Economics :

3.11.2023

Greek word 'Oikonomia'

Oikos → house | Management of household estate

nomos → custom/law.

Definition:

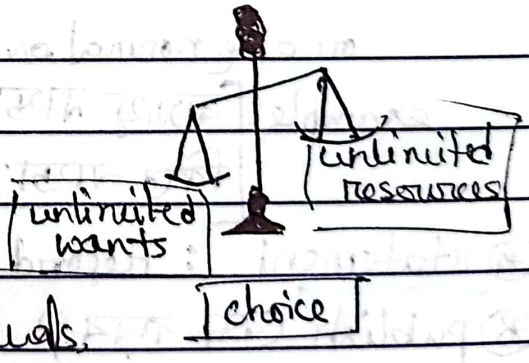
→ Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses (L. Robbins)

→ Study of man in the ordinary business of life

- Alfred Marshall

* Father of Economics → ADAM SMITH

Economics is a social science that focuses on the production, distribution and consumption of goods and services and analyzes the choices that individuals, businesses, governments and nations make to allocate resources.



Subject : _____ Date: ☐☐☐

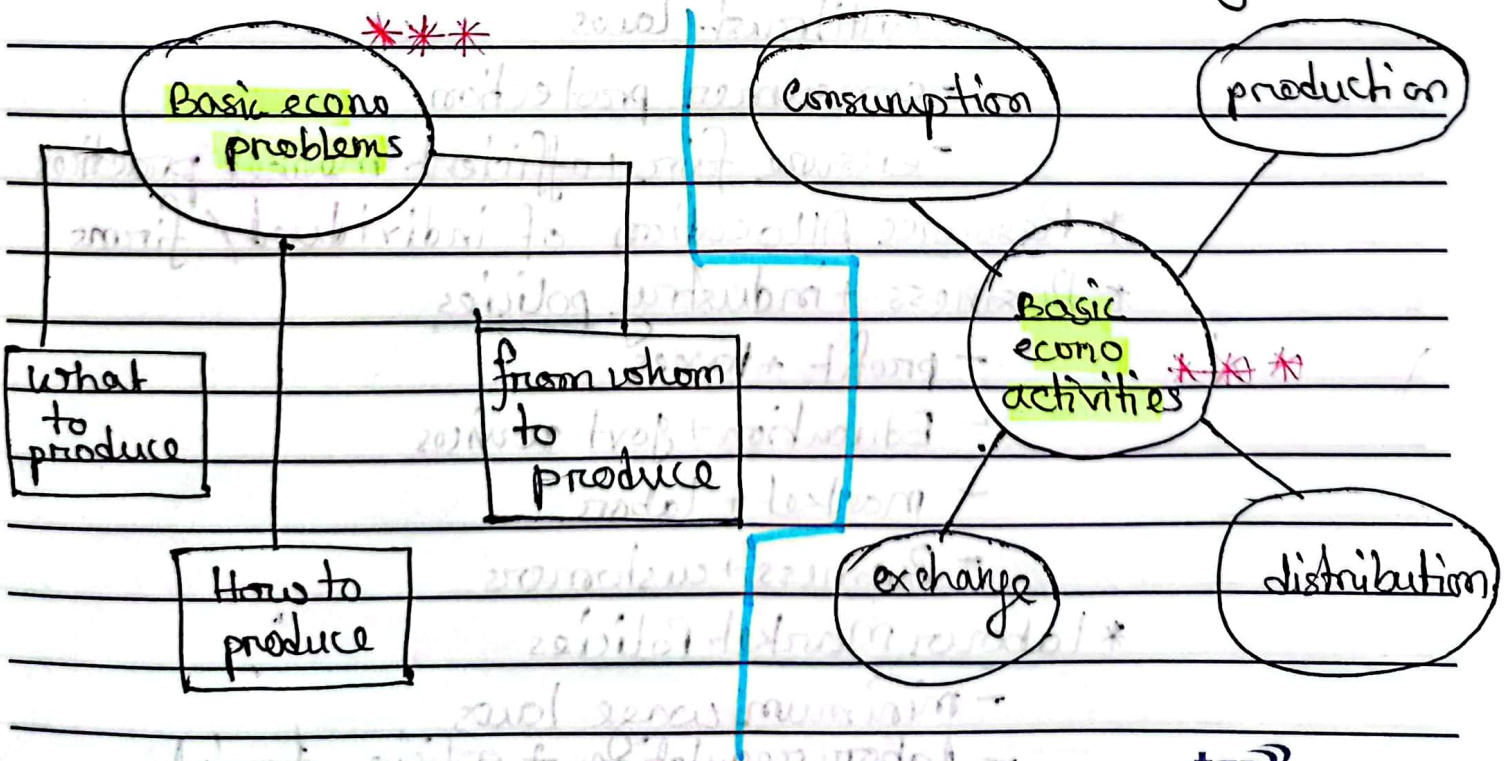
Nature of Economics: [Science] – study of econo laws and variables. relationship → cause + effect

[art] – applicable in our daily life
exple: demand + supply.

Both ⊖ and ⊕ and Normative

* Positive Science: what was / is, what would be under the conditions.
* Normative Science: what ought to be
distints between good + bad.
helps promote human welfare.

Types: (branches)
1. Microeconomics: individuals, households and firms behaviour in making allocation of resources.
2. Macroeconomics: markets, businesses, consumers, gorernments – analyze.



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Subject : Date:

MACRO	MICRO
* deals as whole	* deals with individual units
* analyzes large scale sys	* analyzes small scale sys.
* national + international level	* local + regional
* government policies (concerns)	* how individuals make decisions + markets operate
* expl: include inflation, economic growth, fiscal and monetary policy, international trade.	* prices, supply, demand, market structure
* GDP, inflation, unemployment interest rates (aggregate economic variables)	* (specific economic units) households, firms, industries.

Formulation of National Economic Policies :

✓ Importance of Micro :

* Market regulation and competition
  - antitrust laws
  - consumer protection
  - ensure fair + efficient market practices
* Resource Allocation of individual / firms
* Business + industry policies
  - profit + taxes
  - Education + govt services
  - market + labor
  - Business + customers
* Labour Market Policies
  - minimum wage laws
  - labor regulations + policies for job training + employment

Subject : _____ Date: [ ][ ][ ]

✓ Importance of Macro : * Economic Stabilities
- adjust interest rates
- govt. spending to manage inflation, unemployment, econo growth.

* Monetary Policy : central banks
- set interest rates
- control money supply
- influence overall econo health

* Fiscal policy : govt decisions on
- taxation
- public spending
- budget deficits

* International Trade
- exchange rates
- balance of payments (shaped)

Different economic systems (3)

① Socialistic : - centrally planned economy
- state ownership
- production owned + regulated by state
- public welfare
- russia, china, north korea

② Capitalistic :
- free market (govt. excluded)
- private ownership.
- state ownership limited
- no govt control

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- private welfare
- UK, canada, Hong kong, Singapore, Australia, Switzerland.

Mixed : - capitalism + socialism
- both private + state ownership.
- freedom of econo activities + govt interference
- BD, Pak, India, Iceland

Subject: ECONOMICS

Date: 6 | 11 | 2023

*Concept of Demand : - Desire for a good
- Ability to purchase the good
- Willingness to buy the good.

*Want for a good backed by purchasing power and willingness to purchase is called demand.

*Demand for a commodity — amount of it that a consumer will purchase or will be ready to take off from the market — at a given price — period of time

Factors affect Demand :

* price of the good under concern
* Income of the consumer
* Taste of the consumer
* Price of substitute and complementary goods
* exception regarding future price + income

Law of Demand : functional relation between quantity demanded of a good and its price = inverse

CETERIS PARIBUS : price of commodity falls → quantity demand ↑ rises [vice versa] $P \propto \frac{1}{Q}$

Demand fn : $Q_d^x = f(P_x, Y, T, P_s, P_c, E, \ldots \text{others})$.

Q_d^x = Quantity demanded of good x

P_x = price

Y = consumer's income

T = " taste

P_s = price of substitute good

P_c = " " complementary good

E = Expectation regarding future price + incom.

f = function relation expression.

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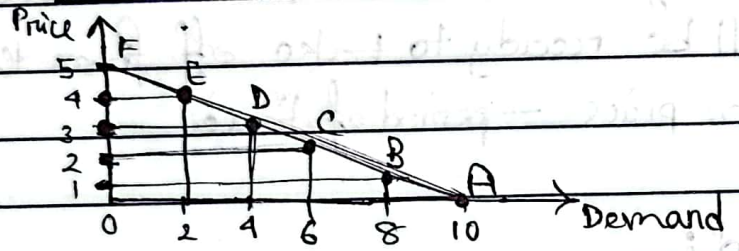
Subject : Date:

Demand Equation : $Q_d^x = a - bP_x$ (intercept/cons. term; slope of demand curve $= \frac{dQ_d^x}{dP_x}$)

$\Rightarrow Q_d^x = f(P_x)$; $\frac{dQ_d^x}{dP_x} < 0$

Demand Schedule : let, $Q_x = 10 - 2P_x$

Combination	A	B	C	D	E	F
P_x	0	1	2	3	4	5
Q_x	10	8	6	4	2	0



Supply : Quantity of commodity which the seller are willing to offer for sale at different prices during a specific period of time.

Stock : Total volume of a commodity which is present in hoarded form and can be brought into the market for sale at short notice

Determinats of Supply :
- prices of factors of prod
- price of related goods
- Technology
- seller expectations
- natural events
- govt. policy

Law of supply : price of commodity rises quantity supply rises

Supply fn : $Q_s^Y = f(P_Y, P_R, P_I, T, W, G, \ldots \text{others})$

Q_s^Y = quantity supply of good Y.

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Subject: _____ Date: ☐☐☐

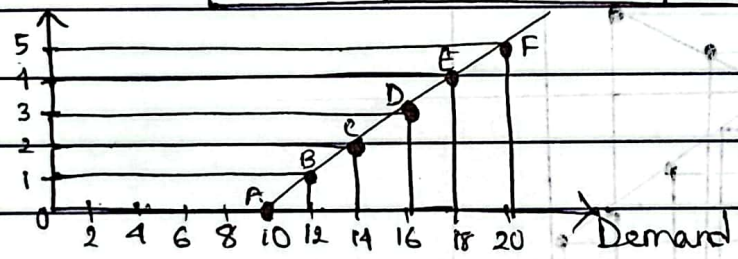
P_Y = price of good Y P_R = Price of related goods.
P_I = price of inputs ($I = 1, 2, 3 \ldots n$).
T = state of technology.
W = Condition of weather G = govt. policy like tax, subsidy etc.

Supply Equation: $Q_S^Y = C + dP_Y$

$\Rightarrow Q_S^Y = f(P_Y)$ and $\frac{\partial Q_S^Y}{\partial P_Y} > 0$

Supply schedule: $Q_Y = 10 + 2P_Y$.

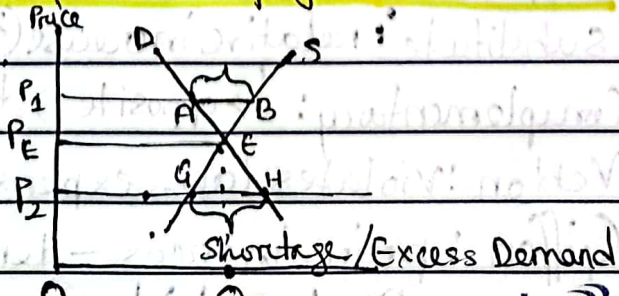
combinat	A	B	C	D	E	F
P_Y	0	1	2	3	4	5
Q_Y	10	12	14	16	18	20



Market Equilibrium: aequus = equality ; libra = stability

→ two opposing forces are equal + stability attained

refers to a condition where a price is established through competition between buyers and sellers such that the amount of goods or services sought by the buyers is exactly equal to the amount of goods or services supplied by the sellers.



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Subject : Date:

Example:

$Q_D = 20 - 2P$ demand fn

$Q_S = -10 + 3P$ supply "

As per market equilibrium, $Q_D = Q_S$,

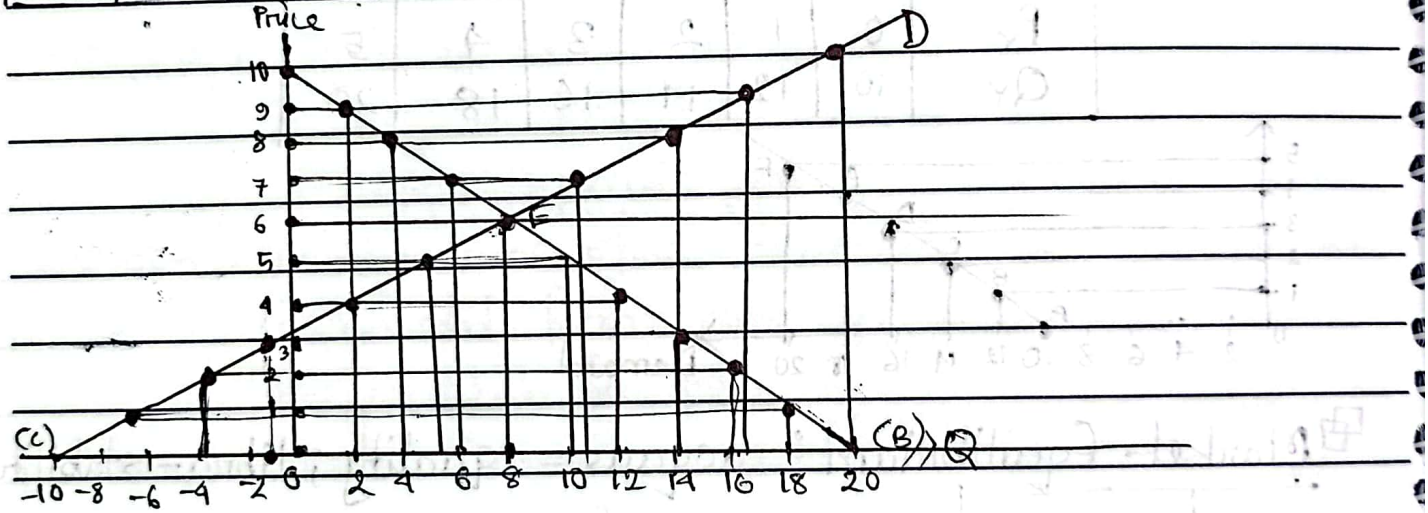
$\Rightarrow 20 - 2P = -10 + 3P$

$\Rightarrow 5P = 30 \quad ; P = 6.$

So, $Q_D = 20 - (2.6) = 8$

$Q_S = -10 + (3.6) = 8$

P	0	1	2	3	4	5	6	7	8	9	10
Q_D	20	18	16	14	12	10	8*	6	4	2	0
Q_S	-10	-7	-4	-1	2	5	8*	11	14	17	20



Diff Types of goods:

1. Necessary : Food, regular clothing [but regardless of chng]
2. luxury : luxury car, watches, designer clothes
3. Normal : [demand $\overset{\text{rise}}{=}$ consumer income rise] food, clothes
4. Inferior : demand falls = " " "] rice, fish
5. substitute : relative increase (দাম বাড়লে খাওয়ার বাড়ে) pepsi coke, tea coffee
6. Complementary : ↳ opposite ; bread-butter; tea, - sugar
7. Veblen : violates law., expensive ; diamond., BMW car
8. Giffen : price increas - demand increase - law violated. meat - chicken.

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Subject: ECONOMICS   Date:

Theory Consumer Behaviour:

Utility: Want satisfying power of a commodity.
Ability of a good to satisfy a want.
Capability of satisfying human wants.

Cardinal	Ordinal
- Consumers satisfaction can be represented numerically	- cannot be repesented in numerical units
- Quantitative	- Qualitative
- less realistic	- more realistic
- Utils (measured)	- ranks
- Marginal Utility	- Indifference curve
- Classical/Neo classical economists	- Modern economist

Marginal Utility:

⇒ $MU_n = TU_n - TU_{n-1}$ → TU_{n-1}: Total Utility from n-1 unit; TU_n: total Utility from n units

or $MU = (\Delta TU / \Delta Q)$

Law of Diminishing Marginal Utility:
Though with increase in consumption units total utility increases but it INCREASES AT A DECREASING RATE.

ADDITIONAL Benefit – যেটা হচ্ছে তার stock increase-এর জন্য পাচ্ছে – DIMINISHES WITH EVERY INCREASE in the stock যেটা তার already আছে

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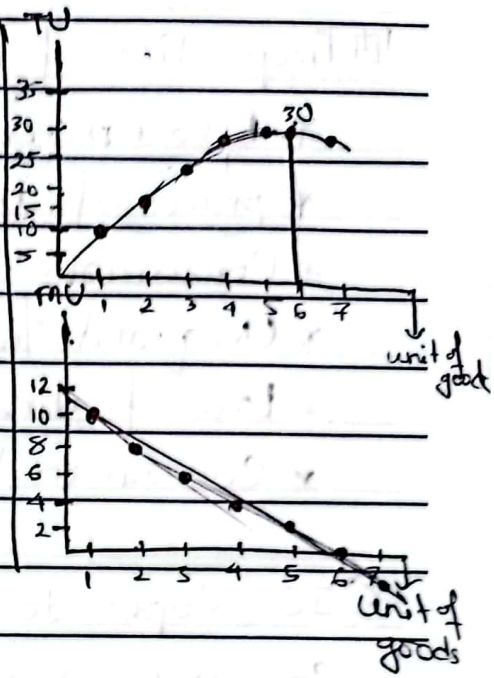
Utility Schedule:

No. of Apple	TU	MU
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	28	-2



Indifference Curve Analysis:

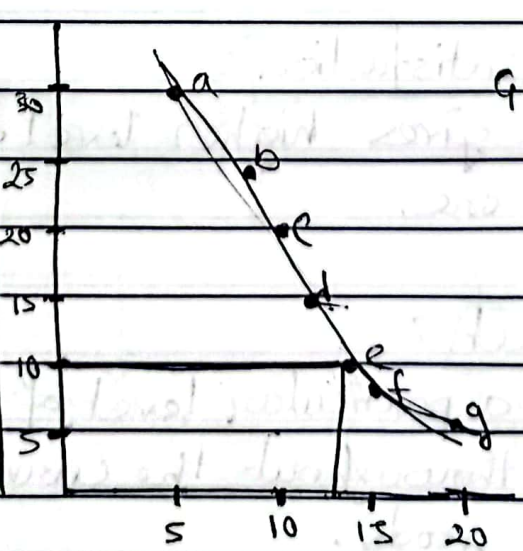
Locus of all COMBINATIONS OF TWO GOODS which yield SOME LEVEL OF SATISFACTION to a consumer.

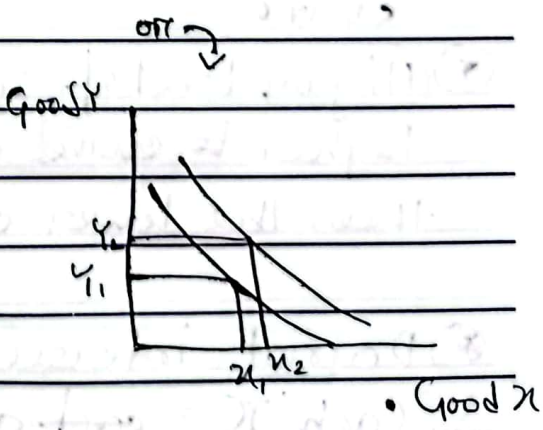
*** Any combination of goods on an indiff. curve gives equal level of satisfaction the consumer is indiff. to any combination he consumes.

So it is also called equal satisfaction curve or Iso utility curve.

Graph:

	PEARS	ORanges
a	30	6
b	24	7
c	20	8
d	14	10
e	10	13
f	8	15
g	6	20





Subject : _____ Date: ☐☐☐

Properties of Indifference Curve.

* Fixed money → all spent only on 2 goods.
* prices of both good → constant
* Consumers tends to move higher IC (always)
* Unquantifiable - expressed in ranks.
* Law of diminishing rate of substitution.
* Consumer behaves rationally.

⊛ IC slopes downwards to right:

Consumers wants more of a commodity - give up some of the other commodities, consumers remains on the same level of utility at constant income.

⊛ Convex to origin:

As it allows combination of 2 goods - one good gains less utility over another - there marginal rate of substitution diminishes. - it is strictly convex as the ~~curve~~ consumer moves along the curve.

⊛ Higher level of satisfaction:

higher IC. curve gives higher level of satisfaction than the lower one.

⊛ Do not intersect:

Each IC = ~~each~~ a particular level of satisfaction. remains same throughout the curve for different combo of the 2 goods.
So they can not intersect.

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Consumer's Equilibrium : - amount of goods and services which the consumer may buy in the market given his income + prices of goods in market.

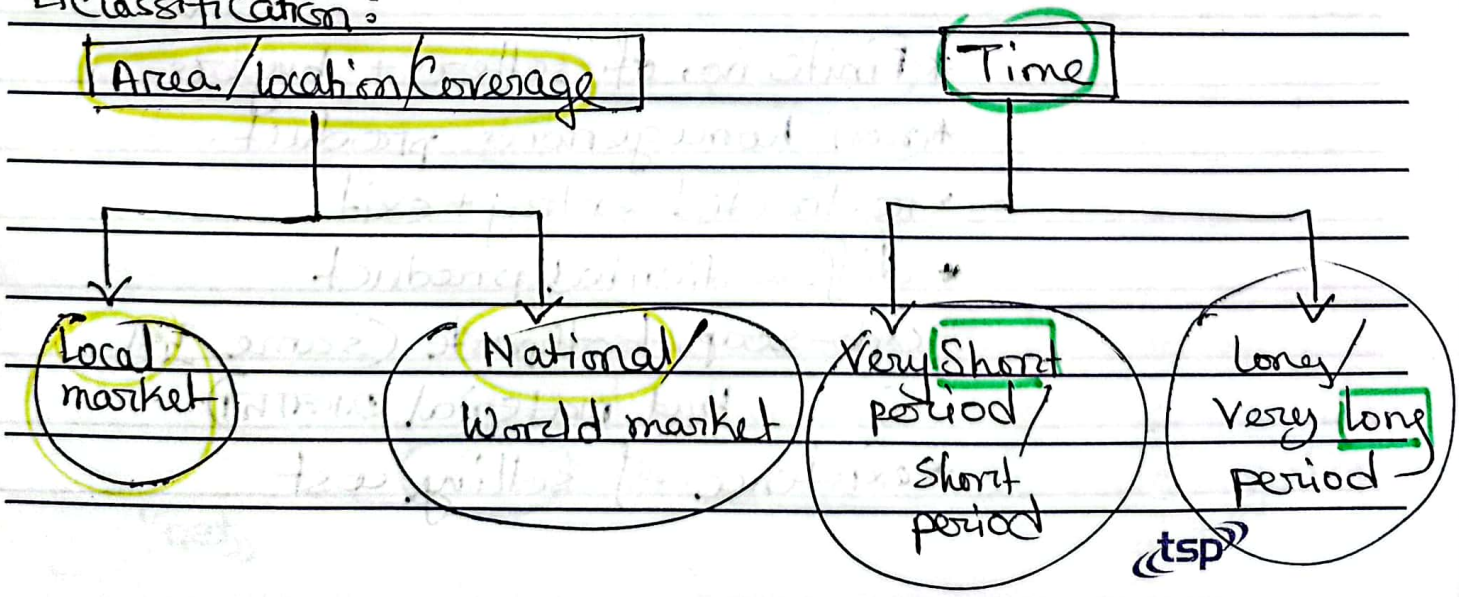
Market :-

- a place where good are PURCHASED.
- Seller - Buyers INTERACT
- (Benham) seller-buyers directly or by dealers in close contact. ↓
  prices in one part affects in other part
  (obtained) (paid)

Features of Market :-

* commodity exists
* buyers + sellers "
* place (must exist) – region / country / entire world.
* Only 1 price for the same commodity at the same time
* Intensity of competition.

Classification :



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Most important* **nature / degree of Competition**

Perfectly competitive

* large buyers/sellers
* Homogeneous product
* definite price at definite time (fixed)
* easy entry + exit (ইচ্ছা করলেই এসে ব্যবসা শুরু করতে পারলে তাইলেই বন্ধ)
* perfect knowledge abt market conditions
* No selling cost known.
* Price taker not maker (supply-demand wise price set করা - seller নিজে বানায় বলতে পারবে না) →
  যেকোনো একজন দাম change করলেই পুরা market affected হয়ে যায়
* এমন market নাই - cause seller-দের সব info দেওয়া হয় না always. কেন

Imperfectly competitive

* Finite no. of sellers + buyers
* non-homogeneous product.
* restricted entry + exit.
* differentianted product
  eg- soap, toothpaste (same দ্রব্য but material আলাদা).
* existence of selling cost

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Subject : _____ Date: ☐☐☐

Imperfectly comp. market

no. of sellers ↓

- Monopoly (1 seller)
- Duopoly (2 ″)
- Oligopoly (a few countable)
- Monopolistic (large no. of sellers not numerically)

no. of buyers ↓

- Monopsony (1)
- Duopsony (2)
- Oligopsony (a few)
- Monopsonistic (Large)

Features:

Monopoly:
* single seller - large buyers.
* no close substitute
* Full control over price + supply
Exple - WASA, BD Railway, DESCO, Titas gas.
* unique product.
* restricted entry.
* price makers (sellers).
* price discrimination.

Duopoly: US/BD airlines — 2 ৳ dominating sellers
one's actions effects it's rivals behaviour.

Monopolistic: (monopoly + perfect competition)
* Large sellers + buyers.
* non-homogenous (nature same - materials different)
* no barriers to entry + exit.
* advertisement important
* non-price competition (price maker - no competition (no fear of loosing customer)
* lack of perfect knowledge

Exple: restaurant, barber, Hotels + Pubs, clothing shop

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Oligopoly : * interdependent firms
* a few firms. (so small that every seller is affected by others activity.)
* barriers to entry
* conflicting attitudes
* intense competition
* group behavior
* price rigidity
* huge capital investment

- bkash
- Banking industry
- food oil; automobile
- Telecommunication

Monopsony : (Bd তে নাই) * 1 buyer
* seller-দের bargaining power low
expl: * sugar factory - একটাই থাকে সব seller সেখানেই যায়

Oligopsony: * few buyers – many sellers (small but large buyers)
* sellers face few alternatives
* industry has significant barriers to entry
expl: Mcdonald's, KFC etc buy meat from american ranchers

~~Dyopsony~~ : * 2.

Duopsony : * 2 large buyers
* influential at bargaining.
expl → a town having {2 restaurants — hires huge} workers.

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Subject: ECONOMICS — ELASTICITY — Date:

ratio of (% Δ dependent var / % Δ independent var)

Responsiveness of dependent variable to changes in independent variables (অন্য factors যেমন- price, income etc- এর জন্য demand ↑/supply ↓ হলে affects)

(Types) → Elasticity of demand; Elasticity of supply

Slope	VS	Elasticity
① abs change in demand owing to abs change in own price		① (of demand) % Δ demand owing to % Δ own price; (of supply) % Δ supply owing to % Δ own price
② unit Δ price = 2 unit Δ demand		② 1% Δ price = 3% Δ demand
③ const at all points on the curve		③ variable

Formula: Price elasticity of DEMAND

→ degree of responsiveness of quantity demanded of a good to Δ price when other factors like income, related goods that determin demand are constant.

$$E_p = \frac{\%\,\Delta Q}{\%\,\Delta P} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

Classification:

IF $E_p > 1$; ELASTIC ; $(\%\Delta Q > \%\Delta P)$

ELSE if $E_p < 1$; INELASTIC ; $(\%\Delta Q < \%\Delta P)$

IF $E_p = 0$; PERFECTLY INELASTIC/ZERO ELASTICITY ; $(\Delta Q = 0)$
price has no effect on demand

IF $E_p = \infty$; PERFECTLY ELASTIC ; অসীম demand

IF $E_p = 1$; UNITARY ELASTICITY ; $(\Delta Q = \Delta P)$
unit elasticity of demand

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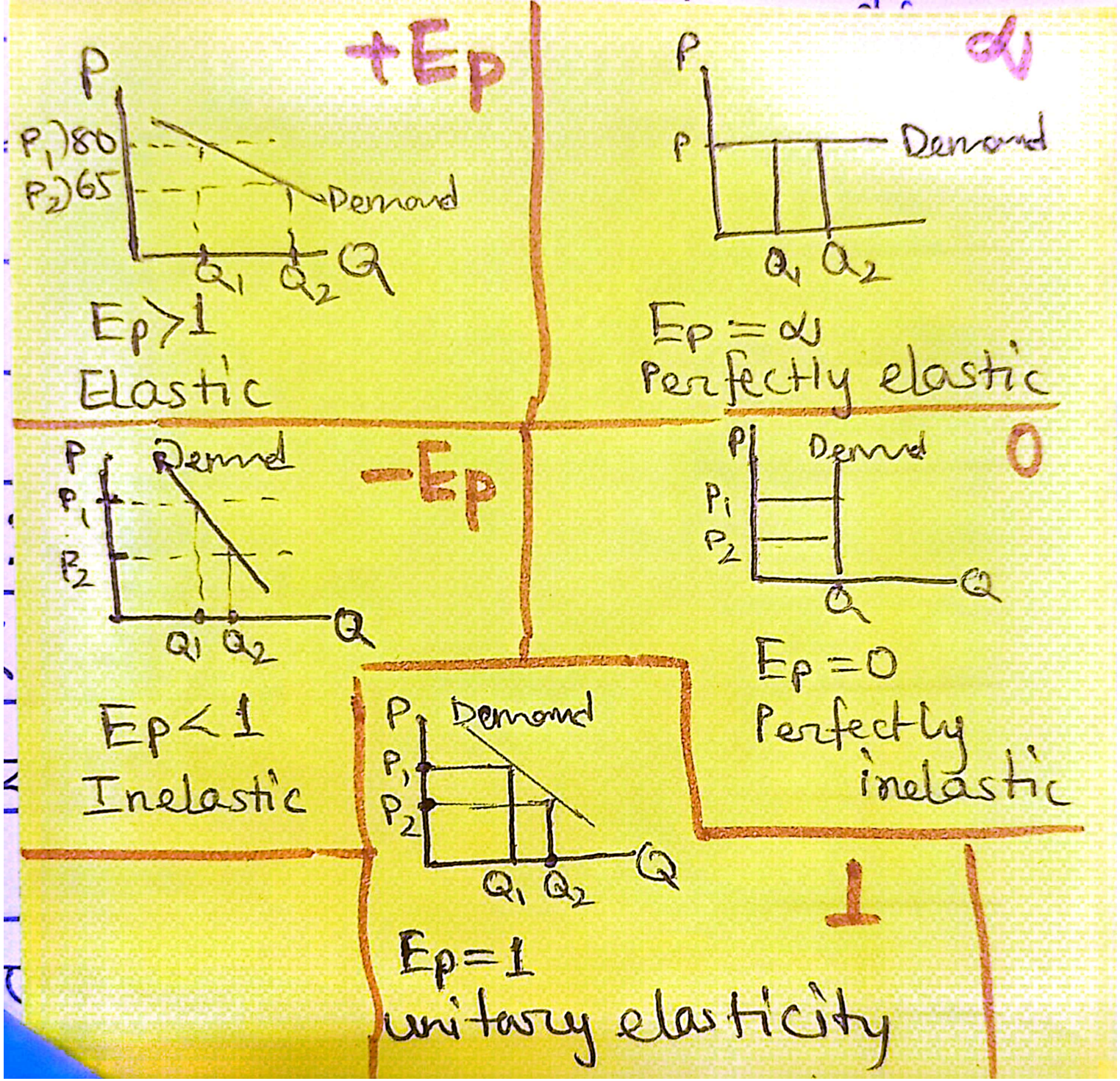

+Ep
P
P1)80
P2)65
Demand
Q1 Q2 Q
Ep>1
Elastic
∞
P
P
Demand
Q1 Q2
Ep = ∞
Perfectly elastic
-Ep
P
Demnd
P1
P2
Q1 Q2 Q
Ep<1
Inelastic
0
P
Demnd
P1
P2
Q1 Q
Q
Ep=0
Perfectly
inelastic
P
Demand
P1
P2
Q1 Q2 Q
1
Ep=1
unitary elasticity

Subject: Date:

✱ Income elasticity of demand:

$$E_Y = \frac{\%\,\Delta Q}{\%\,\Delta Y} = \frac{\Delta Q}{Q} \times \frac{Y}{\Delta Y}$$

✱ Cross elasticity of demand: degree of responsiveness of quantity demanded of a good to price of a related good when other prices, income etc are const.

$$E_c = \frac{\%\,\Delta Q_x}{\%\,\Delta P_y} = \frac{\Delta Q_x}{Q_x} \times \frac{P_y}{\Delta P_y}$$

+ $E_c > 0$; substitute goods (same goods)

− $E_c < 0$; complementary goods (not same)

✱ Price elasticity of Supply:

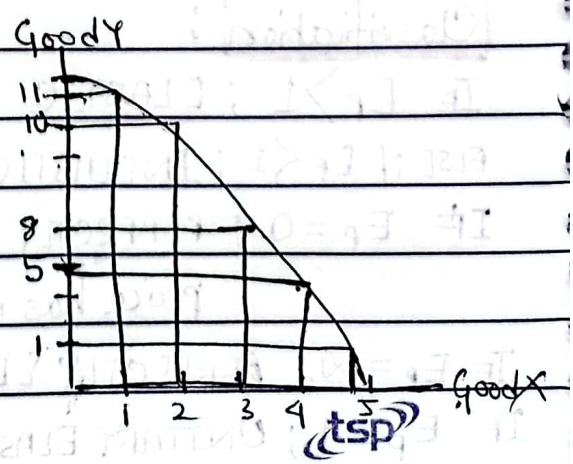
$$E_S = \frac{\%\,\Delta Q}{\%\,\Delta P} = \frac{\Delta Q . P}{\Delta P . Q}$$

Concept of Scarcity leads to → CONCEPT OF OPPORTUNITY COST

- Value of the best opportunity forgone.
- Value of next-best alternative thing you may have done instead

[টাকা খরচ করে movie দেখতে গেছি — এই সময়টা হয়তো বাসায় বসে বই পড়তে পারতাম — টাকা ও বাঁচত সময় ও অন্য ভাবে utilize হতো]

✱ Increasing Opportunity Cost :- increase in production of one goods will lead to increased sacrifices (reduction of prod) in other good (represented by ~~pro~~ PPF/PPC - Production Possibility Frontier/Curve)



✱ PRODUCTION: process of creation of utility or process where goods/service is take as inputs to transform at output.

Subject: Factors of production

Date:

means of production / productive resource used interchangeably to mean factors participating in production process.

[LAND, LABOUR, CAPITAL]

Production function: math expression to show interrelationship btwn quantity of prods - that can be produced per unit time - alternative inputs at best production technique

$Q = f(x_1, x_2, x_3 \ldots\ldots x_n)$

(Q: quantity of good, inputs)

① **Short run**: at least 1 or more inputs const.

$Q = f(x_1, x_2, \bar{x}_3 \ldots x_n)$ [$\bar{x}_3$ const]

② **Long run**: all inputs are variable

$Q = f(x_1, x_2, x_3 \ldots\ldots x_n)$.

TOTAL PRODUCT: holding all inputs const except the refered input.

TP of x_1 $[TP_{x_1} = Q = f(x_1, \bar{x}_2, \bar{x}_3 \ldots\ldots \bar{x}_n)]$

AVERAGE PRODUCT: AP of x_1 is average production by one unit of x_1 when other inputs are const.

AP of x_1 $\left[AP_{x_1} = \frac{TP_{x_1}}{x_1} = \frac{f(x_1, \bar{x}_2, \bar{x}_3 \ldots\ldots \bar{x}_n)}{x_1}\right]$

MARGINAL PRODUCT: Amount of incremental output produced by an additional unit of x_1 when all other inputs are const.

MP of x_1 $\left[MP_{x_1} = \frac{\Delta TP_{x_1}}{\Delta x_1}\right]$ where $\Delta TP_{x_1} \Rightarrow f\{x_1, \bar{x}_2 \ldots \bar{x}_n\} - f\{x_1, \bar{x}_2 \ldots \bar{x}_n\}$

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Subject : _____ Date: ☐☐☐

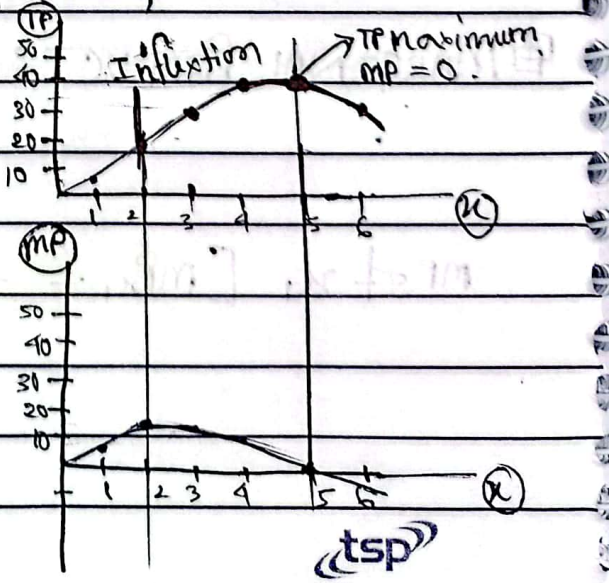
(LVP) LAW OF VARIABLE PROPORTION : restaurant - ১টা oven, dough - ১০ amount same রেখে worker বাড়ায় গিয়ে extra output প্রক্রিয়া করা যাবে !!

Assumption of LVP :

① - operates in short run as both variable and fixed inputs needed.
② - applicable to fixed factors
③ - allows combo of several variable with fixed factors
④ - primarily applicable to production sector
⑤ - simple to calculate change in output due to variable factors
⑥ - after a certain time, factors become imperfect substitute.
⑦ State of technology will remain const
⑧ All variable factors — equally effective

STAGES OF PRODUCTION (Short RUN)

Fixed ($\bar{x}$) (land)	Variable (x) (labour)	TP	MP = $\frac{\Delta TP}{\Delta x}$	AP = $\frac{TP}{x}$	Phase
1	1	5	5	5	(Ph-I) increasing
1	2	20	15 (20-5)	$\frac{20}{2}$ = 10	
1	3	32	(32-20) = 12	$\frac{32}{3}$ = 10.67	(Ph-II) decreasing
1	4	40	(40-32) = 8	10	
1	5	40	(40-40) = 0	8	(Ph-III) negative
1	6	35	(35-40) = -5	5.8	



Point of Inflextion : point in slope where TP starts increasing and MP starts diminishing.

Subject: Reasons for phases. Date:

Short RUN returns to scale:

(Phase-I) INCREASING: ① Effective use of fixed factors – when variable factors increases and combines with ff · increasing output

② Increased efficiency of variable factors combining with ff

③ Fixed factor indivisibility – Fixed factors integrated with variable fact are not divisible or divided into small parts So – more combining of variable components will increase output

(Phase-II) DECREASING:

① Optimum combination of factors – when fixed factors are used at their fullest even tho TP improves or is at maximum, MP starts to decline.

② Over utilization of resources – fixed factors finally reaches its limits and shows returns diminishing outputs as variable factors increases.

③ Imperfect Substitutes At a certain point one factor of production can not be substituted for the other resulting in declining returns.

(Phase-III) Negative returns

① limitation of fixed factor. – in short run fixed factor can not be increased with the increase in variable fact

② Lack of coordination When vf dominate ff they interfere each other Output falls – MP goes negative

③ Decrease in efficiency of vf (variable factors) – benefits + division of labour diminished as vf keeps increasing which causes inefficiency in vf.

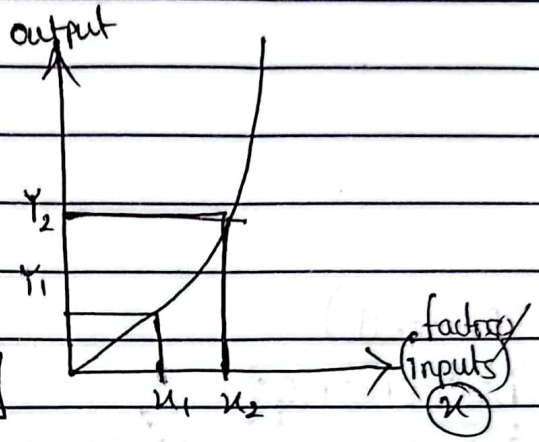
tsp

Subject: Long RUN returns to Scale (All factors variable) Date:

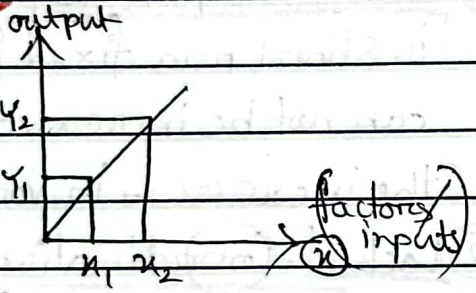
Koutsoyiannis → 'return to scale refers to change in output as all factors chg by the same proportion

3 types:

① Increasing returns to scale
- all factors increased
- output increases at a higher proportional rate
- as in if factors are doubled → output will more faster than doubled [2F = 4-5 output]

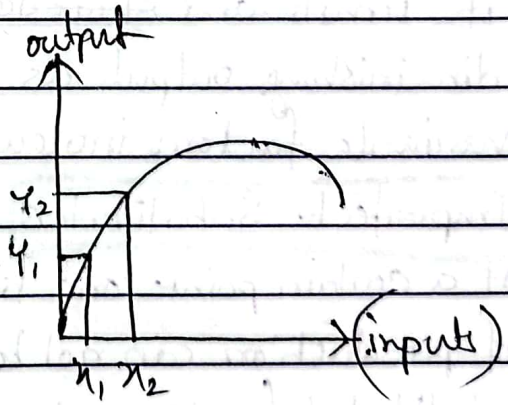


② Constant Returns to scale



Output increases with the same rate of increase in factors.

③ Decreasing returns to scale
- all factors increased while output increases in a smaller rate than them.
- as in if factors increased double, output will increase less than double.



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Subject: COST   Date:

· Total expenditure a firm faces when using economic resources to produce goods and services,

COST FUNCTION — depends on quantity of production
cost increase with output increase

3 Types: ① Total Cost (TC) · sum of all cost
② Average cost (AC) per unit cost
③ Marginal cost (MC) Δ total cost to make one additional unit of output

$TC = TVC + TFC$

total variable cost (raw material-ए खर्च)

total fixed cost (staff-दের salary)

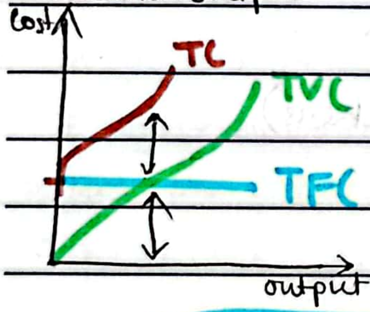
$AC = \frac{TC}{Quantity}$

or, $AC = AFC + AVC$

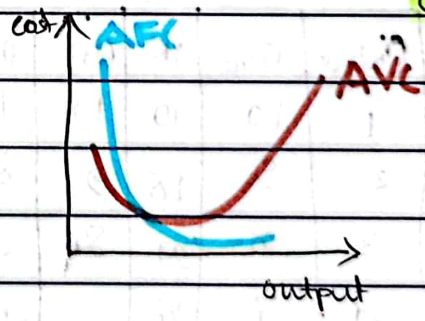
average fixed cost $= \frac{TFC}{Q}$

avergage variable cost $= \frac{AVC}{Q}$

relationship:

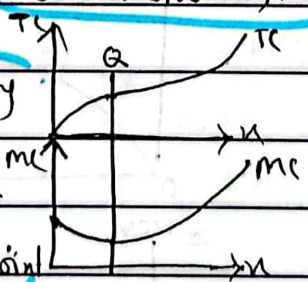


$MC = \frac{\Delta TC}{\Delta Q}$



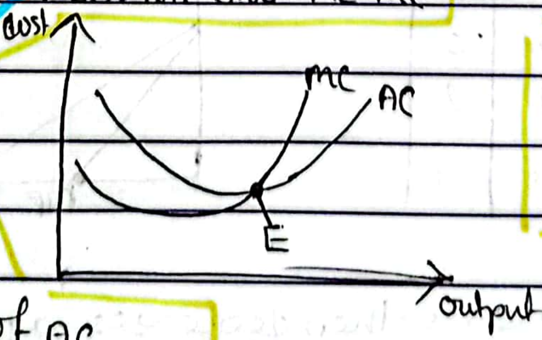
relation btw TC, MC

* before Q, TC increasing at a decreasing rate, MC decreasing.
* at Q, TC increasing at increasing rate, MC ~~increasing~~ lowest point
* after Q, TC keeps incr, MC increasing



relation btw AC MC

* before point E, AC was constly decreasing.
* after E, AC rising
* MC is always to left of AC and cuts at AC's lowest point



AC > MC
AC = MC (at E)
AC < MC

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Subject: Revenue

Date:

- amount received from sale of output
- depends on price per unit of output

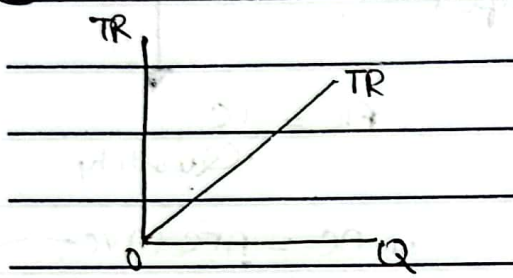
3 Types: ① Total Revenue (TR) = Quantity × Price

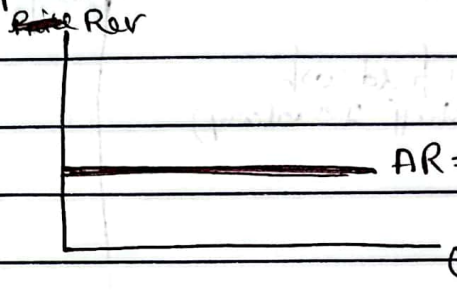
② Average Revenue (AR) = TR/Q (Q = units sold)

③ Marginal Revenue (MR) = $TR_n - TR_{n-1}$

$= \frac{\Delta TR}{\Delta Q}$ [ΔTR – chng in TR, ΔQ – " " unit sold]

✱ Curves in Perfect Competitive Market: (cause price same 2 rev)

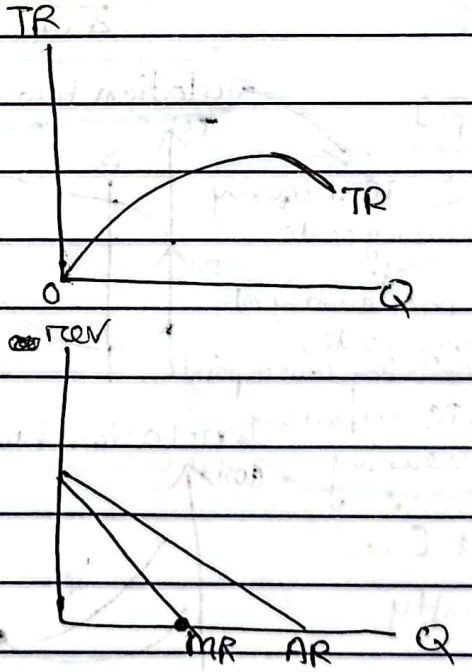




O	P	TR	AR	MR
1	10	10	10	10
2	10	20	10	10
3	10	30	10	10

✱ in Imperfect Competitive Market: (price makers)

Output	Price	TR	AR	MR
1	10	10	10	10
2	9	18	9	8
3	8	24	8	6
4	7	28	7	4
5	6	30	6	2
6	5	30	5	0
7	4	28	4	-2
8	3	24	3	-4



As TR increases then decreases again

MR and AR decreases constantly

MR is the media of the triangle made by AR with the origin.

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Subject: MACRO ECONOMICS → involves aggregate income, consumption, investment, savings etc
Date:
→ concerns = behavior + overall performance

Roots ↓ pre-keynesian era
(believed economy is full employment
money departures for temporarily)
failed resulting in great depression

ग्रंथ 1936 → J Keynes 'The General Theory of Employment, Interest and Money'
for ↓ → (govt. should interfere)

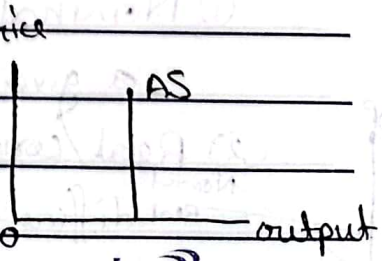
GREAT DEPRESSION: (1929-1930)
* Stock market crashed.
* US GNP fell by 30%.
* 9000 bank - bankruptcy
* survived banks stopped giving loan
* net investment was negative
* large amount of inventories (साठा)
* business stopped production
* unemployment → 3% to 25% rise
* purchasing power declined

Why study macroeconomics?
* understand economy as whole
* indentify economy functioning
* formulate economic policies
* control economic fluctuations
* identified inflation + deflation situation
* study national income
* " economic development
* identify economy performance

AGGREGATE DEMAND: (AD)
Schedule of spending (total) in different sectors in a time period
3 types ① two sector economy → AD = Y = C + I
② 3 " " → AD = Y = C + I + G (G → government expenditure)
③ 4 " " → AD = Y = C + I + G + (X - M)
(GDP/GNP/Total output) Consumption → Investment
Export
Import

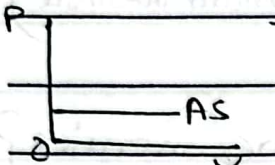
AGGREGATE SUPPLY: (AS)
total amount of goods/services which all firms are willing to produce. (total desired output)

Curves:
① Classical: economy will be always at full employment equilibrium.
AS is vertical.

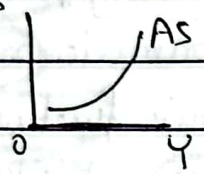


Subject: _____ Date: ☐☐☐

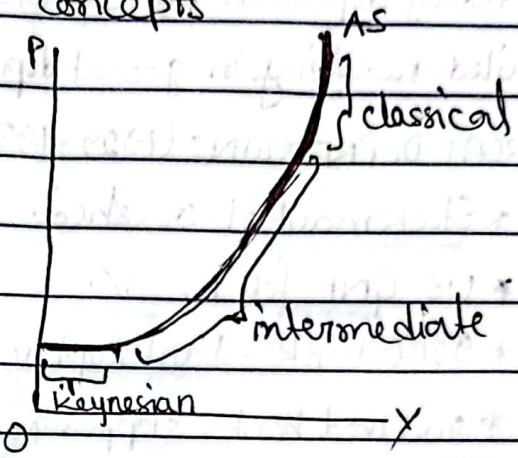
② Keynesian view: in short run due to structural rigidities AS is same not increasing



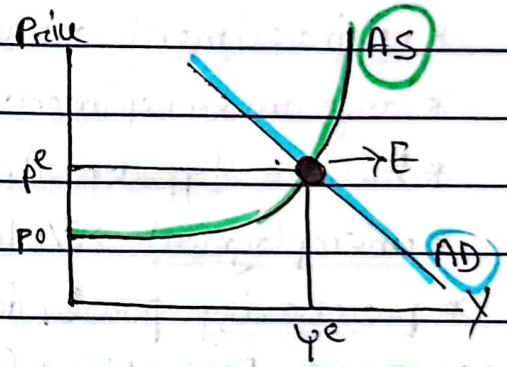
In reality neither full employment nor short run supply rigidities are common, so AS = upward slope



③ Generalized view: Combines the three concepts



Macroeconomic equilibrium: Interaction of AD and AS leads to determination of total output and price level.



Key variables / Concepts of Macro:

① Total output of goods / services of an economy (Y)

Growth rate → $\left(\frac{\Delta Y}{Y} * 100\right)$

(*) GDP (Gross Domestic Product) total output within in the geographical territory in a period of time (usually 1 year)

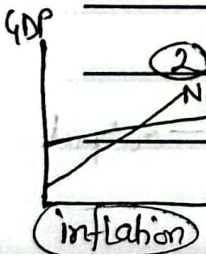
(*) GNP (Gross National Prod) (basic measure of economic activity) total output of nationals.

GDP/GNP

→ Represented as:

① Nominal/Current-price: measure value of output in a given time in the prices of THAT PERIOD

② Real/constant-price: measures changes in output btwn different time periods by valuing all goods of 2 periods at the base year prices.



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Subject : _____ Date: ☐☐☐

② Price level and rate of change of price level $\left(\frac{\Delta P}{P} \times 100\right)$

- if rate of change of price level is positive - called inflation.
  when negative it is called - deflative

To explain growth btw nominal and real GNP - inflation is used.

Inflation - মূল্য স্ফীতি Nominal (কাগুজে মান)

GDP/GNP deflator → shows how on avg; prices for all goods change over time. (estimates rate of inflation)

$$\text{GDP/GNP deflator} = \frac{\text{Nominal GDP/GNP}}{\text{real GDP/GNP}} \times 100.$$

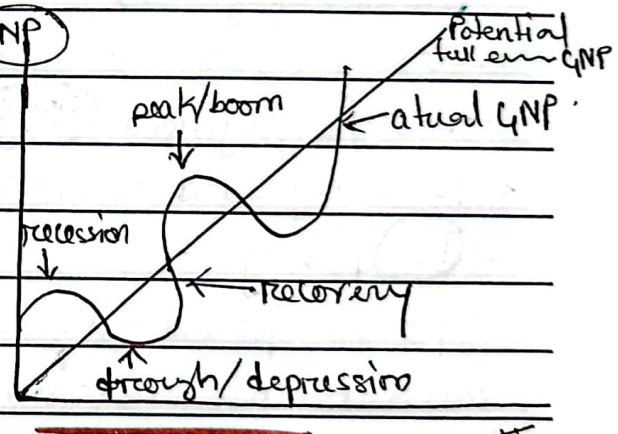
③ Unemployment/employment status + rate :

$$\text{Rate} = \frac{\text{unemployed}}{\text{employed} + \text{unemployed}}$$

④ Business Cycle :

Gross output fluctuates around trendline in a cyclic pattern →

Trough → recovery → peak → recession → trough



Expansion :

* desirable state
* steady growth
* unemployment low
* stock market performs ok

Peak :

* economy out of control.
* expands recklessly
* Investing out of control (buy assets. etc) significantly increasing prices.

Contraction :

* peak → trough
* economic activity on way to down
* unemployment starts

Trough :

* higher unemployment
* decline production, sales, profit
* decline in economic growth

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Subject : _____ Date: ☐☐☐

⑤ Stabilization Policy : to moderate fluctuations in rates of growth, inflation and unemployment.

→ MONETARY POLICY (deals with money stock, prevailing rate of interest and charges)

→ FISCAL POLICY (deals with govt. expenditure, transfer payment, tax, subsidy, public debt, govt. budget etc)

Instruments

Fiscal Policy

* Govt. spending : recession – ↑ increase in govt. spending help counteract weak investment and low consumption

* transfer payment : recession period – govt increases transfer payments (जाता)
expansion period – ↓ (घटा)

* Tax policy :
expansion period – increases tax
recision " – lessen "

Monetary Policy

* Bank rate/discount rate
rate at which RB lends to CB
When bank rate is high CB charges more for interest and public take less loans.
Current bank rate 8.0%

* Cash Reserve Ratio (CRR) :
Bank deposits that banks are required to keep with RB.
High CRR → lower liquidity.
Current CRR is 4%.

* Statutory Liquidity Ratio :
% of deposits banks need to keep in form of liquid assets (govt. securities, treasury bills etc)
Current SLR is 13%.

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Subject : _____ Date: ☐☐☐

* **Open market Operations**: sale + purchase of securities in open market by central bank on behalf of govt.
which means → bank controls the flow of credit
when securities are purchased by central bank — they make payment to ~~CB and~~ Commercial bank and public:
So, they have more money — increases money supply.
expands credit in economy.

* **Exchange rate**: at which one currency will be exchanged for another currency.

Devaluation → deliberate downward adjustment of countrys currency against another currency

Evaluation → deliberate upward adjustment.....

TYPES

FISCAL

Expansionary (use of govt spending transfer paymt, tax to stimulate higher level of economic activity, high output low unemployment)

Contractionary (reductions in govt. spendiy etc)

MONETARY

Expansionary (expand money supply and ~~keeping~~ boost economic activity by keeping interest rates low. Central bank lowers bank rate, increase govt security purchase, reduce reserve requirement)

Contractionary (reduce govt. spending/rate of expansion by central bank to combat rising inflation. Central bank raises interest rates, increase reserve requirement sell govt securities)

Subject: National Income Accounting

Date:

- Summary of all economic activities within a country's territory or participated by nationals within a given time.
- INTERRELATIONship btwn Macroeconomics 3 variables → Output, Income, Spending

4 methods to measure GNP:

① Product method: number of goods → $Q_i(n_1, n_2 \ldots n_n)$
their prices → $P_i(p_1, p_2 \ldots p_n)$

$GNP = (P_1Q_1 + P_2Q_2 + \ldots + P_nQ_n)$

or, $GNP = \sum_{i=1}^{n} (P_iQ_i)$

② Income method: Summation of all incomes.

GNP = Total wage + Σ rental income + Σ Interest income + Σ profit income.

③ Expenditure method: take all consumptions, investment, government expenditure, export, import

$GNP = C + I$ [2-sectors]

$GNP = C + I + G$ [3-sectors]

$GNP = C + I + G + (X - M)$ [4-sectors]

④ Value added method: calculating final goods and services but excluding all intermediate goods " ".

Exple - wheat is sold at 20Tk ; GNP = 20.

Flour is produced from wheat at Tk30 ; GNP = 30 - 20 = 10

Bread " " " " " Tk 40 ; GNP = 40 - 30 = 10

Total GNP = (20 + 10 + 10) = 40Tk.

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Subject: _____ Date: ☐☐☐

(*) GDP (Gross Domestic Product)

GDP = C + I + G + (x − m)

[within the territory]

(*) GNP (Gross National Product)

GNP = GDP + income (nationals inside + outside country) − income of foreigners.

Depreciation cost (DC) / Capital Consumption allowance (CCA): wear + tear on the existing capital stock → part of GNP to maintain productive capacity of economy

(*) NNP (Net National Product)

NNP = GNP − (DC/CCA).

National Income (NI) = NNP − indirect tax

wages/salaries, proprietors income, rental income, corporate income, net interest

Direct- / Indirect taxes

earned income (income tax, holding tax)

goods/services at the production or final sale level (sales tax).

Transfer Payments (হস্তান্তর): do not arise out of current productivity capacity → pensions, welfare, old-age, invalidity, unemployment etc.

(*) Personal Income (PI) = NI − corporate profits − social insurance + govt./business transfers + interest adjustment + dividends.

(*) Disposable Personal Income (DPI)

DPI = PI − Personal tax & non tax payments.

DPI = Personal outlays • (personal consumption + interest paid by consumers/transfer to foreigners) + personal savings.

Is GNP and NI same thing? NO; But → with newly installed machineries and equipment where there's no govt. intervention (like tax) where DC and indirect taxes are Nil; GNP = NI. So complicated estimation of DC and inaccurate indirect taxes lead economists to use GNP as NI and alternative.

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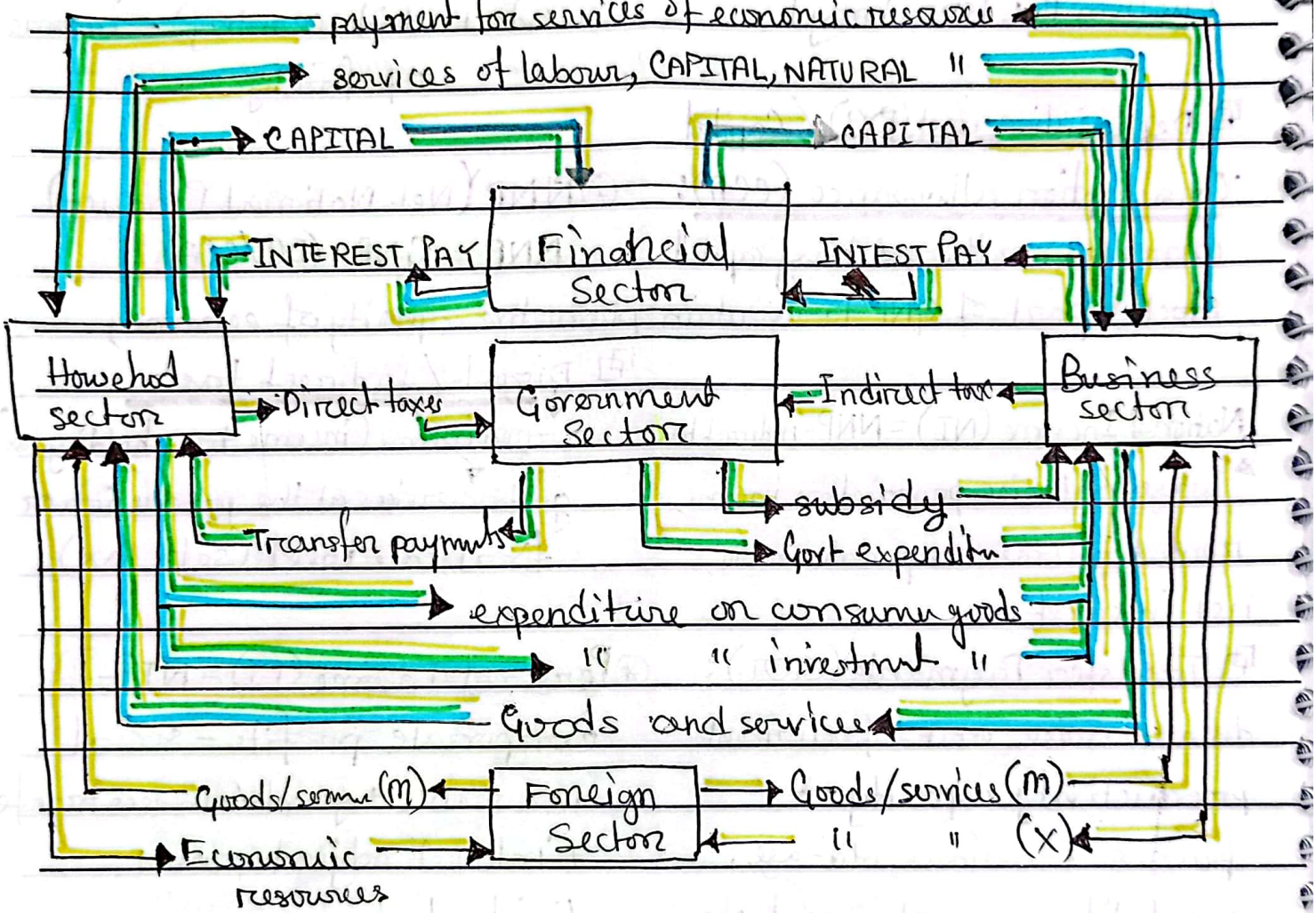
Subject: Measuring output in open economy. Date:

blue – 2 sector yellow – 4 sector
Gree – 3 "



Double counting: GNP is the value of final goods with no double counting. As in when bread is produced that is the final product – not wheat (intermediate product) তাই bread – টা শুধু count করব just wheat টা না।

Investment: value that takes form of new structures or producers durable equipments or change in inventories. নতুন bond/land/equipment কিনা – পুরানোগুলোর count করব না

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Subject: _____ Date: ☐☐☐

DC/ECA-তেও In এ নিবে

Gross investment (I_g):
যাতে নতুন-পুরাতন both count করবে - (old new replacements)
তাই তো $GNP = C + I_g + G + (X - M)$

Net investment (I_n):
additions to economy's holding/capital
$GNP - NNP = (C + I_g + G + (X-M)) - (C + I_n + G + (X-M))$.
$= I_g - I_n = DC/ECA$.

Leakage/WITHDRAWAL:
variables that reduce circuit flow of income.
expl:- savings, govt. tax, import cost etc.

Injection: spending added from outside to the circuit flow of income.
(investments, increase in govt. expenditure, exports earnings)

Unemployed Workers — currently not working
- but willing to + able to work
- available to work.
- actively searched for work.

unemployment rate: proportion of labour willing to work at the ruling wage rate but is unable to get job

maths → $U = \frac{\bar{L} - L}{\bar{L}} \times 100$. L = labour force in work
$\bar{L}$ = full empl^nt labour force.

$= \frac{\text{unemployed}}{\text{unemployed + employed}} \times 100$.

Types:
1. Voluntary & involuntary
2. Classical
3. Cyclical
4. Structural / Technological
5. Seasonal
6. Frictional
7. Hidden / Disguised

Inflation: too many money - too few goods
- increas in price level
- fall in value of money
- purchasing power + money goes downward.

rate of inflation $= \left(\frac{P_t - P_{t-1}}{P_{t-1}}\right) \times 100$

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Subject: Types/Cause of Inflation

Date:

DEMAND PULL: Demand is more than supply = push price up

COST PUSH: Due to increase in cost of wages + raw material
- overall price level go up.
- happens due to higher production cost decrease
- Aggregate supply.
  - leads to fewer goods - price বাড়ায় দেয়

HYPERINFLATION: wild price increment, rarely happends, occured 55 times in 20th cen. in → CHINA, GERMANY, RUSSIA, HUNGARY + ARGENTINA

DEFLATION: fall of inflation below 0% ; decline in prices. purchasing power high similar to price deflation.

MONEY

- medium of exchange
- anything that is generally acceptable as means of exchange
- acts as measure + store of value

FUNCTIONS:
1. Medium of exchange
2. Measure of value
3. Store of value

WHY HOLD MONEY?

Transaction Demand:
1. pay day to day expense
2. quick and easy purchase
3. suffer "cost of holding"

PRECAUTIONARY Demand:
1. for uncertain expenses
2. not interested in taking loans
3. Opportunity cost of interest rate forego.

SPECULATIVE Demand:
1. expected rise in interest rate
2. convert money into interest bearing instruments - bonds, stocks, non-money financial assets
3. people hold more when interest rate is low hold less when rate is high.

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Subject: International Trade Date:

Trade btwn 2 or more countries.

Aims:
① to increase production
② raise standard of living.
helps a nation to consume other nations products

Types:
① Import: Inflow (অন্য দেশ থেকে এদেশে আনা)
② Export: Outflow (রপ্তানি)
③ Entrepot Trade.: goods are imported to reexport after processing operations.

BALANCE OF TRADE (BOT)

Diff btw exports and imports of a country
More imports = Trade deficit (-)bot
less " = trade surplus (+)bot
BOT = exports − imports

BALANCE OF PAYMENT (BOP)

Statement of all transactions of a country with rest of the world in a definite period
2 categories:
① Current account: marks inflow and outflow
② Capital account: all international Capital transfer records.

Trade Barriers

- restrictions on international trade
- to protect domestic industry, INFANT industry, consumers, cultures, revenue generation, national security, developing economics.

Types:
① Tariff: Tax — to raise the relative price of imported products compared to domestic ones.

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Subject : _____ Date: ☐☐☐

② Import Quotas : restriction on the amount of goods that can be imported

③ Licenses : granting certain companies to allow import certain type of goods
exple - imported cheese is not allowed but govt can grant license to selected companies.

④ (VER) Voluntary Export Restraints : Created by exporting country.

Trade Policy for Bd :
① Liberalization (removes barriers sometimes).
② Rationalization of tariffs to strengthen competitiveness of domestic industries
③ Expand and diversify exports
④ Promote investment
⑤ Create employment

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