

Wednesday Ch-2

30-4-20

[Consumer Equilibrium]

Q1- who was consumer?

Q2- what is equilibrium?

A1- Consumer is a person who buys and consumes a product to satisfy his wants.

A2- Equilibrium is a state of rest or best position from where the consumer does not want to change

$$\text{Equ} = m$$

Q3- what is utility?

A- Want satisfying power of a commodity.

→ Production → Creation of utility

Q4- Meaning of

Q4- Types of utility?

A-1. Positive utility

2. Negative utility

3. Zero utility

4. Total utility

5. Marginal utility



units
consumed

TU

MU

0

0

-

1

8

8

2

14

6

3

18

4

4

20

2

5

20

0

6

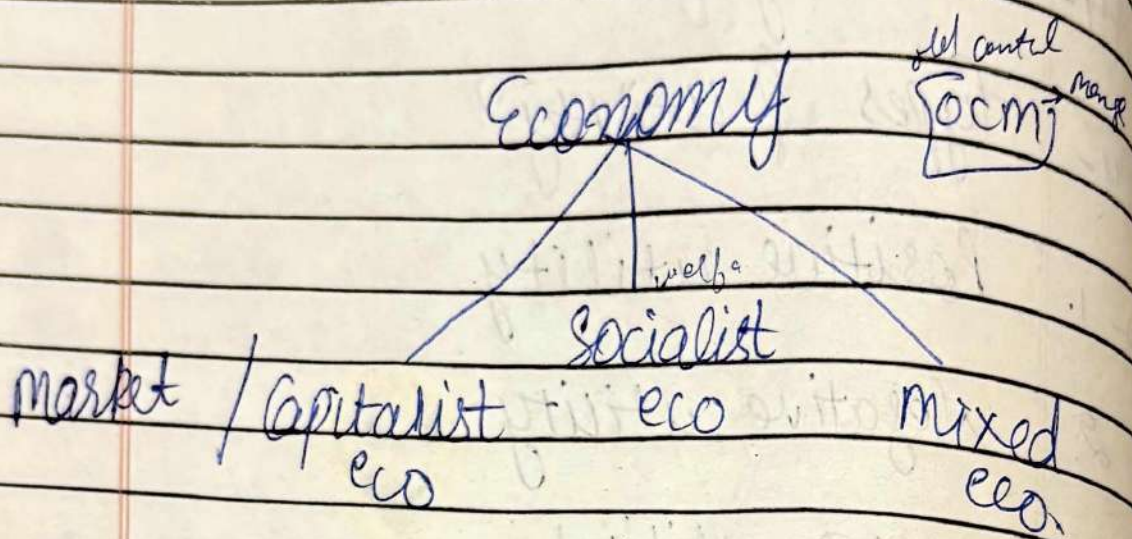
18

-2

} +ve

→ zero

-ve



Capitalist

1. The economy in which factors of production owned control and managed by private individual.
2. Profit is the main motive
3. No interference of government
4. Price is determined by forces of demand & supply

11 Socialist

1. The production are owned and regulated by government.
2. Prices are determined by state govt.
3. Interference of government
4. The main motive for producing goods and services in this economy is social welfare.

11 Mixed Eco

1. There is private as well as public ownership of means of production.
2. It is the combination of capitalism and socialism.
3. The private & public sectors work in co-operative manner to social objectives.

4. Profit will be primary motive of private sector industries.

5. In public sector, industries are owned & managed by govt.

Total utility

⇒ Total utility refers to total satisfaction that consumer gets by consuming entire units of commodity.

Marginal utility

→ marginal utility refers to addition made to total utility by consuming additional unit.

Zero utility

→ when by consuming additional unit total utility remains same, then marginal utility

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→ when by consuming additional unit total utility remains same, then marginal utility

will be zero. In the above table when we have consumed 5 units of commodity the utility derived 4th & 5th unit remains same.

$$MU = TU_n - TU_{n-1}$$

†

Negative utility

→ When by consuming additional units total utility falls MU has become Negative

†

Positive utility

→ When by consuming additional units total utility increases and MU is Positive it is called Positive utility.

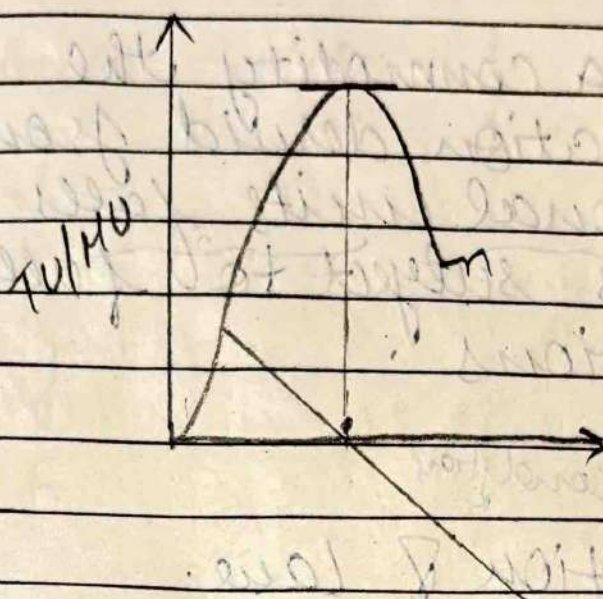
Q- Explain Relationship b/w TU & MU?

→ ~~Q~~ ~~Q~~

Meaning- Total utility refers to total satisfaction that consumer gets entire units of commodity.

M- Marginal utility refers to addition made to total utility by consuming additional unit.

Units	TU	MU
0	0	—
1	8	8
2	14	6
3	18	4
4	20	2
5	20	0
6	18	-2



Relationship $\downarrow \downarrow$

1. When TU is increasing MU falls but it is positive. utility.
2. When TU is maximum & constant MU is zero.
3. When TU is falling MU becomes negative.

Q. Q. 1 Expl. the law of diminishing marginal utility. [DMU]

A- Law of DMU

→ Statement of Law: As we consume more and more of a particular good, the marginal utility derived from each additional unit consumed tends to diminish.

units of a commodity the satisfaction derived from additional units falls. The law is subject to falling assumptions.

Q. what are conditions

→ Assumption of law.

1. There is no change in price of a commodity.
2. No change in income.
3. No change in quality of commodity.
4. Continuous consumption.
5. Independent utility.
6. Power of money remains constant.

~~All of money is~~
Money services constant there coming

Units MU

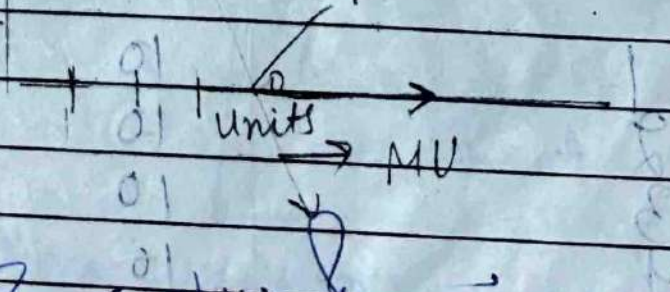
1	6
2	4
3	2
4	0
5	-2

$$V_9 = \left(\frac{1}{2}\right) \times V_{10}$$

6
5
4
3
2
1

MU-TU

MU=0



Q.6) what is consumer equilibrium
 & conditions of it when
 consumer is consuming a
 commodity?

A- Consumer Equilibrium is a condition when consumer is getting maximum satisfaction and he/she does not want to change from that situation. It is situation of best position.

Q: $MU_x(\frac{1}{x}) = P_x$

This condition can be expl. with help of Table or diagram

Units consumed	Price MU (utils)	MU _n (MU_n)
1	10	20
2	10	16
3	10	10
4	10	4
5	10	0
6	10	-6

* utility of marginal money is constant & the one assumption.

$$MU(\text{₹}) = \frac{MU(\text{utils})}{MU(\text{money})}$$

Util is the unit of satisfaction. In other words, satisfaction can be measured in utils.

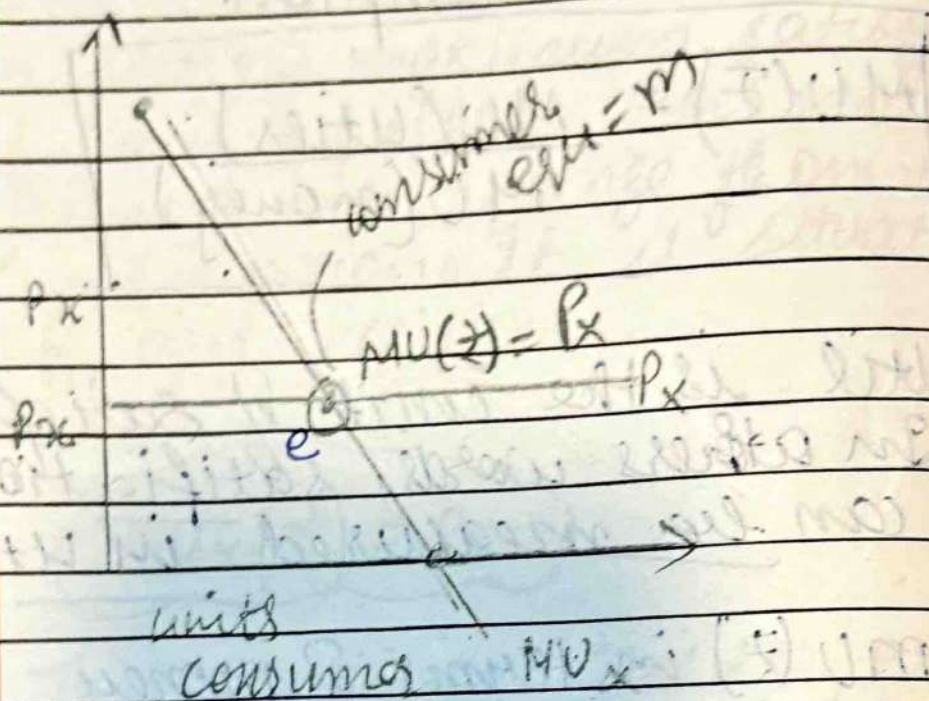
$MU(\text{₹})$ in terms of money refers to when satisfaction is converted into money, and formula for converting

$MU(\text{₹}) = \frac{MU_x(\text{utils})}{\text{price of } x}$ is as follows:

$$\frac{MU_x(\text{util})}{MU_M}$$

When consumer is consuming 3 units then MU of Pepsi is 10 and price is 10.

20
16
10
4
0



In above table & diagram we can see that MU_x is marginal utility curve which slopes downwards. P_x is the price of a commodity which is 10 and price remain constant so P_x is will be parallel to x-axis which shows the price is constant. Both curves intersect each other at point 'e' which is point of consumer equilibrium.

Q. what do you mean by Cardinal utility?

A. when satisfaction is measured in numbers it is known as cardinal utility.

Q-9) what will happen when $P_x >$
 ii) P_x is $< MU_x(z)$

→ i) $MU_x(z)$ greater than P_x . In this situation the satisfaction is more than the price paid. In other words, $Benefit > Cost$. So consumer will buy more units of good-x as a result MU will fall and will become equal to $MU_x(z) = P_x$.

ii) $MU_x(z) < P_x$
 In this satisfaction demand is less than the price. In other words $Cost > Benefit$. So consumer will ~~con~~ reduce the consumption. By less units of goods. In this way low

of DMU will operate in reserve direction. And MU will increase an ultimately $MU \times (2) = P_x$

Q.

what is consumer Equilibrium?
What are conditions of consumer equ. when consumer is consuming 2 commodity

A- Statement of Law:

when consumer is consuming 2 commodities he will spend his income in such a way that satisfaction derived from last unit of money spent gives equal satisfaction

This can expl. with help of table

Units	MV _x	MV _y
1	20	16
2	14	12
3	12	8
4	7	5
5	5	3

last unit of money spent on good x which gives utility 12.

last unit of money spent on g-y is 7 & 20 it gives satisfaction utility

$$12 = 12$$

Consumer will

If ~~can~~ spent first unit of commodity on g-x it gives satisfaction worth 20.

If we spent on y it will give satisfaction worth 16. so consumer will spend first 2/2 on g-x

→ write this w/d 2 condnity if $\left(\begin{array}{l} \text{6 or 2} \\ \text{more marks} \end{array} \right)$

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Q- what will happen when $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$.

A- when $\frac{MU_x}{P_x} > \frac{MU_y}{P_y}$. It means

the consumer is getting more satisfaction from $g-x$ as compare to $g-y$. Therefore, he will buy more units of $g-x$ and law of DMU will operate for $g-x$. MU_x will start falling. It keeps on falling till it becomes equal to MU_y .

→ when $\frac{MU_y}{P_y} > \frac{MU_x}{P_x}$ It means

the consumer is getting more satisfaction from $g-y$ as compared to $g-x$. Therefore, he will buy more units of $g-y$ and law of DMU will operate for $g-y$. MU_y will start falling. It keeps on falling till it becomes equal to MU_x .

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becomes equal to $mu x$.

Q- what do you mean by indifference curve

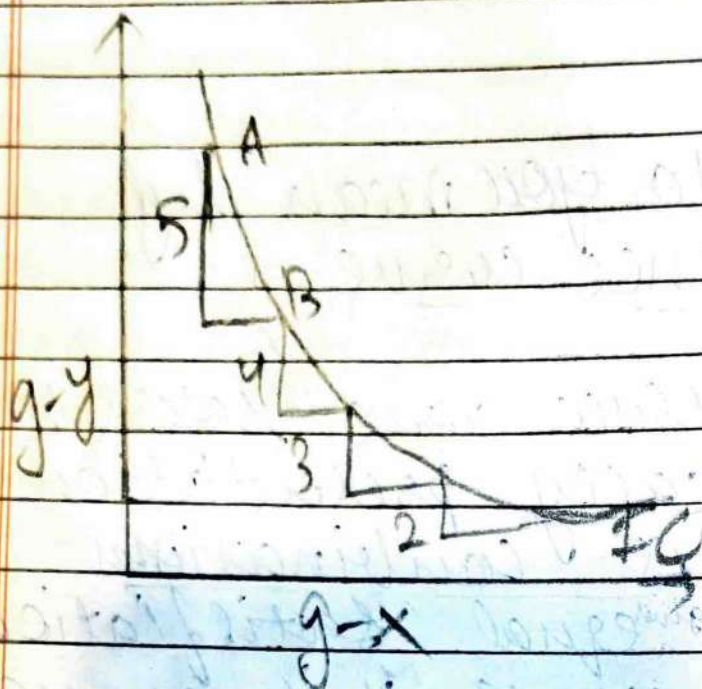
A- Indifference curve refers to the graphically presentation of various combinations which ^{gives} equal satisfaction to the consumer. This curve is also known as equal satisfaction / Iso utility curve. The indifference curve approach is also known as ordinal utility approach.

ordinal

slowly
15/11/2019

1. Combination		G-x	G-y	MRS	Marginal Rate of Substitution
S-1	A	1	15		
	B	2	10	5	5/1
	C	3	6	4	4/1
	D	4	3	3	
	E	5	1	2	

MOC = Increasing / Decreasing



we are increasing consumption of $g-y$ at combination A consumer is consuming 1 unit of $g-x$ & 5 unit of $g-y$ which is shown by Point A in diagram and we find that Rate of substitution is falling.

Q- Assumption of 'IC'

(2)

A- 1. 2 Commodity

2. Equal satisfaction

3. No change in Income

4. No change in Price

5. Non Satiation

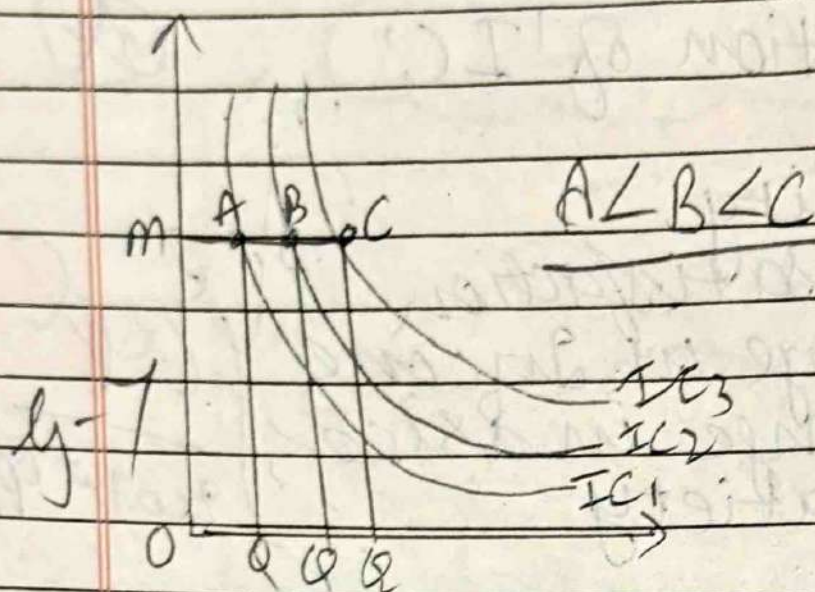
Expl.

no sat py

Q- What is Indifference Map.

A- Family of 'IC' or set of indifference curves is known as Indifference map. In other words, when 2 or more indifference curves are plotted on same axis then it is indifference map.

Higher the indifference higher the satisfaction.



$$A < B < C$$

$$OQ_2 < OQ_1$$

$$OQ_3 \geq OQ_2$$

Q. mean by MRS ? (3.2)

A. It refers to number of units of y commodity the consumer is willing to sacrifice in order to take additional of x.

$$\frac{MRS_{zx}}{MRS_{xy}} = \frac{MRS_{xy}}{MRS_{AB}}$$

Assumptions of IC

1. Non-satiation It refers to the consumer has not reached the pt. of max. satiation.

~~What is the~~

2. Ordinal Utility $\rightarrow$ It is measured in terms of rank.

3. Rational consumer $\rightarrow$ A rational consumer is a person who wants to get max. satisfaction.

4. MRS Diminishing $\rightarrow$ If IC assumes indifference curve is convex to the origin because of diminishing MRS.

Q. Properties of ICU

1. IC is convex to origin $\rightarrow$

Hint: (bcz of Diminishing MRS, mean MRS table same IC, dia line explain.)

2. Slope downward $\rightarrow$ (Relation, Table)

3. Higher IC higher satisfaction

4. 2 IC curve never intersect



Properties of Indifference Curve

1. Indifference Curves are always convex to origin $\rightarrow$ An 'IC' is convex to origin because of diminishing MRS. MRS declines continuously because of Law of DMU.

2. Slopes downwards $\rightarrow$ A consumer consumes more of one good, he must consume less of the other good.

3. Higher 'IC' Higher Satisfaction $\rightarrow$ Higher 'IC' represents large bundles of goods. It means more utility because of monotonic preference.

4. IC never intersect each other $\Rightarrow$ 2
 IC cannot represent the same level of satisfaction, they cannot intersect each other.

IC never touch any axis it is locus combination of 2 commodities and if it touch any axis it means we are consuming only 1 comm. so, it never touch any axis.

1 Q- What is Budget Line?

2 Q- What is Budget set

3 Q- Equation of B.L. ——— ★

4 Q- Properties of B.L.

5 Q- Relation of Shift B.L. — OK

6 Q- Diff B.L. & B.S.

A-1. Budget line refers to all possible combination of 2 goods that can be purchased at given income & given prices (entire entire).

4A - Properties : B/L

1. Budget line is straight line
 2. Downwards sloping
 3. Budget line is straight line because constant price ratio.
- Has (-)ve slope i.e. Slopes downwards as more of 1 good can be bought by decreasing some units of 2.

A2 - The combinations of the two commodities which consumer can afford at given income & price.

A6 - Budget Line

- ① Budget line refers to that line which represent by graphical of two combinations.

- ② The bundles of budget line lies on it.

Budget Set

Budget set refers to that set of which two combinations which is consumer can afford by given income.

The bundles of budget line lies on it.



become the budget line.

③ The b.o.l. is expressed as
 $M = (P_A \times Q_A) + (P_B \times Q_B)$.

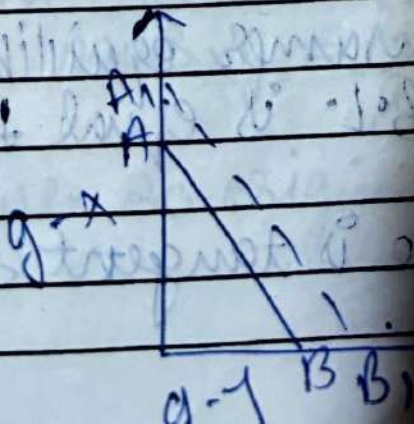
It is expressed as $M \geq (P_A \times Q_A) + (P_B \times Q_B)$.

fall in b^d = exp
demand falls

Shift in Budget Line

① when the consumption of both the commodities increases budget line shift rightward.

② when income of consumer increases the consumer will consume more of both the commodities & budget line will shift rightward.



→ consumption of both the commodities fall due to fall in income.

more income
rightward shift

less income
leftward shift

Budget Set

→ combinations of two commodities

Budget line

→ It is graphical representation of two commodities.

Consumer's Equilibrium with help of B.L. & I.C.

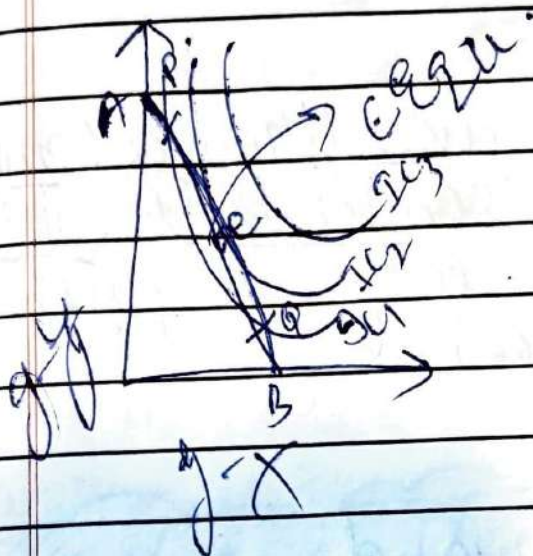
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Conditions

- ① Slope of consumer equilibrium or slope of B.L. is equal to slope of I.C.
- ② Budget line is tangent to I.C. at

$$MRS_{xy} = \frac{P_x}{P_y}$$

② IC is convex.



→ In above diagram we have taken y - x on x axis and on y -axis we have taken y . AB price line which is downwards. IC_1 & IC_2 , IC_3 are 3 indifference curves. The consumer ~~will~~ does not take IC_3 because it is beyond price line. IC_1 & IC_2 touch each other at 3 pts. i.e. P, Q the consumer will not equilibrium point which satisfy both the condition of CE. i.e. $MRS_{xy} = \frac{P_x}{P_y}$ & IC is convex to origin.