UNIT 2: THEORY OF CONSUMER BEHAVIOUR

Want

- Wish or desire to own or use Goods & Services that give satisfaction.
- Wants may arise due to Physical, Psychological or Social factors.
  - Physical: Hunger, Clothing, Shelter.
  - Psychological: Desire for things that brings Pleasure.
  - Social: Influenced by society.

Characterstics of Wants

a) Wants are unlimited in nature & all want cannot be satisfied.

b) Wants differ in intensity some are urgent, some are not urgent.

c) Each want is Satiable.
- [Capable of being Satisfied]

d) Wants are Competitive.

Eg :- ₹100
- Pizza
- Gaming zone
- Cold-drink

e) A particular want may be satisfied in alternative ways.

f) Wants are Subjective & Relative.
- [Varies from person to person]
- [To time & place]

g) Some wants recur again & again, where others do not occur again & again.
- [Non Durable consumer goods] Food
- [Durable consumer goods]

h) Wants may become habit & customs.
- [Addiction]
- [Tradition/Customs]

i) Wants are affected by Income, Taste, Fashion, Advertisement, etc.

Clasification of Wants

Necessaries | Comfort | Luxury

1] Necessaries

Necessories for life or existence
- Things necessary to meet physiological needs such as Minimum amount of food, clothing & shelter.

Necessories for life or efficiency
- To maintain Longevity, energy & efficiency
- Nourishing food, adequate clothing, clean water
- Comfortable dwelling. house

Conventional Necessaries
- Not necessary either for existence or efficiency.
- Arise due to pressure of habits or social customs.

2] Comfort

→ Comfort makes life Comfortable & Satisfying.

Eg:- -Taste & Wholesome food.
-Good house.
-Clothes that suit different occasion.
-Labour saving equipements. [Washing Mashing]
-Audio-visual equipments.

3] Luxury

→ Wants which are Superfluous & expensive.
[Unnecessary]

Eg:- -Expensive clothing, Vintage cars, Classy furniture etc.

Utility

→ In general, utility is satisfaction. In economic sense, utility is a want satisfying power of a commodity.

→ Utility depends on intensity of want.
→ Utility is Subjective & Relative.
Utility ≠ Usefulness
[Utility is a psychological concept]
→ Utility is Ethically neutral.


Dhokla
→ Expected Satisfaction ↑


Bhalle Papdi

2 Important Theories

Marginal Utility	Indifference Curve
Alfred Marshall	J.R Hicks & Allen
Cardinal approach	Ordinal approach

→ Marginal Utility Analysis

Additional

MU → [Hypothetical measuring units]

Units	Units [Utils]	Total Utility [TU]
1	10	10
2	8	18 (ΔTU/ΔQ)
3	5	23
4	2	25
5	0	25
6	-2 → [Discomfort]	23

MU
10
8 TU₂-TU₁
5 TU₃-TU₂
2
0
-2

Total Utility [TU]:-

→ It refers to sum total of utilities derived from comsumption of all the units of a commodity consumed by consumer.

$$TU = \Sigma MU$$

Marginal Utility [MU]:-

→ It is the additional utility derived from consumption of an additional unit of the commodity.

$$MU = \frac{\triangle TU}{\triangle N}$$

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

→ MU = 25 - 23

→ MU = 2

Eg:-

	Units	MU	TU	
△N = 1	1	20	20	
	2	$TU_2 - TU_1$	30	△TU = 10
△N = 2		30 - 20 = 10		△TU = 10
	4	$TU_4 - TU_3$ ✗	40	

$\frac{\triangle TU}{\triangle N} = 5$

→ Relationship between Total Utility [TU] & Marginal Utility [MU]:-

Eg:-

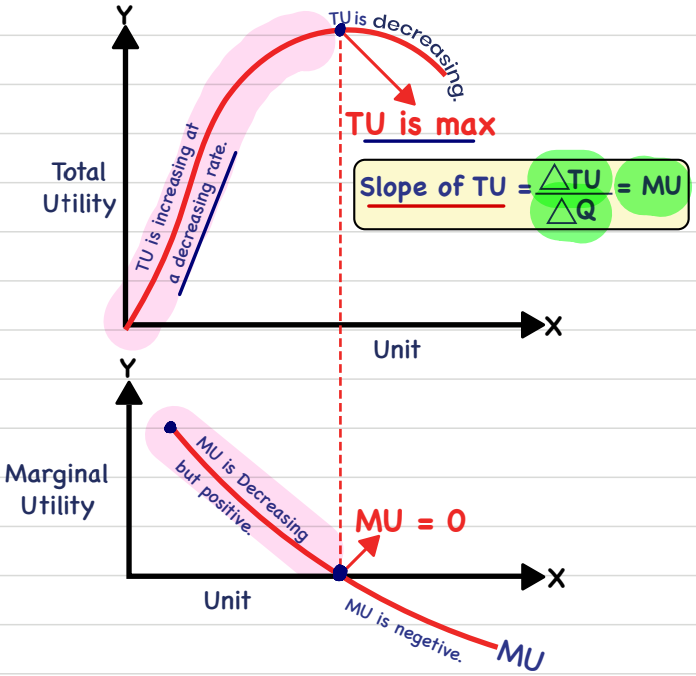
Units of Dhokla	Marginal Utility	Total Utility (MU sum)	
1	20	20	
2	14	34	+14 Dec Rate
3	11	45	+11
4	5	50	+5
Satiation ← 5	0	50	
6	-4	46	

(+ ive ↓)

1) At first unit, TU = MU.
2) Initially, TU is increasing at a decreasing rate.
   → [MU is positive but decreasing.]
3) When MU is zero, TU is maximum.
4) When MU is negative, TU starts decreasing.

Law of Diminishing Marginal Utility

As a person consumes more of a particular good, additional satisfaction from each successive unit decreases.



This Law is based on 2 important facts:

1]Total wants of a person are **Unlimited.**

2] Each want is **Satiable.**

Assumptions of Law of Diminishing Marginal Utility

1) A customer is **Rationale** & attempts to attain max satisfaction.
2) The different units consumed should be **identical.**
   → [Homogeneous]
3) There should be **no time gap** or **interval** between consumption of one unit & another unit.
   → [Continuous Consumption]
4) The different units consumed should be of **Standard size.**
5) **Money** is the measuring rod of utility.

Eg :-

Units	Utils	
1	20	MU → Amount a customer is
2	16 ✓	willing to pay for 1st unit.

$MU_2 = 16$ → A customer is willing to pay 16 for 2nd unit.

6) The habits, taste, income of the consumer also remains unchanged.
7) The law may not apply to articles like cash, gold, where a greater quantity may increase satisfaction.
8) Constant Marginal utility of Money (MUm) -> Add satisfaction a person derives from an extra unit of Money.

	1	2	3	4	5
MU_{momos}	10	7	5	3	2

बहुत पैसा → I
Tina
कम पैसा → II

High Utility → Because of MU_m

9) Independent Utility = Ignore complementary & Substitute goods.

→ Utility may be affected by the presence of Substitutes or Complementary.

Consumer Equilibrium

State of Max Satisfaction

Eg:- Momos - ₹10/- unit

Consumer is willing to pay

Price → Consumer actually pays

MUm $\left[\frac{MUx}{Px}\right]$	Unit	MU_{momos}	Price
10	1	100	10
8	2	80	10
5	3	50	10
4	4	40	10
2.5	5	25	10
Consumer Equilibrium	6	10	10
	7	0	10 ✓ Loss

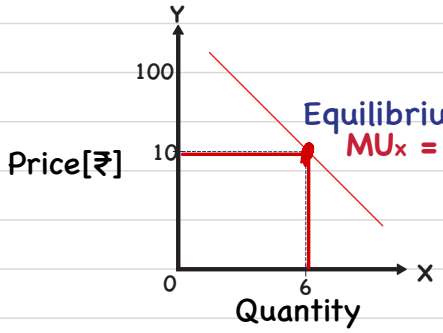
$MU_x = P_x$ MUm : 1

Consumer Equilibrium => $MU_x = P_x$

Consumer is willing to pay = Consumer actually pays.

$MU_{money} = \frac{MU_x}{P_x}$

At consumer equilibrium, $MU_m = 1$



MU curve = Demand curve

Consumer Surplus

The extra satisfaction which consumer gets from their purchase of goods.

Consumer Surplus => What consumer is ready to pay (MU_x) − What he/she actually pays (P_x)

→ Measure of Welfare that people gain from consuming goods/services

↓

Consumer Surplus

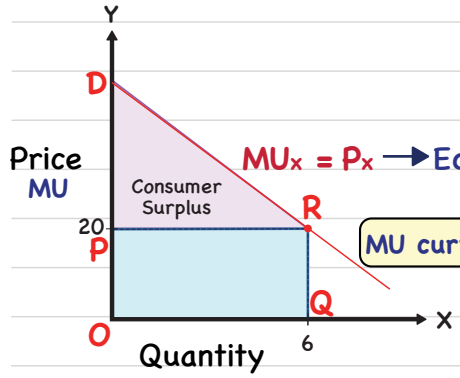
Demand

Eg:- Gulab Jamun - ₹20/- unit

	Units	MU_x	P_x	Consumer Surplus
	1	30/-	20	10
	2	28	20	8
	3	26	20	6
	4	24	20	4
	5	22	20	2
Equilibrium ←	6	20	20	-

1) The concept of consumer surplus is closely related to the demand curve of the product.
2) This concept occupies an important place in Economic planning of Govt. & Decision making of firm.
3) It is assumed that **Perfect competition** prevails in the market.
4) Since the price is same for all the units of the goods, consumer gets extra utility for all the units consumed except for the one at a margin.
→ Eq. qty - 6th unit

Eq



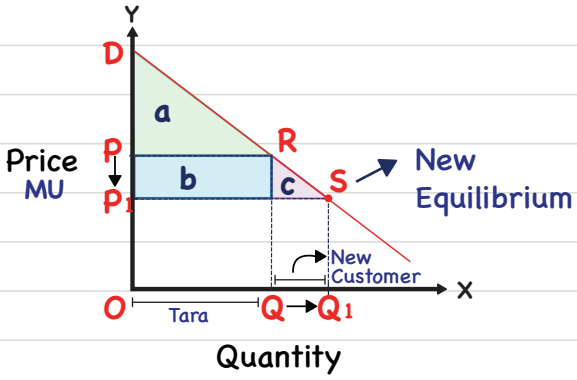
$MU_x = P_x$ → Equilibrium

MU curve = Demand curve

1) Total utility [sum of MU] = ODRQ
→ Total amount consumer is willing to pay.
2) Total amount actually paid = OPRQ
Consumer Surplus [1-2] = PDR

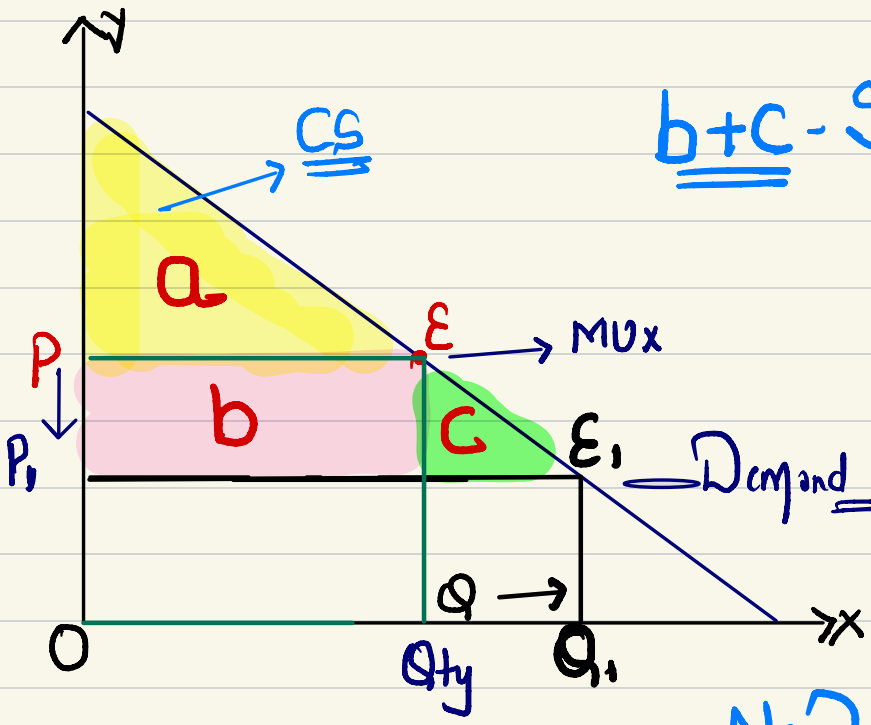
Consumer Surplus = Area below the Demand curve & above the price line.

→ **Change in Consumer Surplus due to fall in price**



At original price P
→ Consumer Surplus = a
At Price P_1
→ Consumer Surplus = a + b + c
Increase in Consumer Surplus

Increase in Consumer Surplus = b (Existing customers) + c (New customer)



b+c - Inc. in CS

New customers

$MU_x - P_x$

- Fall in prices of goods: a] Increase in Consumer Surplus.
  b] Lower price generates larger Consumer Surplus.
- Increase in prices of goods: a] Decrease in Consumer Surplus.
  b] Higher price generates lower Consumer Surplus.

Application of Consumer Surplus

a) It is very important to a business firm to reflect on the amount of Consumer Surplus because consumer who **perceive large surplus** are more likely to **repeat their purchases.**

b) **Price Discrimination:** If a business can identify customers with different elasticity of Demand, willing & able to pay higher prices.

NG MU↑ — $e < 1$ → Higher prices can be charged

OG MU↓ — $e > 1$

c) **Large Scale Investment decision:** It involves cost-benefit analysis, which takes into account the extent of Consumer Surplus which the project may fetch.

d) Knowledge of Consumer Surplus is important while **raising the product price.**

e) **Guide to Finance Minister:** When they have to decide about rate of taxes. It is always desirable to impose taxes on products having high consumer surplus.

Limitation of Consumer Surplus

a) Consumer Surplus cannot be measured precisely → MU is difficult to measure.

b) In case of **necessaries,** MU of earlier units are infinitely large. In such cases, **Consumer surplus is infinite.**

c) Consumer Surplus is affected by availability of Complementary & Substitutes.

d) It is very difficult to measure the utility of goods used for prestige value.
→ Diamonds

e) Consumer Surplus cannot be measured in terms of money because MU_m changes as the consumer's stock of money changes.

f) Assumptions that utility can be measured in terms of money is **unrealistic.**

Indifference Curve Analysis

→ Hicks & Allen
↓
Ordinal approach
↓
Ordering of preferences

We will take combination of 2 goods

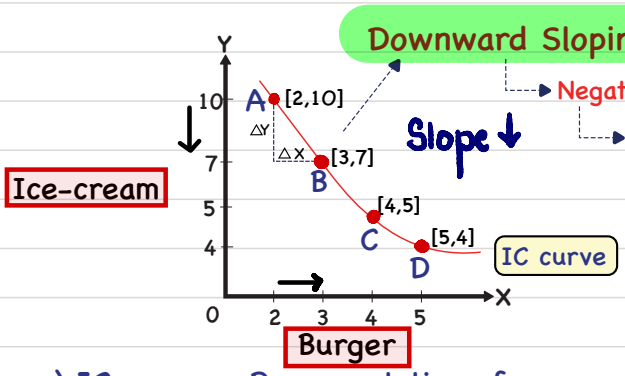
	Burger	Ice-cream
A]	2	10
	+1 (Gain, MU↑)	-3 (Sacrif, MU↓)
B]	3	7
	+1 (Gain↓)	-2
C]	4	5
	+1	-1
D]	5	4

1] Same level of Satisfaction

2] Gain of satisfaction from 1 unit of Burger = Loss of satisfaction from 3 units of ice cream

10 Ice-cream	2 Burgers		7 Ice-cream	2 + 1 Burgers
Total Satisfaction		=	Total Satisfaction	

Indifference Curve



Downward Sloping → Negative Slope → Inverse relation between X & Y

Slope ↓

a) IC curve - Representation of consumer pref. graphically.

b) Represents all the combination of 2 goods which give equal satisfaction.

c) Indifference curve - Iso-utility curve or Equal utility curve.

Equal

Marginal Rate of Substitution [MRS]

	Burger	Ice-cream	MRS_{XY} [Absolute Values]
A]	2	10	
	+1	-3	
B]	3	7	3
	+1	-2	
C]	4	5	2
	+1	-1	
D]	5	4	1

a) MRS is the slope of Indifference curve.

$\frac{\Delta Y}{\Delta X}$ → $\frac{\text{Sacrificed Quantity}}{\text{Gained Quantity}}$ $MRS_{XY} = \frac{\Delta Y}{\Delta X}$

b) MRS is the rate at which a consumer is willing to sacrifice/exchange units of good Y for good X.

Why MRS falls ?

In the beginning, at point A, consumer consumes small quantity of X[Burger] & therefore, MU_X is high. But at point A, consumer is consuming large quantity of Y[Ice-cream] & therefore MU_Y is low.

Gain = Sac.

→ This means that it takes a large reduction in the quantity of Y to counterbalance the increased utility he/she gets from 1 unit of X.

→ At point C, Consumer consumes much larger quantity of X & much smaller quantity of Y, than point A.

↳ Additional unit of X adds lesser utility & therefore consumer is willing to give up less units of Y.

Conclusion:

a] The want for a particular good is Satiable so that when a consumer has more of it, intensity of want for it decrease. MU↓

b] Most goods are imperfect substitutes. MRS falls ↓

Assumption

1] Consumer knows his taste & preferences & possesses full information about relevant aspects of economic environment in which he/she lives.
↳ [Price, Quality, etc]

2] Consumer is rational.

3] Utility is ordinarily expressible.

Eg:- A[1,5] | B[2,4] → Consumer can rank all possible combinations as first preference, Second preference, but can't quantify satisfaction in number.
I II

4] Consumer choices are transitive. → Consistent consumption pattern

Dhokla	>	Burger	a > b
Burger	>	Momos	b > c
⇒ Dhokla	>	Momos	⇒ a > c

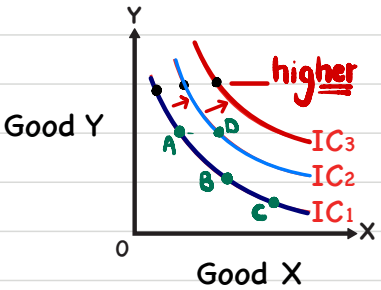
5] More is better or assumption of non-satiation.

Eg:- A [3,8]
B [3,10]
C [5,10] → Quantity

↳ [MU +ive]

Monotonic Preference

Indifference Map



a] Set of Indifference curve & each corresponds to different level of satisfaction.

b] Higher Indifference curve → More Satisfaction

→ Curve lying farther from the origin → More Satisfaction

Formula of MRS

Gain in utility of one good = Loss in utility of another good

$\Rightarrow \Delta Q_X \times MU_X = \Delta Q_Y \times MU_Y$

Slope $\frac{\Delta Q_Y}{\Delta Q_X} = \frac{MU_X}{MU_Y}$

Slope of IC $= \frac{MU_X}{MU_Y}$

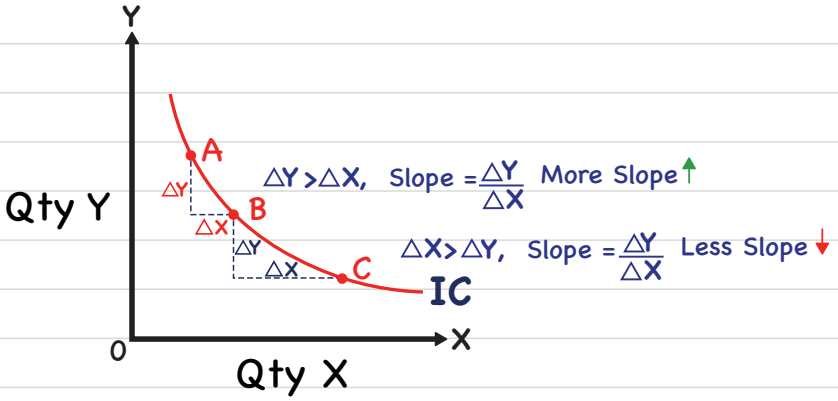
$MRS_{XY} = \frac{MU_X}{MU_Y}$ → Will keep on decreasing / Will keep on Increasing

As we move downward in IC curve

Marginal Rate of Substitution of X for Y

Discussion on Slope

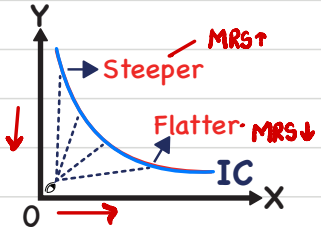
IC becomes Flatter [less slope] as we move downward.



Properties of IC curve

1] IC slope downwards to the right
- Inverse relationship between X & Y.
- Two commodities can be substituted for each other.

2] IC are always convex to the origin
- Diminishing MRS

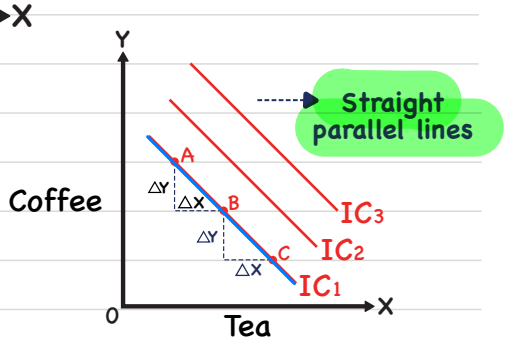


Two extreme situations:

a] Perfect Substitutes

	Burger	Ice-cream
A]	1	2
	+1	-1
B]	2	1

MRS is constant → Slope constant



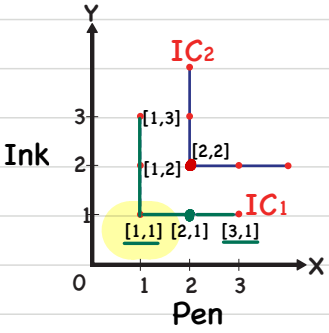
b] Perfect Complementry Goods

→ Goods are consumed in fixed proportion.

	Pen	Ink	
A]	1	1	
	+1	−1	
B]	2	0	✗
	+1	+1	
C]	2	2	
D]	2	1	
E]	1	2	

Same level of Satisfaction

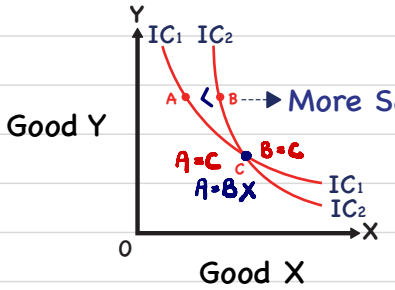
Different level of Satisfaction



Perfect complements – L Shape.

MRS – undefined, because individual preference do not allow any substitution.

3] IC cannot intersect each other



C lies on both IC_1 & IC_2

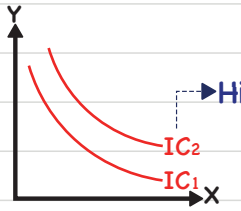
A = C [IC_1]

B = C [IC_2]

Therefore, A = B

This is not possible

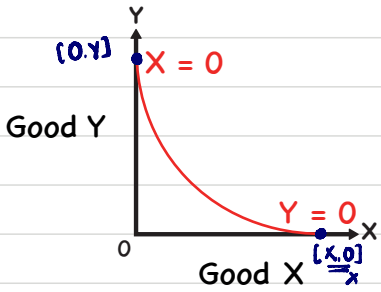
4] A Higher IC represents higher level of Satisfaction



→ Higher Satisfaction

Because more goods means more satisfaction

5] IC will not touch either axis



→ This is because of our assumption that consumer is considering combination of 2 goods.

Budget Line

Consumer maximize their well being subject to constraints.

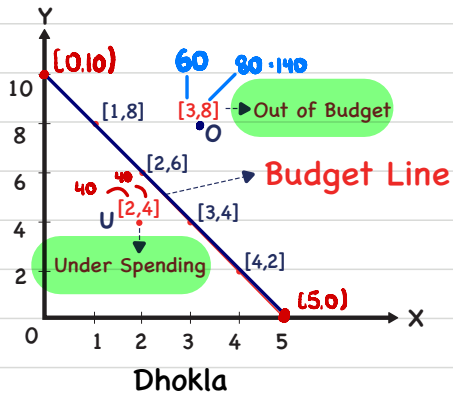
Price of Goods | Limited income

Eg:- Budget - ₹100

Dhokla ₹20 (+1) Slope (×2) Chocolate ₹10

$\frac{P_x}{P_y} = \frac{20}{10} = 2$

	Dhokla	Chocolate	Slope $\left[\frac{\triangle \text{in Chocolate}}{\triangle \text{in Dhokla}}\right]$
A	0	10	-
B	1-20	8	2
C	2-40	6	2
D	3-60	4	2
E	4-80	2	2
F	5-100	0	2



Chocolate

- The Budget Line shows all combinations of two goods which consumer can buy spending his given income.
- Total expenditure on goods & services can fall short [U] of the Budget but may not exceed it [O].

$P_X Q_X + P_Y Q_Y \leq$ Budget

Dhokla Chocolate

{We assume that the consumer uses his/her entire income to purchase the commodities.}

$P_X Q_X + P_Y Q_Y =$ Budget

Slope of Budget Line = $\frac{P_X}{P_Y}$

Not for Exam:

Equation of straight line $\Rightarrow y = mx + c$ (Slope)

$Q_Y = \frac{B - P_X Q_X}{P_Y} \Rightarrow Q_Y = \frac{B}{P_Y} - \frac{P_X}{P_Y} \times Q_X$

$Q_Y = \frac{-P_X}{P_Y} \times Q_X + \frac{B}{P_Y} \Rightarrow y = -mx + \frac{B}{P_Y}$

- Slope of BL = $\frac{P_X}{P_Y}$ → Rate at which consumer can trade one good for another.
  - Also known as Price Line.

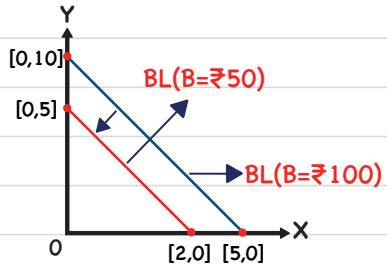
Shift in budget line

A] Change in level of Income of the consumer, with no change in Price.

B] A change in price of one or both the products.

→ Change in real income → Purchasing power

C] Change in income & price.



Slope of IC = Rate at which a consumer is willing to sacrifice good Y for good X

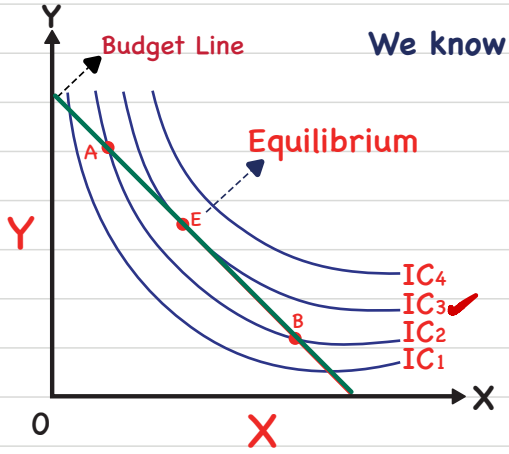
Slope of BL = Rate at which a consumer is actually able to exchange good Y for good X

Consumer Equilibrium

→ Max possible Satisfaction given the budget constraints

→ Assumptions

1] Consumer has given indifference Map.
2] Consumer has fixed money which will be spent wholly on X & Y.
3] Prices of X & Y are given and fixed.
4] All goods are homogenous & divisible.
5] Consumer is rational.



We know higher indifference curve = higher satisfaction

→ Max satisfaction will be on IC4 but those combinations are non attainable, outside budget line.

→ Now, from A, E & B, consumer will be at equilibrium at higher curve i.e. IC3 & therefore, consumer will be at equilibrium point at E.

→ BL is tangent to IC.

→ Two condition for equilibrium

1] It will be a point on BL. ✔
2] It will be on the highest IC possible.

→ At point E, Slope of BL = Slope of IC (MRS)

$$\frac{P_X}{P_Y} = \frac{MU_X}{MU_Y}$$

Rate at which a consumer is actually able to exchange good Y for good X = Rate at which a consumer is willing to sacrifice good Y for good X. (MRS)

$$\Rightarrow \frac{MU_X}{P_X} = \frac{MU_Y}{P_Y}$$

→ IC is Superior to utility analysis

1] Dispenses with the assumption of measurability of utility.

2] Studies more than one commodity at a time.

3] No assumption of constancy of MUM. Marg. utility of Money.

4] Segregates income effect & Substitution effect.

↓

BL shift

Unit over :)