal utility?

Ans:- Marginal utility is the additional or extra utility derived from consumption of an additional unit of a commodity.

4. What do you mean by cardinal utility?

Ans:- Cardinal utility refers to the measurement of utility in terms of by hypothetical numerals like 1, 2, 3, etc which are called utils.

5. What is ordinal utility?

Ans! - Ordinal utility approach refers to the measurement of utility in terms of the psychological satisfaction on consuming one commodity as compared to another commodity.

6. What do you mean by budget line?

Ans! - The budget line can be defined as a set of combination of two commodities that can be purchased with given income and prices such that the cost of each of these combinations is equal to money income of the consumer. A budget line is called a price line or expenditure line.

7. Give the equation of the budget line.

Ans! - The equation of the budget line is as follows.

$$P_1 X_1 + P_2 X_2 = M$$

where,

P_1 = Price of first commodity.

P_2 = Price of second commodity.

X_1 = Units of first commodity.

X_2 = Units of second commodity.

M = Money income.

8. What do you mean by budget set of a consumer?

Ans! - A budget set is the collection of all bundles of goods that a consumer can buy with his given money income at the prevailing market price in such a way that his total expenditure is less than or equal to his money income.

9. Why is a budget line a straight line?

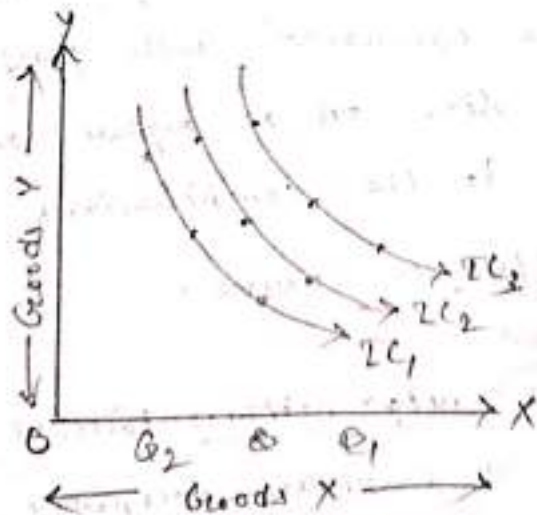
Ans:— A budget line is a straight line because it consists of only those combinations of two commodities which cost exactly equal to the income of the consumer.

10. What do you mean by an indifference curve?

Ans:— An indifference curve is the locus of various combinations of two commodities which yield the same level of satisfaction to the consumer. Alternatively, an indifference curve is a curve which shows all those combinations of two commodities that give equal satisfaction to the consumer.

11. What do you mean by an indifference map?

Ans:— An indifference map is a graphical representation used in economics to show a consumer's preferences for different combinations of goods and services. An indifference map is the set of indifference curves representing different levels of satisfaction. In an indifference map, bundles lying on the higher indifference curve represent higher levels of satisfaction and vice-versa.



In the above diagram, bundles of goods lying on higher indifference curves representing a higher level of satisfaction to the consumer and are more preferred and the bundles of goods lying on the lower indifference curve represents a lower level of satisfaction and are less preferred by the consumer. Lying on a particular level of indifference curve in an indifference map by a consumer depends on his ^{preference and budget constraint}.

Q 12. What are the properties of an indifference curve?

Ans:- Followings are the properties of an indifference curve:

(i) An indifference curve slopes downward from left to right: An indifference curve is downward sloping from left to right because when the amount of one commodity in the combination increases, the amount of other commodity reduces. Therefore, there is an inverse relationship between the commodity x and commodity y .

(ii) Higher indifference curve represents higher level of satisfaction: An indifference curve which lies above and right to another indifference curve represents a higher level of satisfaction. In other words, the consumer will prefer the combinations which lies on a higher indifference curve as compared to the combinations lying on a lower indifference curve.

(iii) Indifference curve never touches nor intersect each other: Another property of

an indifference curve is that it can neither touch nor intersect each other. If the two indifference curves intersect each other then at the point of intersection, the level of satisfaction will be equal which is not possible, as because higher indifference curve represents higher level of satisfaction.

(iv) Indifference curve will not touch either touch x-axis or y-axis: Indifference curve neither touches x-axis or y-axis as because if it touch any one of the axis, it means that the consumer is interested in one commodity only, which is against our assumptions.

(v) Indifference curves are convex to the origin:

Another important feature of an indifference curve is that it is usually convex to the origin. This is due to diminishing marginal rate of substitution. The convexity rule implies that as the consumer substitute commodity 'x' for commodity 'y', the marginal rate of substitution diminishes.

(vi) Indifference curves are not parallel to each other: This is due to the fact that indifference curves are not based on cardinal number system of measurability, and the rate of substitution between two commodities do not need not be the same in all indifference schedules.

(vi) 13. What do you mean by diminishing marginal rate of substitution?

Ans!— The principle of diminishing marginal rate of substitution implies that the marginal rate of substitution of commodity 'x' for commodity 'y' goes on diminishing as more and more units of commodity 'x' are substituted for commodity 'y'.

14. Distinguished between cardinal and ordinal concept of utility?

OR

Distinguished between cardinality and ordinality?

Ans!— Cardinal utility approach was advocated by Neo-classical economist Prof. Alfred Marshall whereas the ordinal utility approach, was advocated by the Modern economists like J.R Hicks and Richard Allen. Thus, the cardinal utility approach historically preceded the ordinal utility approach.

The term 'cardinal' and 'ordinal' have been borrowed from mathematics. The nos 1, 2, 3, 4, etc are cardinal numbers. The no, 2 for e.g. twice the size of the no. 1. In the contrast, the nos 1st, 2nd, 3rd, 4th, etc are ordinal nos. The ordinal nos. are ordered or are ranked. It is not possible to know from the ranking list, the actual size and relations of the nos. The 2nd no. may not be twice as big as the 1st no.

According to the concept of cardinal utility it is possible to measure and compare the utility

of two commodities, say, apples, oranges. For e.g., and apple may yield to the consumer a utility of 20 units, whereas an orange yields him a utility of 10 units. Thus, it is clear that the consumer derives twice as much utility from an apple than an orange.

On the other hand, according to the concept of ordinal utility, the utilities, derived from the consumption of commodities cannot be measured much less compared. The ordinal concept permits us to say only that the consumer prefers an apple to an orange but it does not indicate by how much. It does not let us compare the quantities of utilities obtain by the two commodities. The ordinalist maintain that the quantities of utilities are inherently non-measurable, theoretically, or conceptually as well as practically. They believe that the theory of consumer's behaviour can be explained without the idea of measurability of utility. The cardinalist on the contrary, explain the theory of consumer's behaviour on the assumption that utility is measurable and quantifiable.

15. Explain with the help of indifference curve how a consumer maximise satisfaction?

Or

Explain consumer's equilibrium with the help of indifference curve.

Or

Explain how does consumer distribute a given amount of money in purchasing two commodities, the price of which are given?

show how does an individual consumer reach the highest welfare level given his income and the prices of two purchasable commodities?

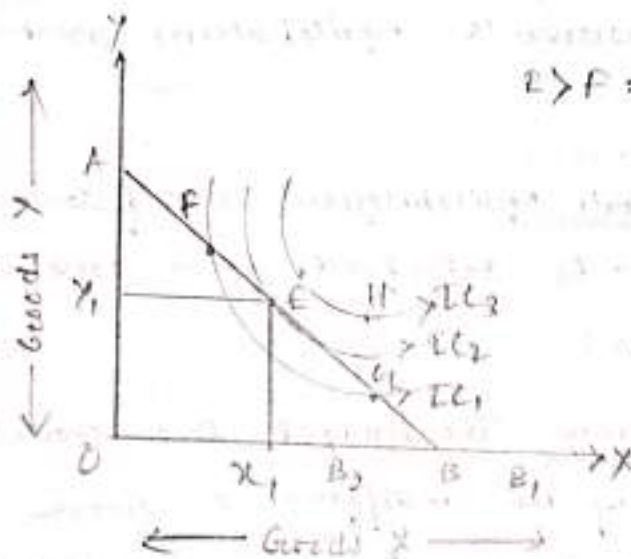
Ans:- The main purpose of studying indifference curve technique is to study consumer's equilibrium. A consumer is said to be in equilibrium when he is buying such a combination of goods and leaves him with no tendency to rearrange his purchase of goods. He is then in a position of balance in regard to the allocation of his money expenditure among various goods. In the indifference curve technique, the consumer's equilibrium is discussed in respect of the purchase of two goods by the consumer with his given income and with prices of the two commodities. The point of equilibrium is such that he does not want a change from it.

Assumption: Consumer's equilibrium through indifference curve technique is based on the following assumptions:

- (i) The consumer has an indifference map showing his scale of preferences for various combinations of two goods.
- (ii) The scale of preference imprinted in his mind remains unchanged throughout the analysis.
- (iii) He has limited money income which he wants to spend fully.
- (iv) He is one of the many buyers who know the prices of two goods which are given and constant.

- ⑤ All goods are homogeneous and divisible.
- ⑥ The consumer acts / behaves rationally who aims at maximizing satisfaction.
- ⑦ The conditions are consistency and transitivity are satisfied.

Diagrammatical illustration: The equilibrium of the consumer can be analysed by plotting the budget line and the indifference map in the following diagram.



Let AB represents the budget line of the consumer. Point H lies on the highest indifference curve IC_3 representing the highest level of satisfaction. But the consumer cannot purchase this bundle as it is out of his budget. Bundles E, F & G on the budget line AB are equally costly to the consumer. The consumer can purchase any one of them with his given income and given prices of these bundles. He will select that one where his utility is maximum. Now, a higher utility level is represented by a higher indifference curve. The consumer will try to achieve the highest possible indifference curve remaining on the budget line. This is possible when the budget line is tangent to one of the indifference curve. This is possible at point

'E' In the above diagram. Any other point on the budget line AB such as points F & G are lying on a lower indifference curve than that passing through E. This means that the utility level at any other points on the budget line are lower than at 'E'.

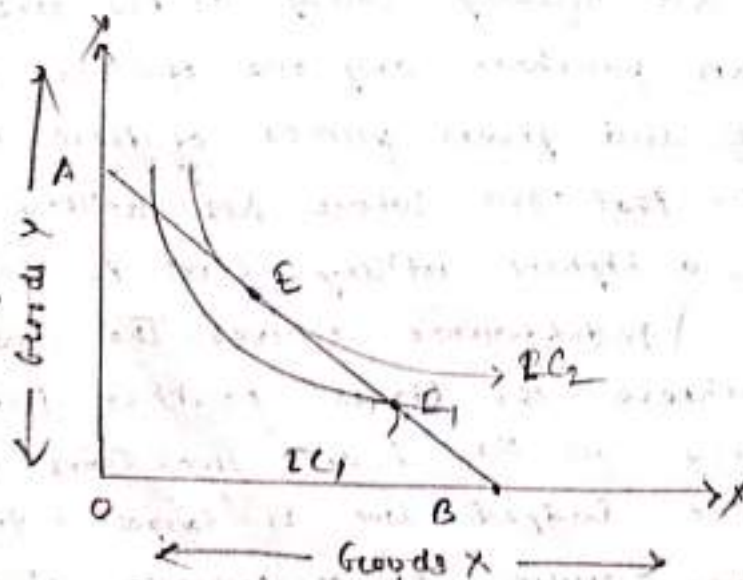
Point 'E' therefore, represents the highest possible utility. This is the equilibrium point of the consumer.

Conditions of consumer's equilibrium point of the consumer.

Conditions of consumer's equilibrium: The following two conditions must be satisfied for a consumer to be in equilibrium:

① Conditions of tangency: The budget line should be tangent to one of the indifference curve of the indifference map, i.e., the slope of indifference curve is equal to the slope of the budget line, i.e., $MRS_{xy} = -P_x/P_y$, i.e., the ratio of prices of the two goods.

The following figure illustrates the position of equilibrium:



In the above figure, at point 'E' the budget line is tangent to the highest attainable indifference curve IC_2 . Bundles on the indifference curve above this are not affordable and bundles below the indifference curve IC_2 are inferior bundles. Any point other than 'E' such as 'F' & 'G' on the budget line lie on the lower indifference curve IC_1 and hence inferior to bundle 'E' ($Ox_1 + Oy_1$). 'E' is the consumer's optimum bundle which maximises his satisfaction.

Thus, a consumer will be in equilibrium when the slope of the indifference curve, i.e., MRS and the slope of the budget line, i.e., $-P_x/P_y$, are same. This is the necessary condition of equilibrium.

(v) Condition of convexity: The indifference curve must be convex to the point of origin of axes at the point of tangency, i.e., MRS must be diminishing.

The following diagram explains the convexity of the indifference curve at the point of tangency to the budget line.

In the above figure, the slope of the indifference curve and the budget line are equal at the point E & F. But at point 'F', the indifference curve is concave. The consumer would be increasing his level of satisfaction if he were to move at any other point along the budget line AB, say at point 'E', and reach higher indifference curve IC_2 . At point 'E' the slope of the indifference curve is convex.

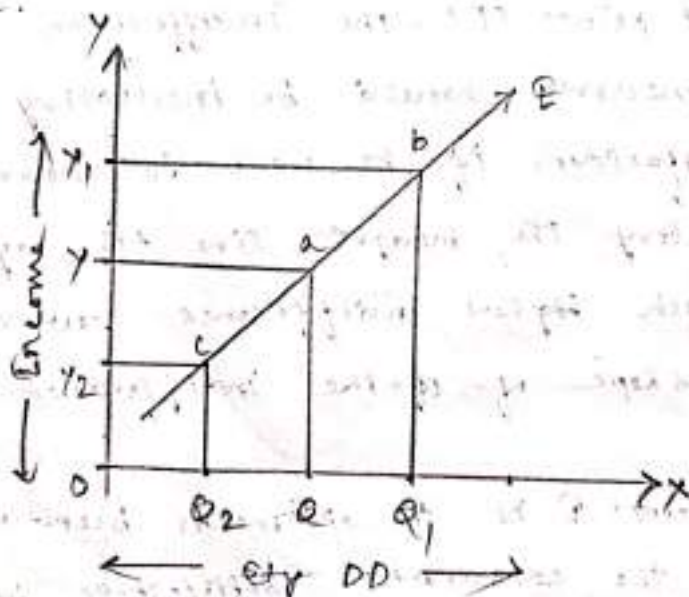
Thus, point E is the optimum bundle which will maximise the consumer's satisfaction because at

point E, the slope of indifference curve is convex. But point E cannot represent the stable equilibrium situation of the consumer because at this point the sufficient condition of equilibrium, i.e., the condition of convexity is not satisfied.

Q6. Explain the concept of Engel curve?

Ans: - During 1821-26, prof. Ernest Engel made an empirical study of family budget to draw conclusions about the pattern of consumption expenditure. This curve shows the relationship between the levels of income and quantity purchased of a particular goods. In other words, the demand curve shows the relationship between price of a quantity demanded when other factors are considered constant. Thus, the curve which is called the Engel curve, illustrates the relationship between income and quantity purchased, price and tastes are held constant.

Diagrammatically explanation: Engel curve can be explained with the help of the following figure:



In the above figure, quantity demanded is measured along the x-axis and income of the consumer is measured along the y-axis. OY is the initial income level of the consumer with which the initial income level of the consumer with which the initial quantity demanded is OB .

When the income of the consumer increases to OY_1 , quantity demanded to OB_1 and the consumer moves from equilibrium point a' to b' .

Again, when the income of the consumer decreases to OY_2 , quantity demanded also decreases to OB_2 and the consumer moves from equilibrium point a' to c' .

Now by joining the points a, b, c we get EC curve, which is known as engel curve.

17. Write a note on revealed preference analysis.

Ans:- Revealed preference analysis is an economic theory that aims to infer an individual's underlying preferences based on their idea that an individual's true preferences are reflected in their actual purchasing decisions and actions.

The theory assumes that individuals are rational decision makers who choose the best option available to them from a set of feasible options. By examining the choices made by individuals when faced with various price and income constraints, Economists can deduce preferences for different goods and services.

The foundation of revealed preference analysis proposed by economists.

panel estimation. By analysing multiple choices made by an individual, economists can construct an entire preference ordering for that person.

10. Explain the Marshallian utility approach.
Ans: The Marshallian utility approach is a fundamental concept in micro economics that aims to explain consumer behaviour and demand for goods and services. This approach revolves around the concept of utility, which represents the satisfaction or happiness and individual derives from consuming a particular commodity or service.

Following are the important points of the Marshallian utility approach.

(i) Utility function: In this approach consumers are assumed to have a utility function which is a fundamental concept in micro economics that mathematical representation of their preferences.

(ii) Diminishing marginal utility: One of the important assumptions of the Marshallian utility approach is the principle of diminishing marginal utility. This principle states that as a consumer consumes more units of a particular commodity while keeping other commodities constant, the additional satisfaction from each additional unit diminishes.

(iii) Budget constraint: Consumers face a budget constraint as their purchasing power is limited by their income. The utility maximizing consumer aims to allocate their income in such a way that they achieve the highest possible level of satisfaction, subject to their budget limitations.

(iv) Consumer equilibrium: Consumer equilibrium occurs when a consumer maximizes their total utility given their budget restriction. This is achieved when the consumer allocates their income in such a way that the marginal utility per rupee spent on each commodity is equal across all commodities.

(v) Conclusion: The Marshallian utility provides valuable insights into consumer's preferential behaviour and market demand. It serves as a foundational concept in micro economic theory and forms the basis for further developments in the field of consumer choice and welfare analysis.

19. What do you mean by monotonic preferences?

Ans:- Monotonic preferences mean the greater consumption by the consumer gives him higher level of satisfaction as compared to commodity that he consumed less units.

20. What do you mean by marginal rate of substitution?

Ans:- Marginal rate of substitution is the rate at

which the consumer is willing to sacrifice one commodity to obtain one more unit of the other commodity.

21. Explain consumer equilibrium with the help of indifference curve approach.

Ans:- A consumer is said to be in equilibrium when he is buying such a combination of goods which leaves him no tendency to rearrange his purchases of ^{his} goods. He is then in a position of balance in regard to the allocation of his money expenditure among various goods.

For a consumer to be in equilibrium, the following two conditions are required to be satisfied:

(i) The budget line must be tangent to an indifference curve and the slope of the indifference curve must be equal to the slope of the budget line.

(ii) Indifference curve must be convex to the origin at the point of tangency.

Assumptions:

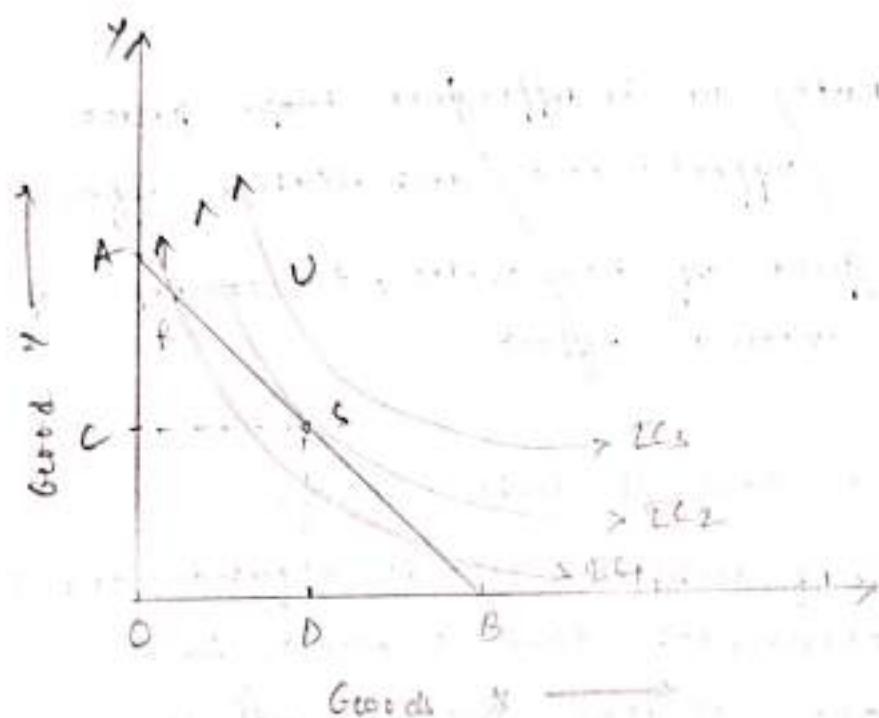
(1) The consumer has a given indifference map exhibiting his scale of preferences for various combinations of two commodities.

(2) Money income and prices of goods are

given,

(ii) Goods are homogeneous and divisible.

Explanation of the law:



In the above diagram, budget line AB is tangent to indifference curve IC_2 at point S since the indifference curves are convex to the origin, all other points on the budget line would lie on lower indifference curves.

In the above diagram it is seen that the point T and R lie on lower indifference curve IC_1 . And the point U lie on indifference curve IC_3 . The consumer is in a position to afford to buy the combinations R and T but it gives a lower level of satisfaction. The point U which is lying on higher indifference curve IC_3 will give greater satisfaction to the consumer than S but the consumer will not be able to buy

the combination U because it is beyond his budget line. Therefore, the consumer will choose optimum point E which is the equilibrium point.

20. Write a note on indifference map. price effect, income effects and substitution effect.

Ans:- In the field of economics, the concepts of price effect, income effect

22. Explain the law of substitution.

Ans:- The law of substitution is a fundamental principle in economics that explains how consumers make choices among different goods and services based on their relative prices and preferences. This law plays a crucial role in understanding consumer behaviour and demand patterns.

The law of substitution states that as the price of a good decreases, consumers tend to substitute that good for more expensive alternatives, thereby increasing the consumption of the cheaper good.

Following are the key points of the law of substitution:

(i) Substitution principle: Consumers are rational and strive to maximise their utility from the limited income.

⑧ When the price of a particular commodity decreases, consumers see it as a more attractive option compared to other goods that have relatively higher prices.

⑨ Optimum consumption: Consumers aim to allocate their income in such a way that maximises their satisfaction. This involves choosing a combination of goods that provides the highest level of utility given their preferences and budget constraints.

⑩ Movement along the demand curve: The law of substitution explains the downward slope of the demand curve. As the price of a commodity falls, consumers are willing to buy more of it because they consider it to be a better value compared to other goods.

In summary, the law of substitution explains how consumers react to changes in price by shifting their consumption choices towards goods that offer better value for their money.

23. What is the difference between slope of the budget line and slope of indifference curve?

Ans:- Slope of indifference curve shows the rate at which the consumer is willing to substitute one good for the other, whereas

The slope of the budget line shows the ratio of the prices of two goods.

24. ~~What is consumer's equilibrium?~~

24. ~~What do you Pdf - 7, 11~~

24. Can two indifference curves intersect each other?

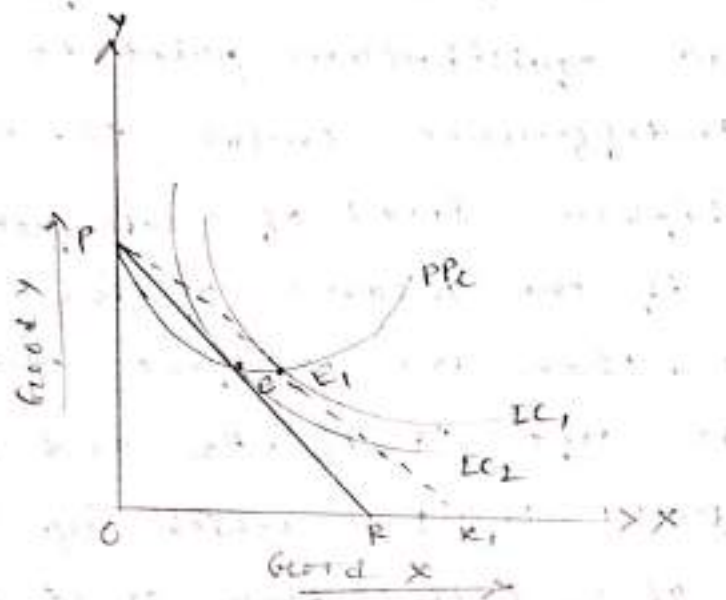
Ans:- No, Two indifference curves will not intersect each other as because if two Indifference curve intersect each other, in that case at the point of intersection, the level of satisfaction will be same which is not possible as because higher indifference curve represents higher level of satisfaction.

25. Explain the concept of price effect, income effect and substitution effect.

Ans:- Price effect

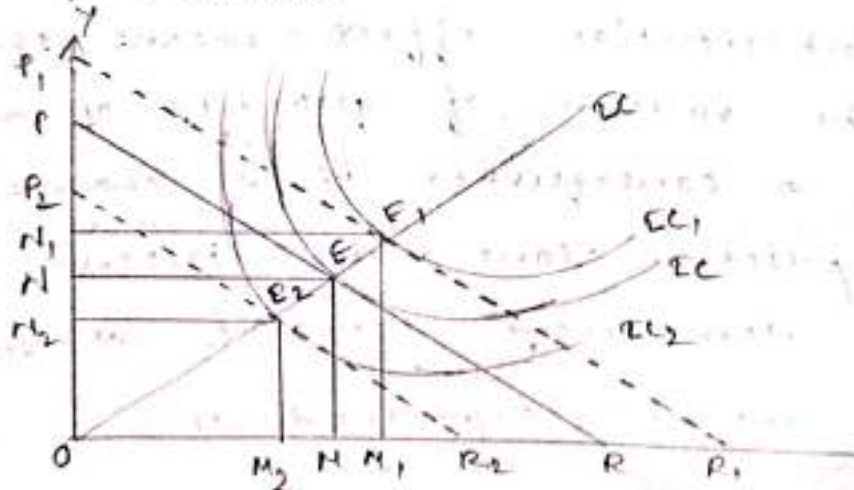
Price effect means the effect of change in the price of a commodity on a consumer's equilibrium position given income, taste, preference, habits, etc of the consumer remains unchanged. A fall in price of a commodity increases the purchasing power of the consumer and the consumer now can purchase more of the cheaper commodity and hence he reaches a higher level of indifference curve which represents

higher level of satisfaction. A rise in the price of a commodity decreases the purchasing power of the consumer and the consumer now can purchase less of the expensive commodity and hence he reaches a lower level of indifference curve representing lower level of satisfaction.



Income Effect

Income effect is the effect on the quantity demanded of a commodity due to change in the income of the consumer while the price of the other commodity remains constant. Thus, the income effect reflects the effect on the consumer's equilibrium due to the change in money income.



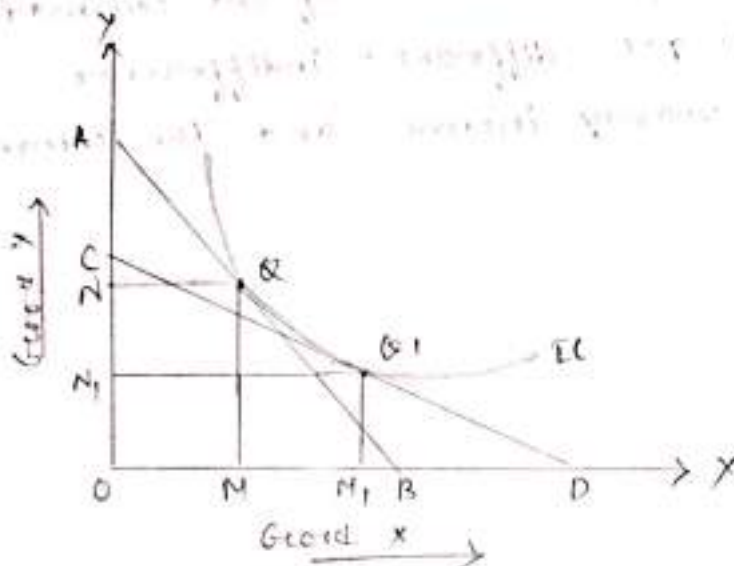
In the above diagram, initially with the price line, 'PP', the consumer is in equilibrium at point 'E' and he buys one unit of good 'x' and one unit of good 'y'. Now if the income of the consumer increases as a result the price line shifts to P_1, R_1 and the new equilibrium point is E_1 on higher indifference curve IC_1 , which represents higher level of satisfaction. On the other hand if the income of the consumer decreases, then the original budget line shift towards left to P_2, R_2 and the new equilibrium point is E_2 which represents lower level of satisfaction as it is on the lower indifference curve IC_2 .

Substitution Effect

~~Price~~ Substitution effect refers to the change in the amount of quantity demanded of a commodity resulting from a change in the relative price alone while real income of the consumer remain constant. In other words the substitution effect means the change in the volume of quantity of a commodity as a consequence of a change in its relative price alone, real income of the consumer remaining constant. The substitution effect can be explained as:

① Relative prices of two commodities changes in such a way that one commodity becomes cheaper.

② Monetary income of the consumer changes in such a way that he gets equal satisfaction in new stage also.



From the above explanation, it can be clearly said that price effect = income effect + substitution effect.

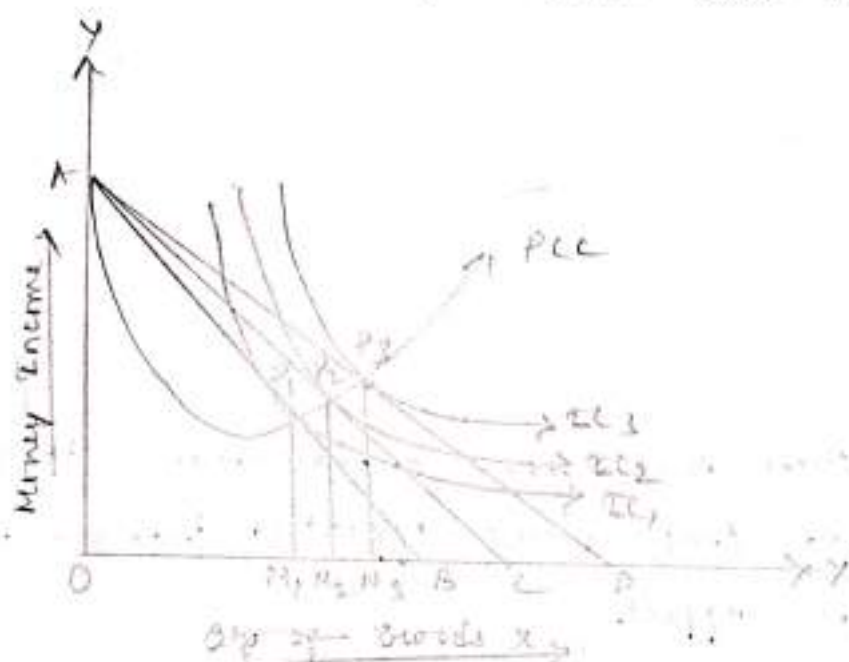
26. How would you derive an individual demand curve with the help of indifference curve?

OR

Derive the law of demand from indifference curve.

Ans:- The basic purpose of the entire exercise of indifference curve technique is to construct the individual demand curve for a commodity. An indifference curve shows the relationship between the quantity demanded of a commodity and its price under ceteris paribus assumption. The demand curve represents the successive points of tangency

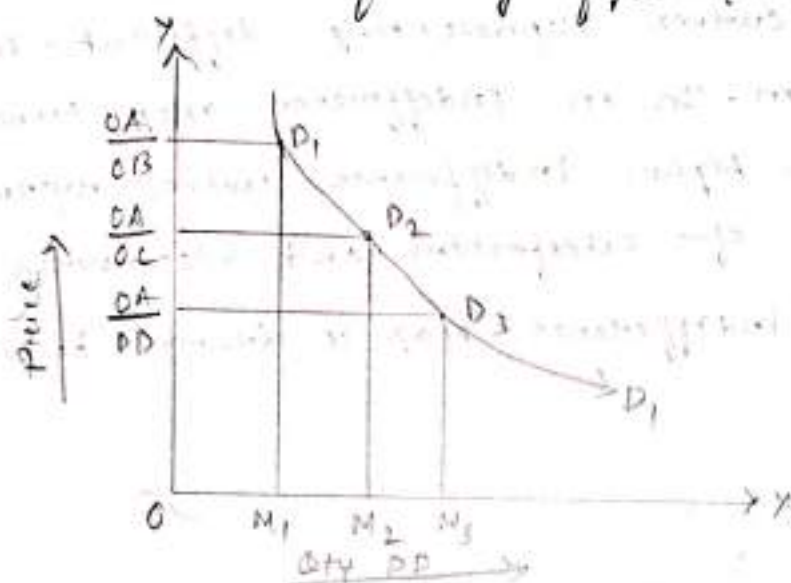
between the budget line and indifference curve. For the sake of simplicity, let us assume that the consumer is purchasing only one commodity with his given income. On the vertical axis of the diagram we plot money income and on the horizontal axis we plot units of the commodity demanded. We can get different indifference curve between money income and the commodity.



In the above diagram, the consumer has OA units of money and he will spend this amount of money purchasing the commodity X . When the budget line AB , the consumer is in equilibrium at point P_1 , where he is purchasing ON_1 units of X . Now, suppose that the price of X decreases and the budget line becomes AC and P_2 becomes the new point of tangency of the budget line AC and the indifference curve IC_2 , where the consumer purchases ON_2 units of X . In this way, we can get other points of tangency also. The locus of all such points of tangency of budget lines and indifference curves

is the price consumption curve.

When the budget line is AB , the price per unit of $X = \frac{OA}{OB}$, we can therefore, say that when price is $\frac{OA}{OB}$ per unit purchase OM_1 units of X . Similarly, when the price is $\frac{OA}{OC}$ per unit, the consumer will purchase OM_2 units of X . If we plot these price quantity combinations in a diagram we shall get the demand curve for goods X . This is shown in the following figure:



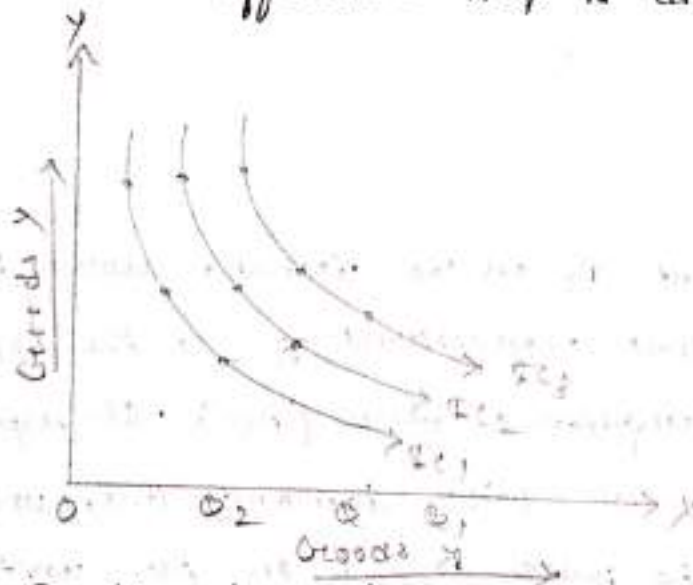
The point D_1 on the demand curve DD , corresponds to the point corresponding to the point P_1 on the price consumption curve (PCC). It represents that the consumer will demand OM_1 units of output when the price is OA/OB per unit. Similarly D_2 on the demand curve DD , represents to the point P_2 on the price consumption curve PCC. Each point on the PCC represents a price and a quantity. By plotting these price - quantity combinations we get the corresponding points on the demand curve DD . In this way, the demand curve can be obtained from the price consumption curve (PCC). We have, thus, derived demand curve from

the price consumption curve (PCC). This demand curve is derived from the price effect and is known as Marshallian demand curve or ordinary demand curve.

27. What is indifference map explain?

Ans:- A complete description of consumer preference for the commodities is proved by the indifference map. An indifference map is the set of indifference curves representing different levels of satisfaction. In an indifference map, bundles lying on the higher indifference curve represent higher levels of satisfaction and vice-versa.

An indifference map is drawn below:



In the above diagram, bundles of goods lying on higher indifference curves representing a higher level of satisfaction to the consumer and are more preferred and the bundles of goods lying on the lower indifference curve represents a lower level of satisfaction and are less preferred by the consumer. Lying on a particular level of indifference curve in an indifference

map by a consumer depends on his preference and budget constraint.