

CHAPTER 2

Theroy of Consumer Equilibrium

EXERCISE QUESTIONS

Question 1. What do you mean by the budget set of a consumer?

Or

Define Budget Set.

Answer: Budget set is the collection of all bundles of goods that a consumer can buy with his income at the prevailing market prices.

Question 2. What is Budget Line?

Answer: Budget line is a graphical representation which shows all the possible combinations of the two goods that a consumer can buy with the given income and prices of commodities. It is also called consumption possibility line.

Question 3. Explain why budget line is downward sloping?

Or

Why is budget line negatively sloped?

Answer: 'Budget line is downward sloping because if a consumer wants to buy more of one commodity, he has to buy less of other goods, given money income.

Question 4. A consumer wants to consume two goods. The prices of the two goods are Rs 4 and Rs 5 respectively. The consumer's income is Rs 20.

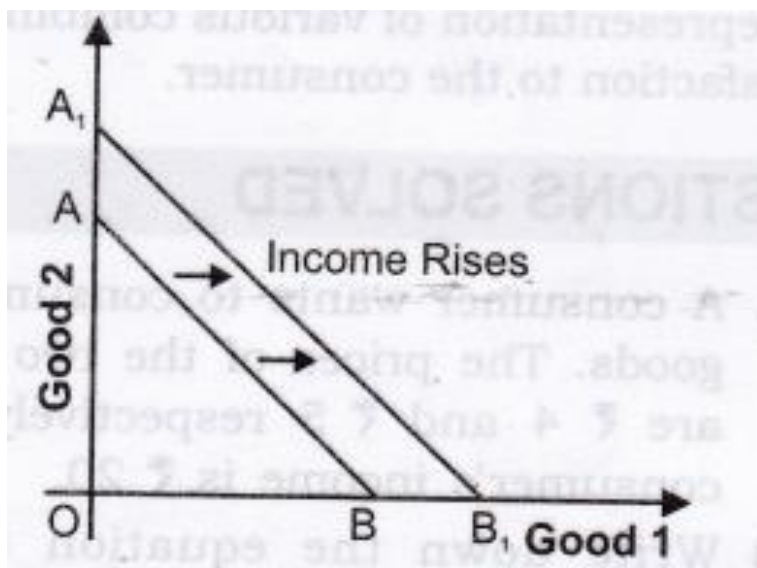
1. Write down the equation of the budget line.
2. How much quantify of good 1 can the consumer consume if she spends her entire income on that good?
3. How much of good 2 can she consume if she spends her entire income on that good?
4. What is the slope of the budget line?

Answer:

1. Let the two quantities of goods be X and Y. We are given $P_x = \text{Rs } 4$, $P_y = \text{Rs } 5$, Consumer's income (M) = Rs 20. Budget line equation is,
 $P_x \cdot X + P_y \cdot Y = M$ or $4X + 5Y = 20$
2. If quantity consumed of good Y = 0, Budget equation becomes,
 $P_x \cdot X + \text{zero} = M = 4 \cdot X = 20 = X = 20/4 = 5$ units
3. If quantity consumed of good X = 0, Budget equation becomes,
 $\text{Zero} + P_y \cdot Y = M$
or $5Y = 20 = Y = 20/5 = 4$ units.
4. Slope of budget line = $P_x/P_y = 4/5 = 0.8$

Question 5. How does the budget line change if the consumer's income increases to ?40 but the prices remain unchanged?

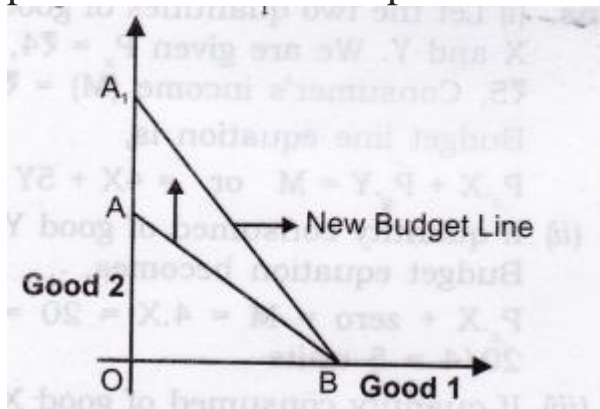
Answer: If consumer's income increases to Rs 40, the consumer can buy more pieces/quantities of both the goods X and Y. There will be parallel rightward shift in the budget line AB to A_1B_1 .



Question 6. How does the budget line change if the price of good 2 decreases by a rupee but the price of good 1 and the consumer's income remain unchanged?

Answer: If price of good 2 (shown on y-axis) decreases, consumer can buy more pieces /quantity of good 2. The budget line AB will

pivot at B and rotate upwards to A₁ B.



Question 7. What happens to the budget set if both the prices as well as the income double?

Answer: There will be no change in the budget line. Let us understand this with the help of an example: Suppose, the price of goods 1 rises from Rs 4 to Rs 8 and that of goods 2 rises from Rs 5 to Rs 10. Income also rises from Rs 20 to Rs 40. With double increase in prices and income, intercepts on both X-axis and Y-axis will remain unchanged at 5 units (goods 1) and 4 units (goods 2) respectively. Slope of budget line will also remain the same. Therefore, there will be no change in the budget set and the budget line.

Question 8. Suppose a consumer can afford to buy 6 units of good 1 and 8 units of good 2 if she spends her entire income. The prices of the two goods are Rs 6 and Rs 8 respectively. How much is the consumer's income?

Answer: Budget equation is given as: $P_x \cdot X + P_y \cdot Y = M$
 Let good 1 be X and good 2 be Y Putting the values, we get,
 $(6) \cdot (6) + (8) \cdot (8) = 36 + 64 = \text{Rs } 100$

Question 9. Suppose a consumer wants to consume two goods which are available only in integer units. The two goods are equally priced at Rs 10 and the consumer's income is Rs 40.

1. Write down all the bundles that are available to the consumer.

2. Among the bundles that are available to the consumer's. Identify those which cost her exactly 40.

Answer: Let $P_x = P_y = \text{Rs } 10$
Money Income = 40

1. Bundles available to consumer are: (0,0), (0,1), (0,2), (0,3), (0,4), (1,0), (1,1), (1,2), (1,3), (2,0), (2,1), (2,2), (3,0), (3,1) and (4, 0).
2. (0,4), (1,3), (2,2), (3,1) and (4,0) cost exactly Rs 40. All the other bundles cost less than Rs 40.

Question 10. What are monotonic preferences?

Answer: Consumer's preferences are assumed to be such that between any two bundles (x_1, x_2) and (y_1, y_2) , if (x_1, x_2) has more of at least one of the good and no less of the other good as compared to (y_1, y_2) , the consumer prefers (x_1, x_2) to (y_1, y_2) . Preferences of this kind are called monotonic preferences.

Question 11. If a consumer has monotonic preferences, can she be indifferent between the bundles (10, 8) and (8, 6)? [1 Mark]

Answer: No, if a consumer has monotonic preferences, bundle (10, 8) is preferred to bundle (8, 6) as bundle (10, 8) has more units of both the goods.

Question 12. Suppose a consumer's preferences are monotonic. What can you say about her preference ranking over the bundles (10, 10), (10, 9), (9, 9).

Answer: If a consumer has monotonic preferences then,

1. Bundle (10, 10) is monotonically preferred to bundle (10, 9) and bundle (9, 9).
2. Bundle (10, 9) is monotonically preferred to bundle (9, 9).

Question 13. Suppose your friend is indifferent to the bundles (5, 6) and (6, 6). Are the preferences of your friend monotonic?

Answer: No, the preferences of my friend are not monotonic since bundle (6, 6) should be monotonically preferred to bundle (5, 6).

2MARKS

Question 1. Define utility.

Answer: Utility is the power or capacity of a commodity to satisfy human wants.

Question 2. Define total utility.

Answer: Total utility is the sum of all the utilities derived from consumption of all the units of a particular commodity.

Question 3. How much is total utility at zero level of consumption?

Answer: Zero.

Question 4. How is total utility derived from marginal utility?

Answer: $TU = MU_1 + MU_2 + MU_3 + \dots + MU_n$
 $TU = \sum MU$

Question 5. Define marginal utility.

Answer: Marginal utility is the additional utility derived from consumption of an additional unit of a commodity.

Question 6. What is consumer's equilibrium?

Answer: Consumer's equilibrium refers to a situation where a consumer gets the maximum satisfaction out of his given money income and given market price.

Question 7. What is meant by MU of one rupee?

Answer: MU of one rupee refers to the utility obtained from purchase of commodities with one rupee.

Question 8. Define indifference curve.

Answer: Indifference curve refers to the graphical representation of various combinations of the two goods that provide the same level of satisfaction to a consumer.

Question 9. Define indifference map?

Answer: A set of indifference curves is called indifference map.

Question 10. Define marginal rate of substitution.

Answer: MRS is the rate at which a consumer is willing to give up one commodity for an extra unit of other commodity without affecting his total satisfaction.

Question 11. Why are indifference curves always convex to the origin?

Answer: Indifference curves are always convex to the origin because of the diminishing marginal rate of substitution.

Question 12. Why does an indifference curve slope downwards?

Answer: An Indifference curve slopes downwards because increase in units of one good requires decrease in the number of units of the other good to maintain the same level of satisfaction.

Question 13. Give equation of Budget Line.

Answer: $P_1X_1 + P_2X_2 = M$.

Question 14. Give equation of Budget Set.

Answer: $P_1X_1 + P_2X_2 < M$.

Question 15. Define Budget Set.

Answer: It is the collection of all bundles of pieces of goods that a consumer can buy with his income at the prevailing market prices.

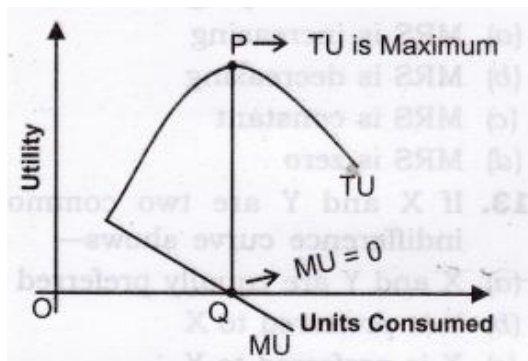
Question 16. Define Budget Line.

Answer: Budget line is a graphical representation which shows all the possible combinations of the two goods that a consumer can buy with the given income and prices of commodities.

5MARKS

Question 1. Explain with diagram, the relationship between TU and MU.

Answer:



1. When MU decreases, TU increases at a diminishing rate. (As shown in figure till consumption level OQ).
2. When MU is zero, TU is constant and maximum at P.
3. When MU is negative, TU starts diminishing.

Question 2. How many chocolates will a consumer have, if they are available free of cost?

Answer: In case of free chocolates, consumer will carry on the consumption till his total utility is maximum. It means, till the additional chocolates gives positive satisfaction, consumer will keep on having chocolates. Let us understand this with the help of the figure shown in Question 1. Consumer will stop the consumption at the point of satiety (Point 'Q'), i.e., where marginal utility is equal to zero.

Question 3. “Total Utility remains the same, whether Marginal Utility is positive or negative”. Defend or refute.

Answer: The given statement is refuted. When Marginal Utility is positive till point Q as shown in figure of Question 1, then total Utility increases at a diminishing rate and when Marginal Utility is negative after point Q, total Utility decreases.

Question 4. State with reasons if the following statements are true or false:

1. **At a grand family get-together party you go on eating and eating since you have not to pay.**
2. **As we consume more units of a commodity, our total utility from its consumption keeps falling.**

Answer:

1. **False:** For free goods, a consumer will limit his consumption of a commodity to a point where the point of full satisfaction is reached. Consumption beyond this point will only generate disutility.
2. **False:** As we consume more units of a commodity, its marginal utility keeps on diminishing. Total utility keeps on rising, but at a diminishing rate till marginal utility becomes zero.

Question 5. Explain the law of diminishing marginal utility with the help of a total utility schedule.

Answer: The law states that marginal utility derived from the consumption of a commodity declines as more units of that commodity are consumed.

Quantity of X	Total Utility	Marginal Utility
1	50	50
2	90	40
3	120	30
4	140	20
5	150	10

It can be seen from the above schedule that total utility increases at a diminishing rate, which leads to fall in marginal utility.

Question 6. Derive MU Schedule from TU Schedule.

Units of X	TU
1	11
2	21
3	30
4	38
5	45
6	51
7	56
8	60

Answer:

Units of X	TU (Given)	$MU = \frac{\Delta TU}{\Delta Q}$
1	11	11
2	21	10
3	30	9
4	38	8
5	45	7
6	51	6
7	56	5
8	60	4

Question 7. A person's marginal utility schedule is given below. Derive their total utility schedule.

Amount Consumed	Marginal Utility
0	-
1	10

2	25
3	38
4	48
5	55

Answer:

Amount Consumed	Marginal Utility (Given)	Total Utility = ΣMU
0	—	0
1	10	10
2	25	35
3	38	73
4	48	121
5	55	176

As we know total utility is the sum total of marginal utilities as shown below.

Question 8. Calculate:

Units of X	TU	MU
1	50	50
2	90	—
3	—	30
4	140	—
5	155	—

Answer:

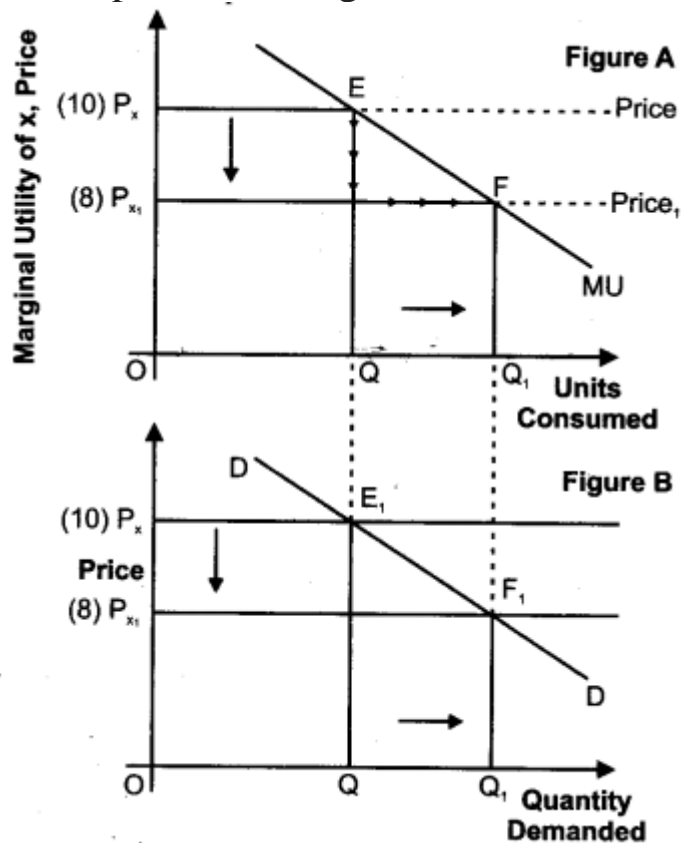
Units of X	TU	MU
1	50	50
2	90	$40 = (90 - 50)$
3	$120 = (50 + 40 + 30)$	30
4	140	$20 = (140 - 120)$
5	155	$15 = (155 - 140)$

Question 9. Derive the inverse relation between price of the good and its demand from single commodity equilibrium condition “marginal utility = price”.

Answer: As we know a consumer purchases a good up to the point where marginal utility of the good becomes equal to the price of that good.

$MU = \text{Price}$

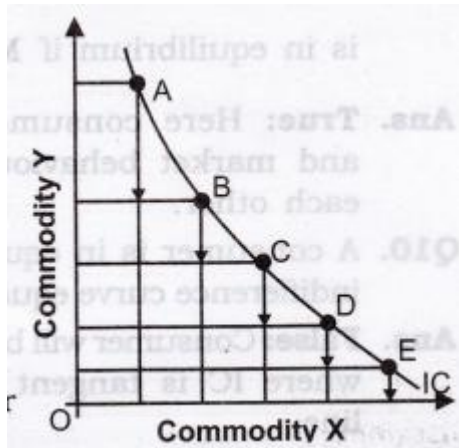
1. Figure B is derived from Figure A.
2. In figure A, initially, consumer equilibrium is attained at point E, where let $MU(10) = \text{Price}(10)$. Corresponding to point E, we derive point E1 in figure B.



3. Due to fall in price (suppose from 10 to 8), $MU > \text{Price}$ at the given quantity. So, we can say that benefit is greater than cost and the consumer increases the quantity till $MU = \text{Price}$ condition is attained at F. Corresponding to point F, we derive the point F1; in figure B. So, by joining point E1 and F1 together, we derive the demand curve.

Question 10. Explain why an Indifference curve has a negative slope (i.e. IC slope down-wards to the right).

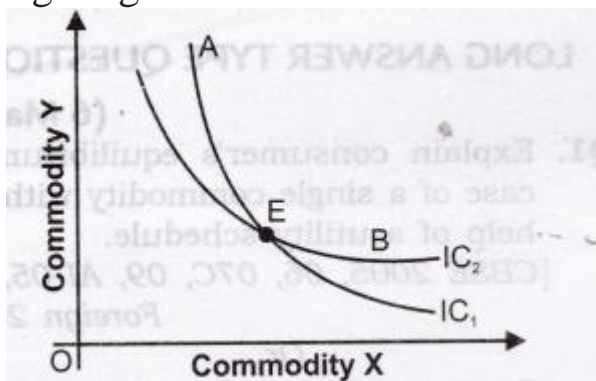
Answer: Every IC is based on the assumption that various combinations of two commodities gives equal satisfaction to a consumer. In order to remain at the same level of satisfaction, the consumer will have to reduce the consumption of one commodity if he wants to increase the consumption of another commodity.



Question 11. Why do Indifference curves not intersect each other?

Answer:

1. Two IC's cannot intersect each other. This property is proved by Contradict Method. First we assume that they intersect each other and then show that this assumption leads to an absurd conclusion. Let us assume that IC_1 intersects IC_2 at point E shown in the figure given here.



2. Let point A be a point on IC_1 , and point B on IC_2 . Since A and E lie on IC_1 , the consumer will be indifferent between points E and A.

A ($A = E$). Similarly, B and E lie on IC2, the consumer will be indifferent between points E and B ($B = E$).

3. Based on the assumption of transitivity as $A = E$ and $B = E$, then the consumer must be indifferent between A and B ($A = B$) but this is not possible as A and B lie on two different ICs and represent different levels of satisfaction. Therefore, IC cannot intersect each other.

7MARKS

Question 1. Explain consumer's equilibrium in case of a single commodity with the help of a utility schedule. Or

State condition of consumer equilibrium in case of a single commodity. Or

There is given the market price of a piece of goods, how does a consumer decides as to how many units of that piece of goods to buy. Or

How many units of a commodity should a consumer buy to get its maximum utility? Explain with the help of a numerical example.

Or

There is given the price of a good, how does a consumer decide as to how much quantity of that goods to buy?

Answer:

1. When purchasing a unit of a commodity a consumer compares its price with the expected utility from it. Utility obtained is the benefit, and the price payable is the cost. The consumer compares benefit and the cost. He will buy the unit of a commodity only if the benefit is greater than or at least equal to the cost.
2. Equilibrium Conditions for Single Commodity Consumer Equilibrium.

(a) **Necessary Condition**

Marginal Utility of Money = Price
.....(1)

Or $\frac{\text{Marginal Utility of a Product in Util } [MU_x]}{\text{Marginal Utility of One Rupee } [MU_R]} = \text{Price of X}$
.....(2)

In particular, the condition (1) says that the marginal utility of a Product in terms of Money should be equal to its price.

Sometimes, this is loosely stated as Marginal utility is equal to price, i.e., $MU = \text{Price}$.

● If $MU > \text{Price}$

- > As a rational consumer he will continue to purchase an additional unit of a commodity as long as $MU = \text{Price}$.
- > $MU > \text{Price}$ implies benefit is greater than cost and whenever benefit is greater than cost, the consumer keeps on consuming additional unit of a commodity till $MU = \text{Price}$.
- > It is so because according to the law of diminishing marginal utility MU falls as more is purchased. As MU falls it is bound to become equal to the price at some point of purchase.

● If $MU < \text{Price}$

- > As a rational consumer he will have to reduce the consumption of a commodity as long as $MU = \text{Price}$.
- > $MU < \text{Price}$ implies when benefit is less than cost, and whenever benefit is less than cost the consumer keeps on decreasing the additional unit of a commodity till $MU = \text{Price}$.
- > It is so because according to the law of diminishing marginal utility, MU rises as less units are consumed. As MU rises, it is bound to become equal to the price at some point of purchase.

(b) **Sufficient Condition:** Total gain falls as more is purchased after equilibrium. It means that consumer continues to purchase so long as total gain is increasing or at least constant.

3. It can be explained with the help of the following schedule:

Consumption (Units)	Total Utility (T.U.) (Utils)	Marginal Utility (M.U.) (Utils)	M.U.(₹) $\left[\frac{MU_x}{MU_y} \right]$ Assuming (MUR = 1) benefit	Market Price (₹)	Marginal Gain (MU – Price) (₹)	Total Gain (₹)
0	0	—	—	—	—	—
1	5	5	5	3	2	2
2	9	4	4	3	1	3
3	12	3	3	3	0	3
4	14	2	2	3	-1	2

(a) Suppose, the price of commodity X in the market is Rs3 per unit. It means he has to pay? 3 per unit for all the units he buys. Suppose, the utility obtained from the first unit is 5 units (= Rs5). The consumer will buy this unit because the utility of this unit is greater than the price and this process continues till Marginal utility = Price as shown in the above schedule at quantity 3.

(b) Consumer will not buy the fourth unit because utility of this unit is 2 units (= Rs2) which is less than the price. It is not worth buying the fourth unit. The consumer will restrict his purchase to only 3 units.

Question 2. A consumer consumes only two goods. Explain the conditions of the consumer's equilibrium with the help of Utility Analysis. Or

State and explain the condition of consumer's equilibrium in case of two commodities through utility approach.

Answer: According to the two commodity consumer equilibrium or law of Equi marginal utility, a consumer gets maximum satisfaction, when ratios of MU of two commodities and their respective prices are equal. Conditions of Consumer's Equilibrium in case of two commodities

1. Necessary Condition

Marginal utility of last rupee spend on each commodity is same. Suppose there are two commodities, X and Y respectively. So, for commodity X, the condition is, Marginal Utility of Money = Price of X

$$\text{Or } \frac{\text{Marginal Utility of a Product in Util } [MU_x]}{\text{Marginal Utility of One Rupee } [MU_R]} = \text{Price of X}$$

$$\text{Or } \frac{MU_x}{P_x} = MU_R \quad \dots(1)$$

Similarly, for commodity Y, the condition is,

$$\frac{MU_y}{P_y} = MU_R \quad \dots(2)$$

Putting equation (2) in (1), we get

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

(a) If $MU_x P_x > MU_y P_y$: It means, marginal utility from the last rupee spent on commodity X is more than marginal utility from the last rupee spent on commodity Y. So, to attain the equilibrium consumer must increase the quantity of X, which decrease the MU_x and decrease the quantity of Y which will increase the MU_y . Increase in quantity of X and decrease in quantity of Y continue till $MU_x P_x = MU_y P_y$

(b) If, $MU_x P_x < MU_y P_y$

It means, marginal utility from the last rupee spent on commodity X is less than marginal utility from the last rupee spent on commodity Y. So, to attain the equilibrium the consumer must decrease the quantity of X, which will increase the MU_x and increase the quantity of Y, which will decrease the MU_y .

Decrease in quantity of X and increase in quantity of Y continues till $MU_x P_x = MU_y P_y$

2. Sufficient Condition

Expenditure on commodity X + Expenditure on commodity Y = Money Income. In other words, Marginal utility falls as more units of a commodity are consumed. This condition must be satisfied to attain the necessary condition, i.e., $MU_x P_x = MU_y P_y$. If MU does not fall as consumption of a commodity increases, the consumer will spend all his income on one commodity, which is highly unrealistic.

Question 3. For a consumer to be in equilibrium why must marginal rate of substitution be equal to the ratio of prices of the two goods?

Or

Using indifference curve approach, explain the conditions of consumer's equilibrium.

Or

Why is the consumer in equilibrium when he buys only that combination of the two goods that is shown at the point of tangency of the budget line with an indifference curve? Explain.

Or

What are the conditions of consumer's equilibrium under the indifference curve approach? What changes will take place if the conditions are not fulfilled to reach equilibrium?

Or

State and explain the conditions of consumer's equilibrium in indifference curve analysis.

Or

Explain consumer equilibrium using the concept of budget line and indifference map or Interior Optimum Consumer Equilibrium.

Or

A consumer consumes only two of goods. For the consumer to be in equilibrium why must Marginal Rate of Substitution between the two goods must be equal to the ratio of prices of these two goods? Is it enough to ensure equilibrium?

Or

A consumer consumes only two goods. Explain the conditions that need to be satisfied for the consumer to be in equilibrium under indifference curve analysis.

Or

Show diagrammatically the conditions for consumer's equilibrium, in Hicksian analysis of demand.

Answer: (i) To define consumer equilibrium, we use Indifference Curve map and the budget line.

Two Conditions for Consumer Equilibrium

(a) **Necessary Condition**

Marginal Rate of Substitution =
Market Rate of Exchange $\left[\frac{P_x}{P_y} \right]$

Or $MRS_{x,y} = P_x/P_y$

(Market Rate of Exchange) MRE

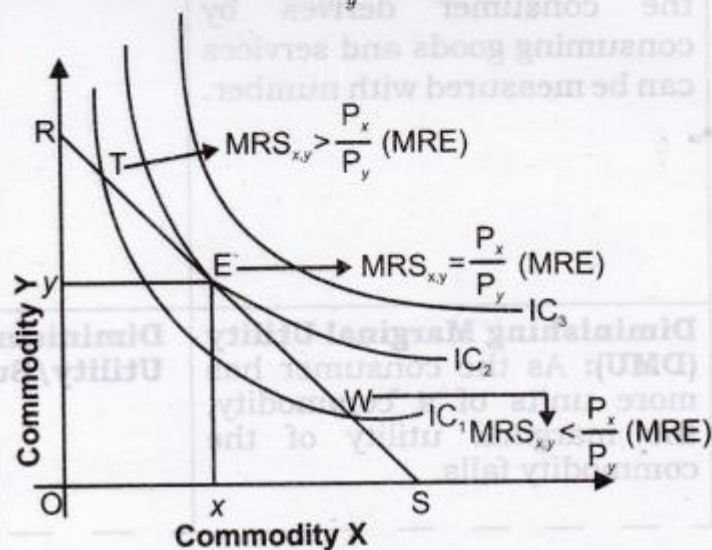
Or $MRS_{x,y} = MRE \left[\frac{P_x}{P_y} \right]$

● If $MRS_{x,y} > MRE \left[\frac{P_x}{P_y} \right]$,

At point T in figure,

It means the **consumer's willingness to pay** for commodity X is higher than what market values for commodity X. So, the consumer should buy more of X and less

of Y to get $MRS = \frac{P_x}{P_y}$.



- If $MRS_{x,y} < MRE \left[\frac{P_x}{P_y} \right]$,

At point W in figure.

It means the **consumer willingness to pay** for commodity X is lesser than what market values for commodity X. So, consumer should buy less of X and more of Y to get $MRS = \frac{P_x}{P_y}$.

(b) **Sufficient Condition**

$MRS_{x,y}$ Diminishing (Convex) at a point of equilibrium i.e., when

$$MRS_{x,y} = MRE \left[\frac{P_x}{P_y} \right].$$

- (ii) The consumer will reach equilibrium when the budget line is tangential to the higher possible Indifference Curve, i.e., where necessary and

sufficient conditions satisfy. In the above diagram, the consumer will reach equilibrium at point E where budget line RS is tangential to the highest possible IC2.

(iii) The consumer cannot move to Indifference Curve, i.e., IC3 as this is beyond his money income.

(iv) Even on IC2, all the other points except E are beyond his means.

(v) Hence, at point E, the consumer is in equilibrium where his satisfaction maximizes, given his income and prices of goods X and Y. In equilibrium at E, the slope of Budget line = the slope of Indifference Curve. Therefore, MRS_{xy} is equal to the ratio of the prices of two goods

$$[P_x/P_y]$$

Question 4. Differentiate between Cardinal and Ordinal Utility.

Answer:

Cardinal Utility Approach	Basis	Indifference Curve (Ordinal Utility) Approach
It states that the satisfaction the consumer derives by consuming goods and services can be measured with number.	Meaning	It states that the satisfaction the consumer derives from the consumption of goods and services by using a ranking system in which a ranking is provided to the satisfaction that is derived from consumption.
Diminishing Marginal Utility (DMU): As the consumer has more units of a commodity, the marginal utility of the commodity falls.	Diminishing Marginal Utility/Substitution	Diminishing MRS: As the consumer has more units of good X, the consumer is willing to give up less and less units of good Y, so as to maintain same level of satisfaction.

DMU is shown by MU curve which is falling throughout.	Representation	MRS is the slope of indifference curve. Indifference curve is convex to the origin showing diminishing MRS.
Consumer's Equilibrium $MU = P_x \dots$ for single commodity $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ for two commodities. Subject $P_x \cdot X + P_y \cdot Y = M$	Equilibrium Condition	Consumer's Equilibrium [Slope of Indifference curve] = [Slope of Budget line] $MRS = \frac{P_x}{P_y}$ and convexity of indifference curve.

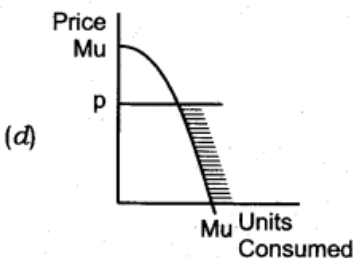
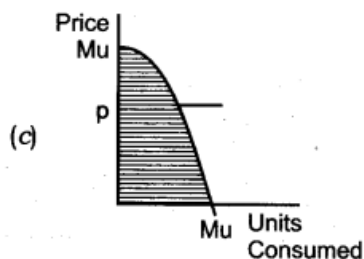
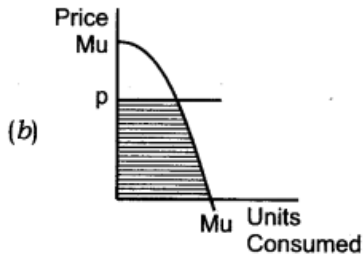
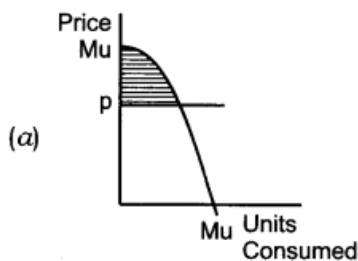
Multiple Choice Questions

Question 1. Total utility is maximum when

- (a) Marginal utility is zero.**
- (b) Marginal utility is at its highest point.**
- (c) Marginal utility is equal to average utility.**
- (d) Average utility is maximum.**

Answer: (a)

Question 2. Which of the shaded area in the diagrams below represent total utility?



Answer: (c)

Question 3. What does the area under the marginal utility curve depict?

- (a) Average Utility**
- (b) Total Utility**
- (c) Indifference Curve**
- (d) Consumer Equilibrium**

Answer: (b)

Question 4. Which one of the following is not an assumption of the theory of demand based on analysis of indifference curve?

- (a) Given scale of preferences as between different combinations of two goods.**
- (b) Diminishing marginal rate of substitution.**
- (c) Constant marginal utility of money.**
- (d) Consumers would always prefer more of a particular piece of goods to less of it, other things remaining the same.**

Answer: (c)

Question 5. The consumer is in equilibrium at a point where the budget line

- (a) Is above an indifference curve.**
- (b) Is below an indifference curve.**
- (c) Is tangent to an indifference curve.**
- (d) Cuts an indifference curve.**

Answer: (c)

Question 6. An indifference curve slopes down towards right since more of one commodity and less of another result in

- (a) Same satisfaction.**
- (b) Greater satisfaction.**
- (c) Maximum satisfaction.**
- (d) Decreasing expenditure.**

Answer: (a)

Question 7. The second glass of lemonade gives lesser satisfaction to a thirsty boy. This is a clear case of

- (a) Law of demand.**

- (b) Law of diminishing returns.
- (c) Law of diminishing utility.
- (d) Law of supply.

Answer: (c)

Question 8. The consumer is in equilibrium when the following condition is satisfied:

- (a) $MU_x MU_y > P_x P_y$
- (b) $MU_x MU_y < P_x P_y$
- (c) $MU_x MU_y = P_x P_y$
- (d) None of these.

Answer: (c)

Question 9. Which of the following options is a property of an indifference curve?

- (a) It is convex to the origin.
- (b) The marginal rate of substitution is constant as you move along an indifference curve.
- (c) Marginal utility is constant as you move along an indifference curve.
- (d) Total utility is the greatest where the 45 degrees line cuts the indifference curve.

Answer: (a)

Question 10. When economists speak of the utility of a certain good, they are referring to-

- (a) The demand for the good.
- (b) The usefulness of the good in consumption.
- (c) The satisfaction gained from consuming the good.
- (d) The rate at which consumers are willing to exchange one unit of good for another one.

Answer: (c)

Question 11. Budget set is

- (a) Right angled triangle formed by the budget line with the axes.
- (b) All points on the budget line.
- (c) Points inside the budget line.
- (d) Points on Y-axis from where budget line starts and the point

on X-axis where budget line ends.

Answer: (a)

Question 12. If indifference curve is straight line downward sloping,

- (a) MRS is increasing
- (b) MRS is decreasing
- (c) MRS is constant
- (d) MRS is zero

Answer: (c)

Question 13. If X and Y are two commodities, indifference curve shows

- (a) X and Y are equally preferred
- (b) Y is preferred to X
- (c) X is preferred to Y
- (d) None of these.

Answer: (a)

Question 14. If Marginal Rate of Substitution is constant throughout, the Indifference curve will be:

- (a) Parallel to the x-axis.
- (b) Downward sloping concave.
- (c) Downward sloping convex.
- (d) Downward sloping straight line.

Answer: (d)

Question 15. If Marginal Rate of Substitution is increasing throughout, the Indifference curve will be:

- (a) Downward sloping convex.
- (b) Downward sloping concave.
- (c) Downward sloping straight line.
- (d) Upward sloping convex.

Answer: (b)