C.W.

07-09-19

ECON1211: Economics (অর্থনীতি)

balance bet^w unlimited want with limited resource / supply

Study of human behaviour, culture, strategy.

Nature: Science,

Market analysis

Positive What it is

Normati. What ought to be

Personal - micro, class - macro.

class - micro, country - macro.

inflation - value of money decrease.

4 basic law of Economic -

1. All money value is created through and backed by the production of commodities trades, goods & services

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2. Producer will get all the money. ~~(there will be no middle man).~~ by selling product goods & services. There will be no middle man.

3. All production must be marketed on an Open Market (open to all on equal terms, absolutely no exception).

4. The money supply must be held constant with no exception. A constant money supply standardizes the Economic System.

Vanijuala, Zimbabua

Jahangir Palas
01671152767

Price of egg, milk, meat

For Engineers

Economics

Why ~~Engineering~~ useful " " ?

⇒ It allows them to make strategic decisions for companies.

Engineering economics involves formulating, estimating, and evaluating the economic outcomes of alternatives to accomplish a defined purpose are available.

What is Economics?

⇒ It is one of the social science. It explains about the economic activities of a individual i.e, any activity which is related to earning and spending of the money, almost every individual human being are engaged in the economic activity

SEMT

C.W.

14.09.19

Demand & Supply

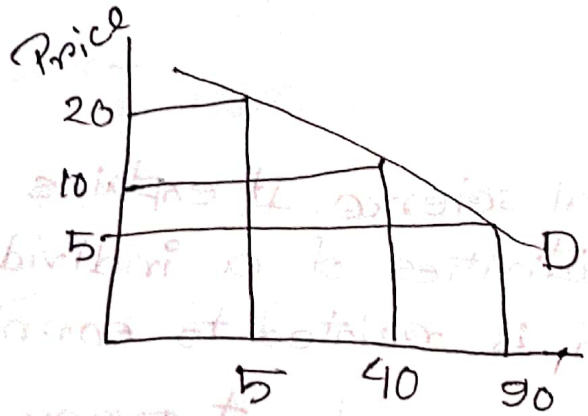
Demand : 1) Depends on price.

2) Tendency to pay for it.

3) Time period of demand.

$$\text{Demand} \propto \frac{1}{\text{price}}$$

Price ↑ demand ↓



Here,
horizontal ~~ex~~ axis shows quantity demand. and vertical axis shows price. D represents dowards slope in demand ~~graph~~ curve.

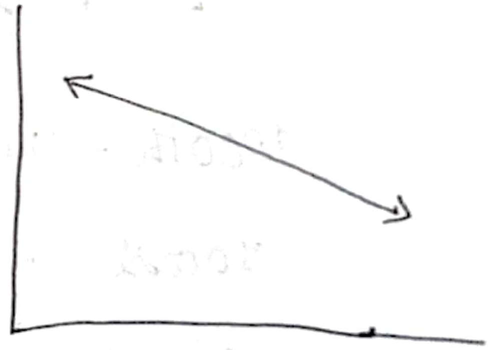
Here, we see when Price is 20 only 5 unit is consumed / demanded. But,

'Duet, H.M Ahuja

When price goes down to BDT 5 then consumtion level increases upto ~~80 unit is~~ 90.

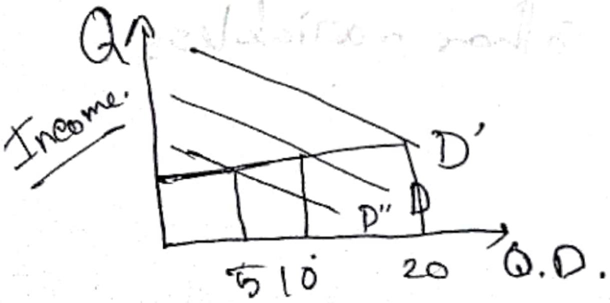
Shifting : Any other factors (except price) which changes the demand is shifting

Movement : Only for price ~~the~~ if the demand changes it's called movement.

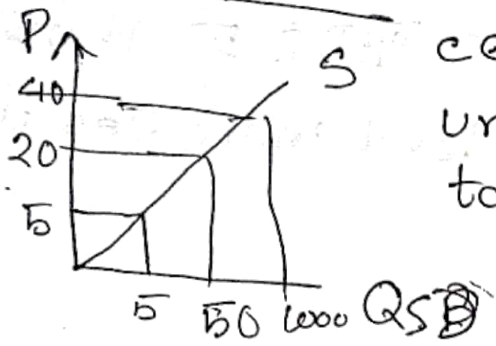


Factors like:

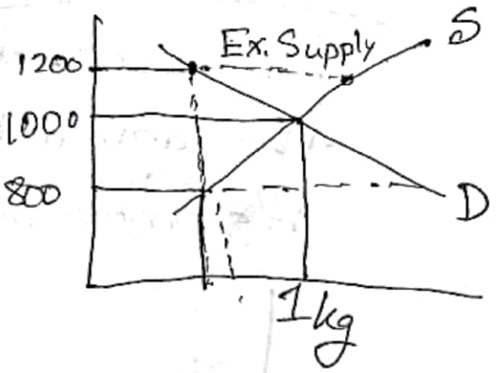
1. Consumer taste and preference
2. Price of related goods.
3. Future expected income
4. Marginal ~~Property~~ Propensity to cosume / to save MPS.
   (MPC) : extra 1 unit income এর ফলে consumption এর কি পরিবর্তন হচ্ছে।
5. Income.



Supply: Upto a certain period at a certain price how much unit of quantity i want to supply.



$P \propto S$



Market clearing price & demand

1200tk - Supply বেশি but Demand কম

1000tk - " and " equal

800tk " কম but " বেশি

For ~~price~~ supply & demand of a product

Elasticity: For change of one variable it's effect on other variables.

Price elasticity:

Q.D

Percentage change in quantity demand of particular commodity

" " " price of that " "

$$P_e = \frac{\Delta Q}{Q_0} \div \frac{\Delta P}{P} \Rightarrow \frac{\Delta Q}{\Delta P} \cdot \frac{P}{Q}$$

Income elasticity:

Percentage change in quantity demand of particular commodity

" " " income of individual.

$$P_y = \frac{\Delta Q}{Q} \div \frac{\Delta Y}{Y} \Rightarrow \frac{\Delta Q}{Q} \cdot \frac{Y}{\Delta Y} \Rightarrow \frac{\Delta Q}{\Delta Y} \cdot \frac{Y}{Q}$$

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- Cross Elasticity

$$= \frac{\text{P.C of Q.D of good } x}{\text{P.C in Price of good } y}$$

$$P_{xy} = \frac{\Delta Q_x}{Q_x} \div \frac{\Delta P_y}{P_y}$$

$$\Rightarrow \frac{\Delta Q_x}{\Delta P_y} \cdot \frac{P_y}{Q_x}$$

$$N = a \times 10^n$$

$$\boxed{1 \leq a < 10} \cdot \boxed{N > 0}, \boxed{n \in Z}$$

$$\log_{10} N = \log_{10} (a \times 10^n)$$

$$= \log_{10} a + \log_{10} 10^n$$

$$= \log_{10} a + n \log_{10} 10$$

$$\log_{10} N = \log_{10} a + n$$

$$\log N = \log a + n$$

$$23 = 2.3 \times 10^1$$

Basic for Comparison	MicroEconomics	MacroEconomics
① Meaning	The branch of economics that studies the behaviours of an Individual consumer, firm, family is known as microeconomics	The branch of economics that studies the behaviour of the whole economy, (both national and international) is known as Macroeconom
② Deal with	Individual economic variable	Aggregate economic variable
③ Business Application	Applied to operational or internal issues	Environment and external issues.
④ Scope	Covers various issues like demand, supply, production, consumption, economic welfare etc.	Covers various issues like, national income, general price level, distribution, employment, money etc.
⑤ Importance	Helpful in determining the prices of a product along with the price of factors of production (land, labour, capital, entre-preneur etc.) within the economy.	Maintains stability in the general price level and resolve the major proble of the economy like inflation, deflation, reflation, unemployment and ~~Power~~ proverty Who

	Micro	Macro
⑥ Limitation	It is based on unrealistic assumption, i.e, In microeconomics it is assumed that there is a full employment in the society which is not at all possible	It has been analyzed that "Fallacy of Composition' involves, which sometimes doesn't proves true because it is possible that what is true for aggregate may not be true for individual too

LAWS of Economics

1. All money value is created through and backed by the productions of commodities, trades, goods and services.

2. The individuals who created the production own all the money that is ~~en~~ exchanged for the products. Another way to state this second Law is "reward the Producers of the commodities, trades, goods and services and only the Producers."

(no middle)

3. All production must be marked on an Open Market (open to all on equal terms, absolutely no exceptions.)

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4. The money supply must be held constant with no exception. A constant money supply standardizes the Economic System.

The Central economic problems in Society.

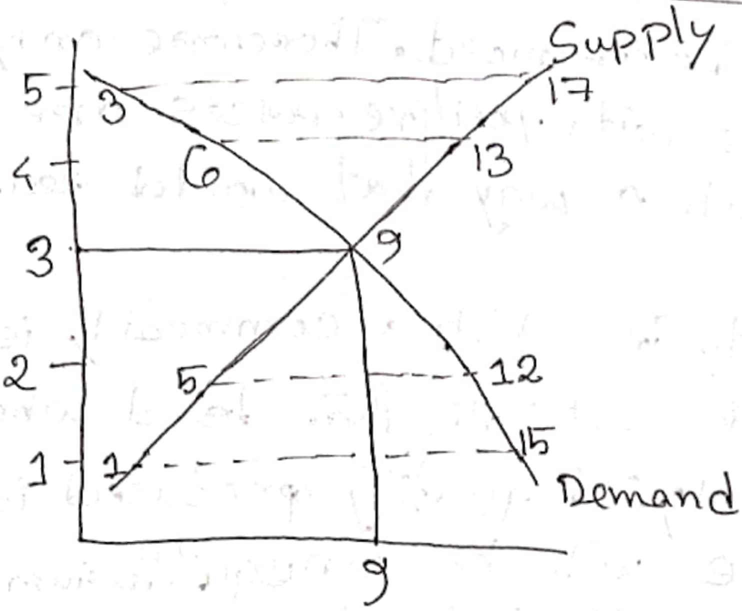
(i) What to produces: Which commodities are to be produced and in what quantities? The commodities which do not command positive prices in the market would not be produced. Therefore only those commodities with positive prices are to be produced and in such a way that would clear the market.

The quantity in which a commodity is to be produced is set at that level where demand equals supply. If quality produced is more or less then there will be unequilibrium in the market and price will ~~flucta.~~ fluctuate. Hence, to maintain stable equilibrium price it becomes necessary to make make.

C.W.

21.09.19

Price	Demand $Q_d = 18 - 3P$	Supply $Q_s = 3 + 4P$
1	15	1
2	12	5
3	9	9
4	6	13
5	3	17

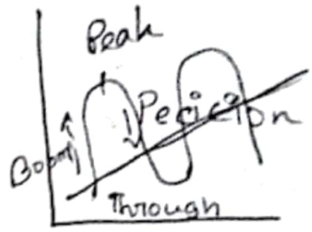


Unemployment:

Capacity to do both physical & mental work but not finding it.

Brain drain.

Unemployment



$$U = \frac{\text{total no. of unemployed people}}{\text{number of people in lebour force}} \times 100\%$$

Same dept.: different circular, get job.

Structural ~~unionf~~ unemployment, Cyclecal u.e.

Full Employment:

Regional unem.

Seasonal. "

Classical " : wage demand↑ ~~cotage~~ provide↓ mean time unemployed

Frictional "

Volentery "

C.W. Unemployment.

24.09.19

1. High Growth rate of Population.

2. Slow rise in Employment opportunities.

3. Low rate of Saving & investment.

4. Machinery.

5. Mobility - গতিশীলতা,

Assignment : 1 The problems & Solutions.

C.T. After ~~first~~ Puja vacation ~~to~~ 1st class.

. Deputation

Inflation : Too much money for little good.

4. Lack of vocational training.

5. Capital intensive work

6. Ignorance to private sector

7. Inefficiency of govt. sector

8. Ignorance to Agriculture

9.

Causes of Unemployment.

1. High Growth rate of Population
2. Slow rise in Employment opportunities
3. Low rate of saving and Investment.
4. Capital Intensive Production Technique
5. Lack of Vocational Training
6. Lack of proper man-power planning.
7. Inefficiency of Public Sector.
8. Negligence of Private "
9. Negligence towards Agriculture "
10. Low Mobility of Workers.
11. Lack of Infrastructural facilities.

geteconhelp.com/causes-reasons-unemployment-india

1. High growth rate of Population: The population growth rate tended to be high due to social, economic and religious reasons. Due to high growth rate of Population, there is a tremendous increase in the size of population.

But with the continues increase ~~in~~ workforce, employment opportunities are increasing at slower rate in the labour market which cannot create enough employment. So, lack of employment opportunity creates this problem of unemployment & underemployment.

2. Slow rise in Employment opportunities

Increase in employment and economic growth has strong relationship which means economic growth increase investment and production which create more employment opportunities in the economy

3. L.ROS AI: Over the period, national income of country increased but at the same time population also increased. As a result, per capita income increased but at a lower rate that national income. Due to low per capita income, rate of saving remained low in the economy which resulted in low investments in industry, agriculture and other sectors and increased problem of unplayment.

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4. C I P T : There is a scarcity of capital and abundance of skilled labour. So, considering such circumstances the problem of unemployment can be solved adopting labour-intensive technique of production. But initially, planning planning commision emphasised on development ~~of~~ of heavy and basic industries which have given more importance to capital intensive technique that labour intensive technique.

5. L.O.V.E : In modern time, labourers are required specialization, special skills, knowledge and technique know-how to get a job and education system has failed to prepare them for that. So, due to lack of skills and knowledge they have to remain unemployed

6. L.O.P.M.P :- There is a lack of proper manpower planning during planning period. Education and training of labour was not properly planned as per the future requirement and industrial demand. It means available labour was ineligible to meet it's demand.

The outdated education system is only able to produce clerk minded workforce or employees ...! increase the problem of unemployment

Scanned with CamScanner

Even, people with higher degrees have to remain unemployed in the country which encourage them to go abroad for the sake of job.

7. I.O.P.S: Govt. invests huge amount in Public sector. But productivity of labourers in public sector units ~~was~~ is low which results in under-utilization of resources and losses.

8. N.O.P.S:- The development of private sectors was controlled and only a few sectors kept reserved for them by the govt. So, which creates less employment ~~op~~ opportunities and unemployment increases

9. Negligences towards Agriculture Sector:
BD is an agriculture based economy and most of it's population dependent on agri. for employme. So, agriculture sector should be planned in such a way that maximum employment can be generated.

But during planning period, industrial sector given more importance than agriculture sector. which resulted in failur of agr- in generating employment.

Uncertainty of monsoon, burden of population, lack of irrigation facilities, lack of agri. finance and lack of use of machines are also responsible for poor development of agriculture which resulted in seasonal and disguised unemployment

10. Low Mobility of Workers: The mobilization of labour is low due to some social ~~reg~~ reasons, family relations, language religion, casteism, culture, lack of information, lack of transportation facilities and problem of housing which restrain them to mobilize and increase problem of undr..

11. L OIF: The major portion of country's development lacks the basic infrastructural facilities like transportation, electricity, banking, means of communication, insurane & health. ~~These are~~

Lack of national employment policy ~~La~~..

Solution:

- A change in pattern of investment: Instead of investing ~~all~~ amount in one sector only, one should create multiple ~~invest work~~ income source by investing in multiple sectors.

- Encour~~...~~: ~~As~~ The small enterprises should not give up on their bussiness. Rather they should ~~see~~ ~~what the demand of~~ look for the products the market demands and walkthrough ~~with~~ ~~new~~ challenges against big company inorder to grow their business

- There ~~most flexible~~ could be many ways to accomplish a ~~sim~~ task. But the most relevant and effective technique should be adopted to do solve problems

- The new ~~new~~ enterpreurs should be inspired in ~~both~~ small ~~rural~~ towns & ~~urban~~ rural areas ~~to are through~~ by means of growth centers. So, new growth centers should be established in order to co-operate them

- Subsidi: Financial support or assistances, such as a grant.

- The person or group who ~~or~~ have initiatives and are fit for ~~job~~ starting work The govt. or NGOS should support them by granting them subsidies.

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Re.: the education ~~system~~ system and policies should be updated ~~on~~ All the latest and most demanding tranning ~~which are to be~~ and courses are to be added in the ~~ca~~ education system to make learning learning effective and practical.

Q:- 12-10-19

1. Define Economies. 2

2. Difference between Micro and Macro economic 4

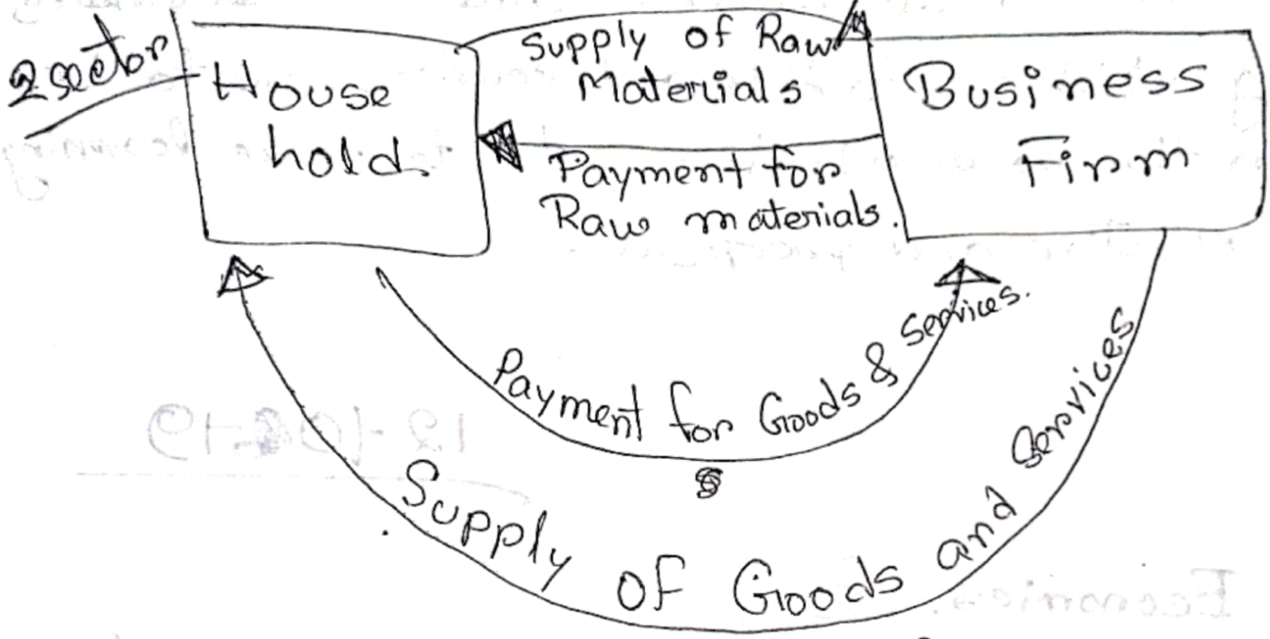
3. Draw a hypothetical demand & supply schedule and find the equilibrium position. 6.

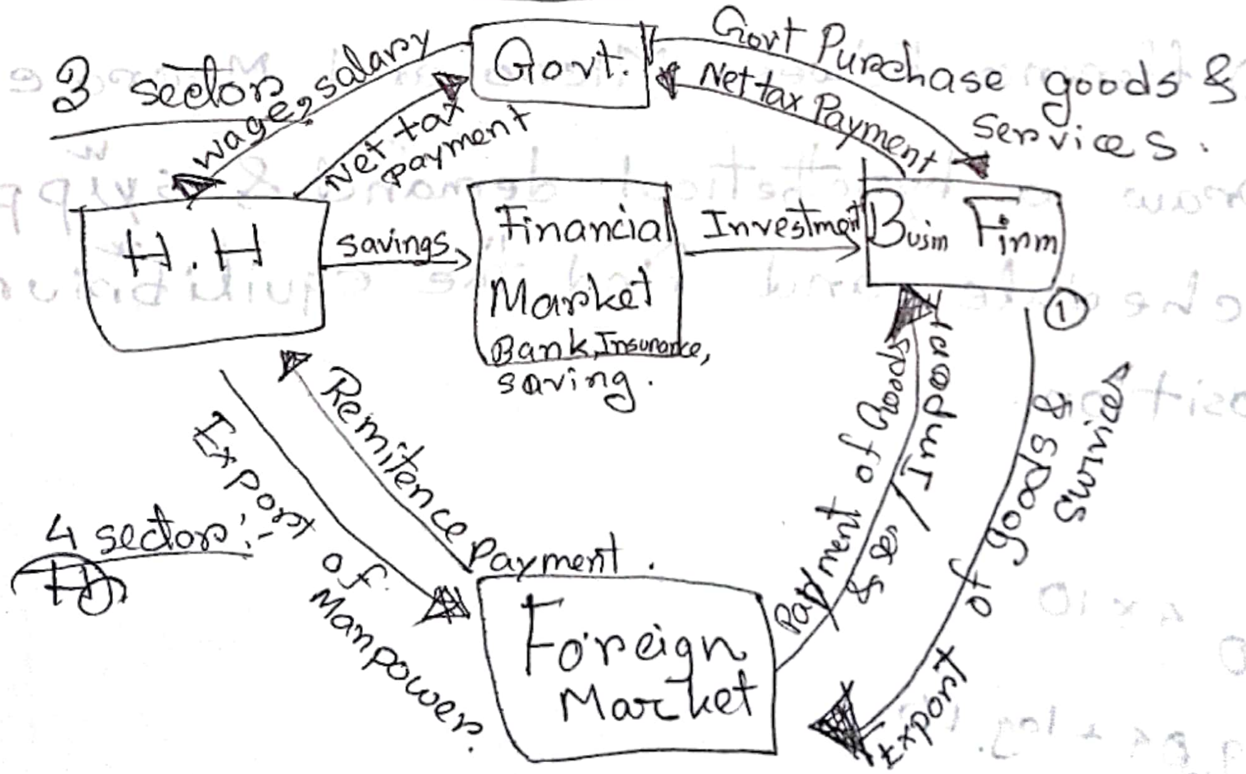
$\log_{10} 4 \times 10$

$\log_{10} 4 + \log 10$

$\log_{10} 4 + 1$

Circular flow of Income:-





H.W: Capitalist, Socialists, Communist, Mixed

Vocabulary
5 words.

Tax: Direct Financial Cutting.

Vat: Value added tax: Indirect financial Cutting.

4 Sector Economy:

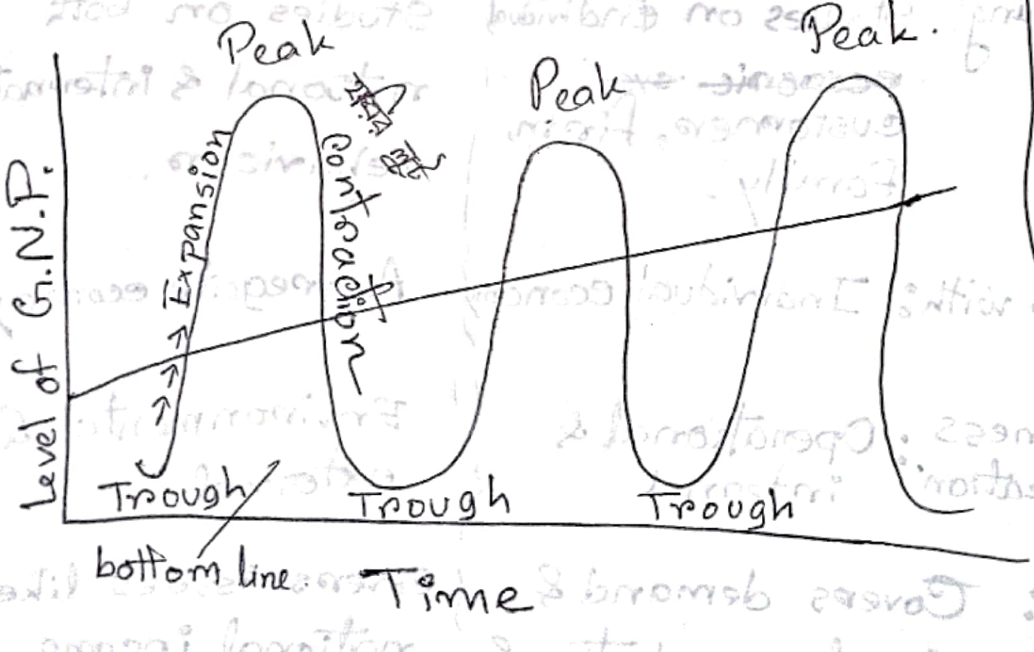
Foreign Market

Next day Inflation
H.W

Macroeco-
-nomics
Ahuja

Modern
Micro-
economics
~~AHUJA~~

Business Cycle:



Pg- 403; 404, 16, 20, 21,22,

Macroeconomics
A

Q: Define Economics?

The branch of knowledge concerned with the production, consumption and transfer of wealth. It explains about economic activities of an individual i.e. any activity which is related to earning and spending of the money. Almost every individual human being are ~~are~~ engaged in economic activities.

Q: Difference betw Micro & Macro economics

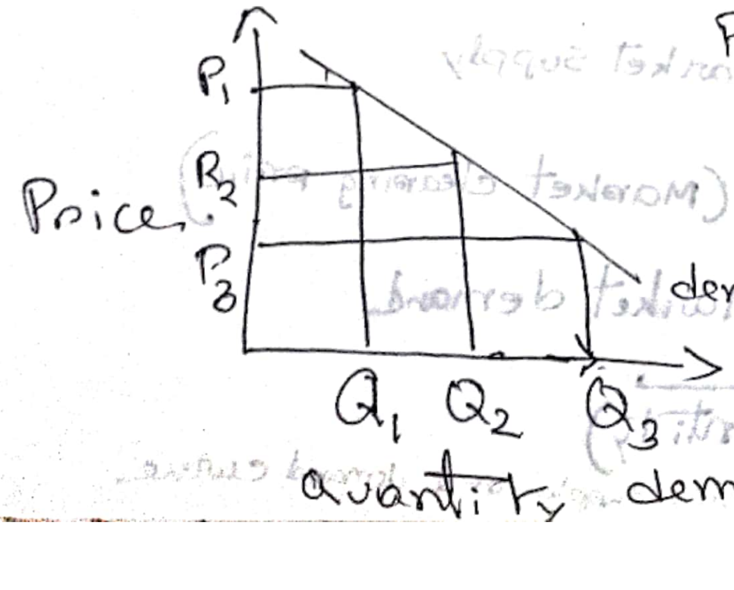
	Micro	Macro
(1) Meaning:	Studies on individual ~~economic sys~~ customer, firm, family.	Studies on both national & international behaviours.
(2) Deals with:	Individual economy	Aggregate economy
(3) Bussiness application:	Operational & internal	Environmental & external.
(4) Scope:	Covers demand & supply, production & consumption ~~etc~~	Covers issues like national income, employment

	Micro	Macro
(5) Importance:	Determine the price of product using the price factors.	Maintain price level. Deal with ~~prot~~ issues like inflation, deflation ~~ect~~ etc.
(6) Limitation:-	Unrealistic ~~as~~ assumption.	~~A4~~ Fallacy of composition, which means it might be true for ~~indi~~ aggregate not individual.

Q: Demand, Supply schedule & equilibrium position

Demand: An economic ~~pri~~ principle referring to a consumer's desire to purchase goods and services and willingness to pay for ~~a~~ that specific item.

Law: Holding other factors constant, an increase of price of a good or service will decrease the quantity demanded and vice versa.

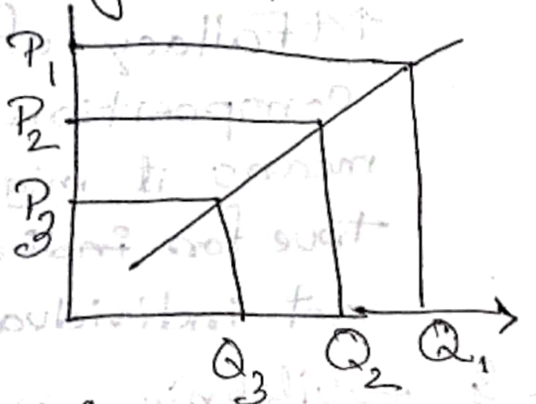


$P_1 > P_2 > P_3$

$Q < Q_2 < Q_3$

Fig: ~~Su~~ Demand vs pric

Supply: The economic term which refers to ~~the su~~ the amount of given product or service that the suppliers are willing to ~~give~~ consumers at a given price level for a given period.



$P_1 > P_2 > P_3$

$Q_1 > Q_2 > Q_3$

Fig 6 ~~La~~ Supply vs Price curve

Equilibrium: The equilibrium, in economices is a situation in which economic forces such as demand and supply are balanced in the absence of external influences the (equilibrium) values of economic variables will not change.

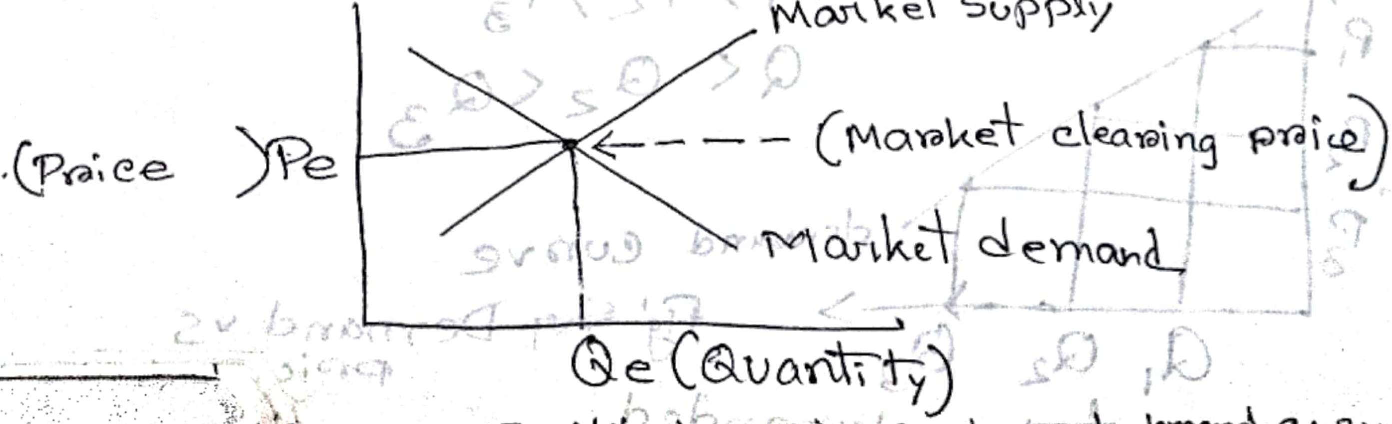


Fig 'a'. Equilibrium using supply and demand curve.

H.W

26-10-'19
Saturday

Inflation: It is a persistent rise in the general price level rather that a once-for-all rise in it.

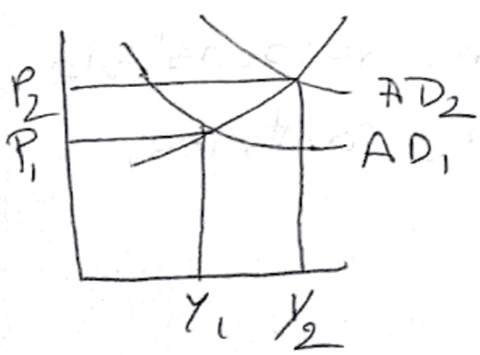
Inflation is four types:

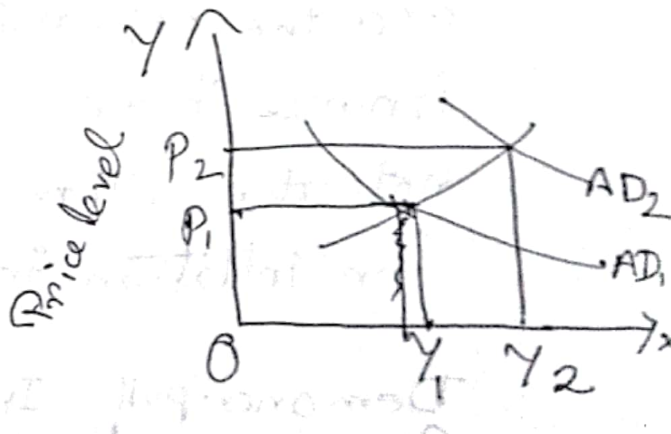
① Demand-pull inflation
② Excessive growth in money supply
③ Cost-push inflation
④ Structural inflation.

Causes of inflation:

① The main cause is excessive growth of money supply in the economy.

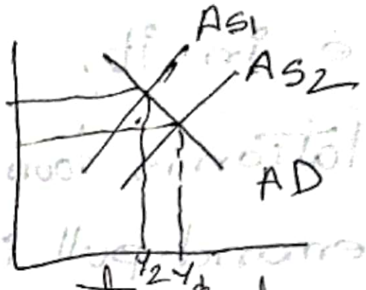
① Demand-pull inflation: When aggregate demand for all purposes - consumption, investment and government, expenditure - exceeds the supply of goods at current prices, there is a rise in prices.





Aggregate Demand & Supply

Cost-Push Inflation: It's the time when price rise without increase of aggregate demand.



1. Wage-push Inflation
2. Profit-push inflation
3. Increase in prices raw materials, especially energy inputs such as rise in crude oil prices.

~~Wage-push: Increase of wage~~.

Structuralist: Explains the inflation in the developing-countries in a slightly different way. The structuralist argue the increase in investment expenditure and the expansion of money supply to finance it are the only proximate and not the ultimate factors responsible for inflation in developing countries.

Demand-pull Inflation.
Supply-push Inflation

C.W.

Economics

26.10.19
Saturday.

Inflation: Too much money cheasing too few goods.

~~too~~

Pull
Push.

Fiscal Policy - By Govt. - $\boxed{\text{Tax, govt. expenditure}\uparrow}$, $\boxed{\text{Subsity}}$ (hospital, University). (price

Both Related to money supply.

Monetary Policy - By Central bank. - Cash Reserve Ratio, Bank rate, Interest Rate↑, USA
Selective Credit Control. Faderal Reserve System.

Tax highly paid

Tax↑ inflation↓

5000/25000

inflation

Initial capital to start bank - 500 Crore.

Cash reserve - ~~25~~ 50 crore (~~for~~ in Central bank)

Demand pull

Cash Reserve ratio↑ inflation↓

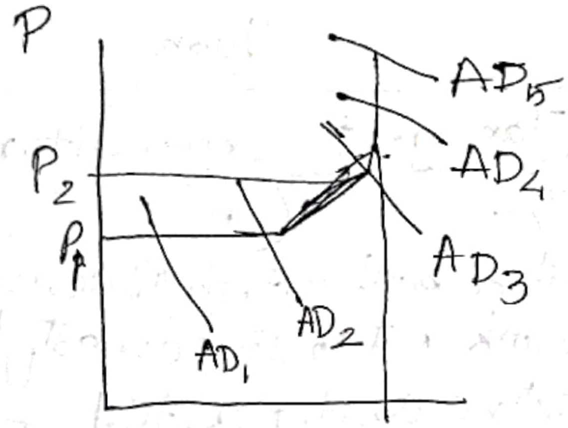
Bank loans from other bank↑ inflation↓

Interest rate↑ inflation↓

Selective Credit Control (specific persons like PhD holder

Demand Pull কেন হয় 

Demand pull inflation



AD + AS

Supply Constant
Demand ↑
Price ↑
Inflation ↑

Causes of D. P. I.

1. Growing economy,
2. Govt. Spending,
3. Inflation Expectation,
4. Asset inflation
5. More money in system

2006 2019
3 13

Money supply ↑ Inflation ↑

Demand Pull: increase supply
price stabilization.

16 - Class
29 - Exam

Cost-Push inflation:-

Increase of raw material.

1, 3
8
10
13
14
15
Prema
Tasfiya
Sinthiya
Mojahid

C.W. Economic - 02-11-19

Inflation → Demand - Pull
Inflation → Cost-push

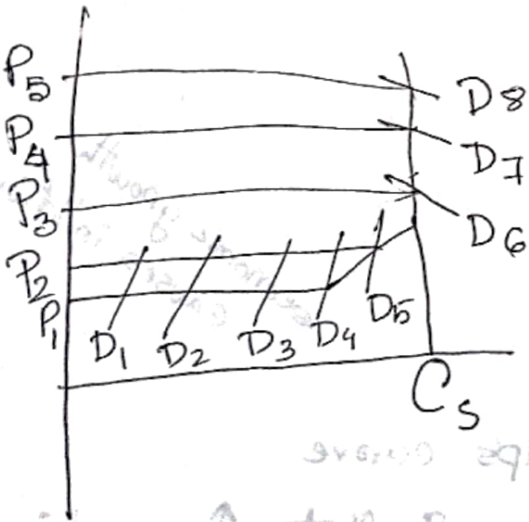
মুদ্রা স্ফীতি

$ USD - Standard Currency.

The more money you have the rate value of money decreases.

Demand-pull.

Constant Supply = C_S



① Solⁿ:
ⓐ Reduce demand
ⓑ Increase supply
①

Cost-Push

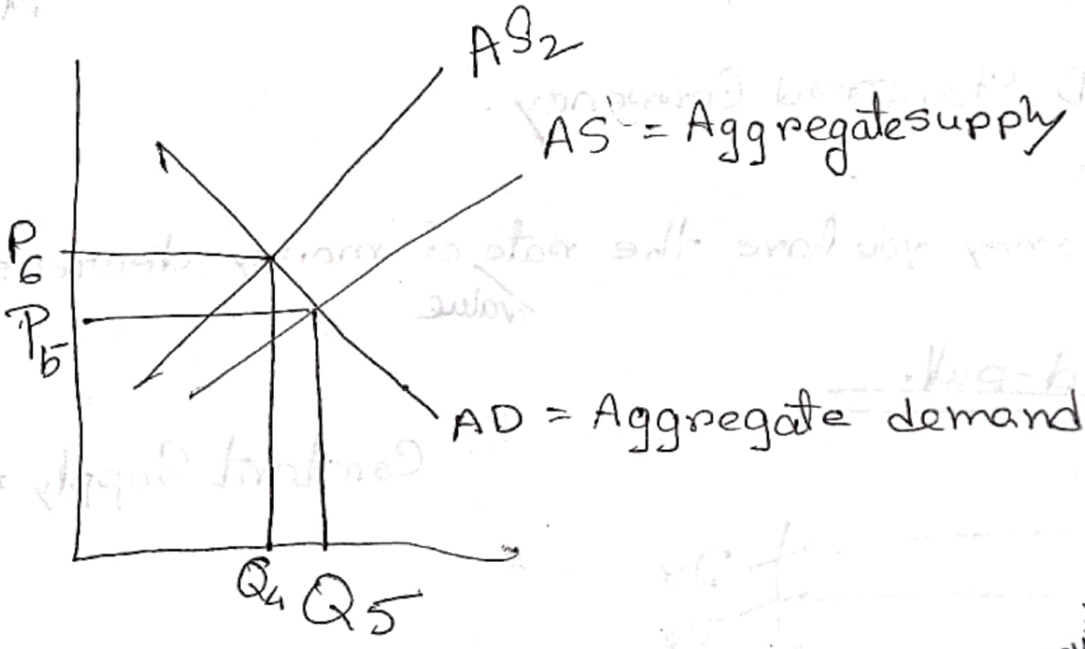
① Cost of raw material increase

② Natural / Man-made

③ Political

④ Shortage of supply

⑤ Higher wage.



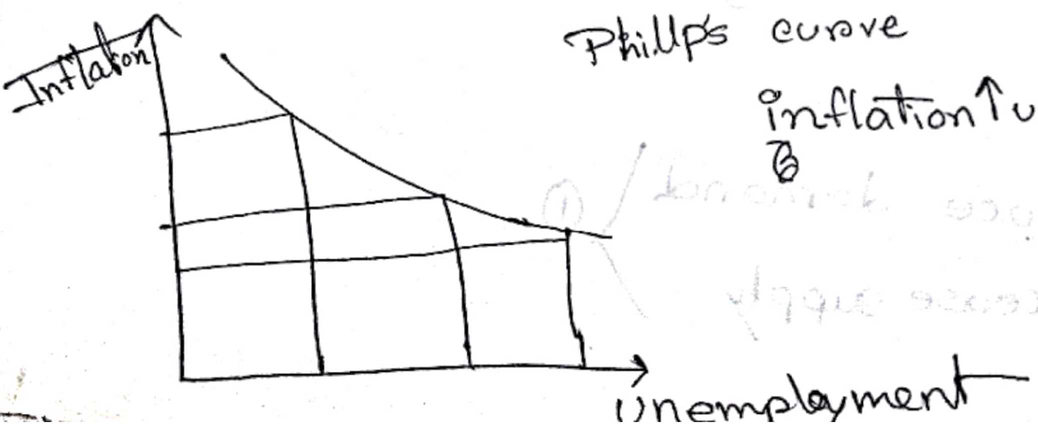
①. Demand same

কম Q বেশি price-এ

economic growth causes inflation

Phillp's curve

inflation↑ unemployment↓



Phillip's Curve

Production:-

Consumer average

⇒ Production: Transformation of raw material into final product.
(useable product)

Factors of production:-

1. Land.
2. labor
3. Capital.
4. ~~Enterpreneur~~/Organization.
Enterpreneur

$Q = f(L, L', C, E, ---)$

Production

Total — 100 unit

Average — $\frac{TP}{Q \text{ (total raw material)}}$

Merginal- extra 1 unit produce করতে কতটুকু raw material লেগেছে।

$$\frac{\Delta TP}{\Delta Q}$$

$$\frac{\Delta TP/Q}{\Delta X} \qquad \frac{TP/Q}{x}$$

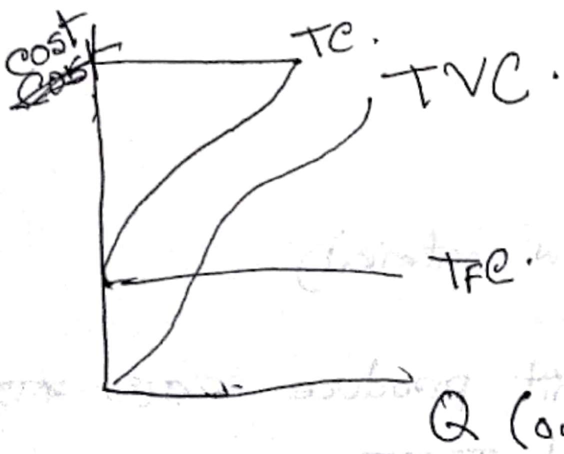
Input	Total	Marginal	Average
1	15	15	15
2	31	(31-15) 16	15.5
3	48	17	16
4	59	11	14.8
5	68	9	13.6
6	72	4	12
7	73	1	10.4
8	72	-1	9
9	70	-2	7.8
10	67	-3	6.7

Norway
financially
economically

~~Price~~
Production/
Cost/
Revenue.

Cost : ~~Who~~ How much we spend for a particular thing.

Total Cost = Total Fixed Cost + Total Variable Cost



~~Revenue~~

~~1, 07, 10~~ ~~Ec~~ Economics, Micro vs Macro, central economic problem, produce, Importance of economic for engineers, Demand, Supply, equilibrium, Inflation, Demand ~~p~~ pull, cost push inflation, solution.

Fundamentally, engineering economics involves formulating estimating and evaluating the ~~eco~~ economic outcoms when alternatives to accomplish a defined purpose are available.

Q why economics useful for engineers?

=> Engineering economics poses numerous benifits because it allows those in industry to make strategic decisions for their companies. These subjects are essential for engineering economics because they provide the foundation for engineers to make good decisions in the business environment.

—x—

Q What is the role of engineering economics in decision making process?

=> Engineers play a vital role in ~~ea~~ capital investment decisions based upon their ability and experience to

—x—

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design, analyze, and synthesize. Enginnering economy involves formulating, estimating, and evaluting the expected economic outcomes of alternatives designed to accomplish a defined purpose.

-x-

⊗ Why should engineer study economics?

⇒ An engineer has to solve real world problems. Because it costs money to design, develop, manufacture, and sell the goods that engineers produce, the only way to be effective at doing this whole cycle is to understand economics.

-x-

⊗ How engineering economics is differen from economics?

⇒ Economics is the social science that describes the factors that determine the production, distribution and consumption of goods and services. Engineering economy is a subset of economics for application to engineering projects.

Laws of economics

There are the 4 Basic Laws of economics. When these Laws are applied correctly in a society the society achieves explosive ~~prospec~~ prosperity. Conversely when thes 4 laws are violated that society will spiral down into recessions, depressions and wars.

The following are the 4 Basic law of economics:

1. All money value is created through and backed by the production of commodities trades, goods and services

2. The individuals who create the production own all the money that is exchanged for the products. Another way to state this 2nd law is, "reward the Producers of the commodities, trades, goods and services and ony the producers

3. All production must be marketed on an Open Market (open to all on equal terms, absolutely no ~~exp~~ exceptions)

4. The money supply must be held constant with no exceptions. A constant money supply standardizes the economic system

Economic Problems

1. Scarcity, choice and basic economic problem

~~2 Opport~~

what to produce?

At level of govt. scarcity of land, labor and capital means that they cannot satisfy all the needs of economy. They have to choose which goods and services to produce, with limited resources available. From an individual's point of view, he or she has to decide how much to consume and how much to save.

How to produce?

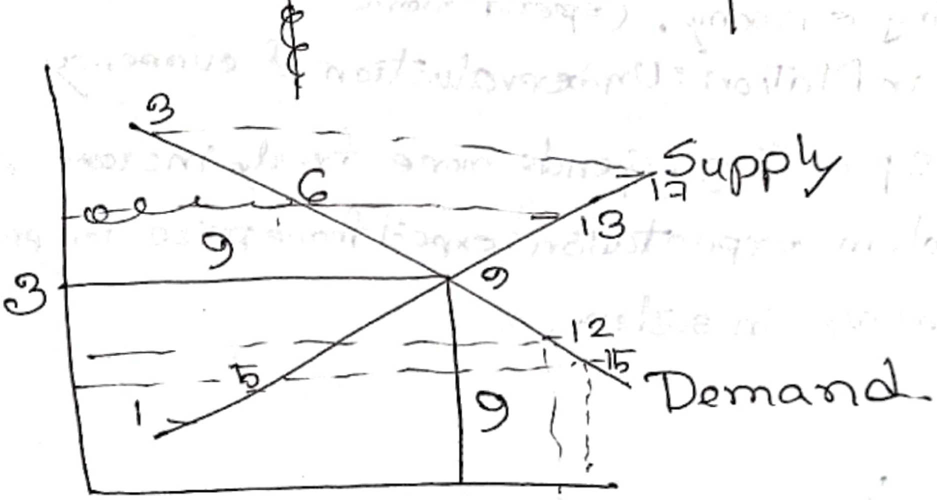
This looks at the combination of resources and the quantity of each resource to be used to produce a given level of output. The ~~bet~~ best combination is the full employment of the available resources, to produce maximum output.

For whom to produce?

This refers to the distribution of goods and services between different categories and sections of the population. ~~For eg~~

2018 - 2(c)

~~Given~~ ~~data~~ Price	Demand $Q_{dt} = 18 - 3p$	Supply $Q_{st} = -3 + 4p$
1	15	1
2	15	5
3	9	9
4	6	13
5	3	17



Here, ~~when~~ ~~pric~~ equilibrium price is 3 unit and equilibrium quantity is 9.

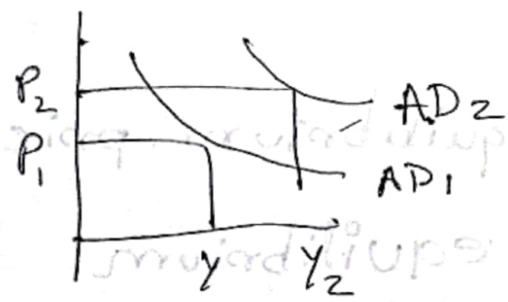
Inflation: Is the increase ~~a~~ in price of goods & services. One has to spend more to fill their demand

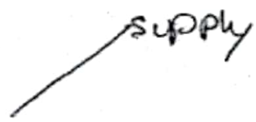
Inflation reduces the purchasing power of every unit of currency.

Demand-pull: when demand for product and services of the consumers increases rapidly causing shortage/outstrip of supply.

1. Growing enonomy. (spend more
2. Asset inflation: Undervaluation of currency
3. Govt. spending. Spends more freely, increases price
4. Inflation expectation: expect more price for product
5. More money in system.

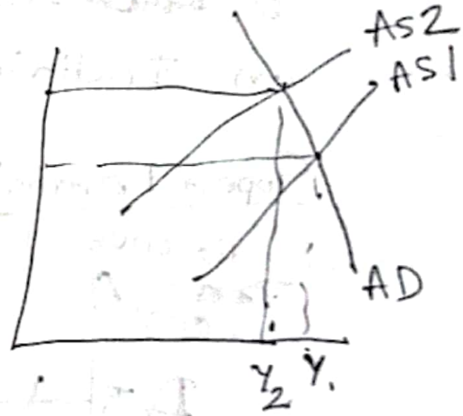
~~6.~~





Cost push: Overall price increases due to ~~cost~~ increase of cost of wages and raw material. Higher cost of production decreases aggregate supply in economy So, demand for goods hasn't changed, the price increases from production and consumers faces cost push inflation

Causes.



1) Increase of of cost of Raw material.
2) Cost of laboor
3) Natural disaster
4) Political condition
5) Higher wages
6) Imported inflation
7) Higher tax on product & services

19-11-19 (extra class taken)

Market

A market is any place where sellers of particular goods or services can meet with buyers of those goods and services.

3(c)

The Characteristics of Perfect Competition Market

1. There is a large number of firms.

2. All products are homogeneous in nature.

3. Market share has no influence on prices.

4. Firms can enter or exit the market without cost.

5. ~~Price~~ Infinite price elasticity of Demand for an Individual firm

Super Normal Profit in Perfect Competetive market

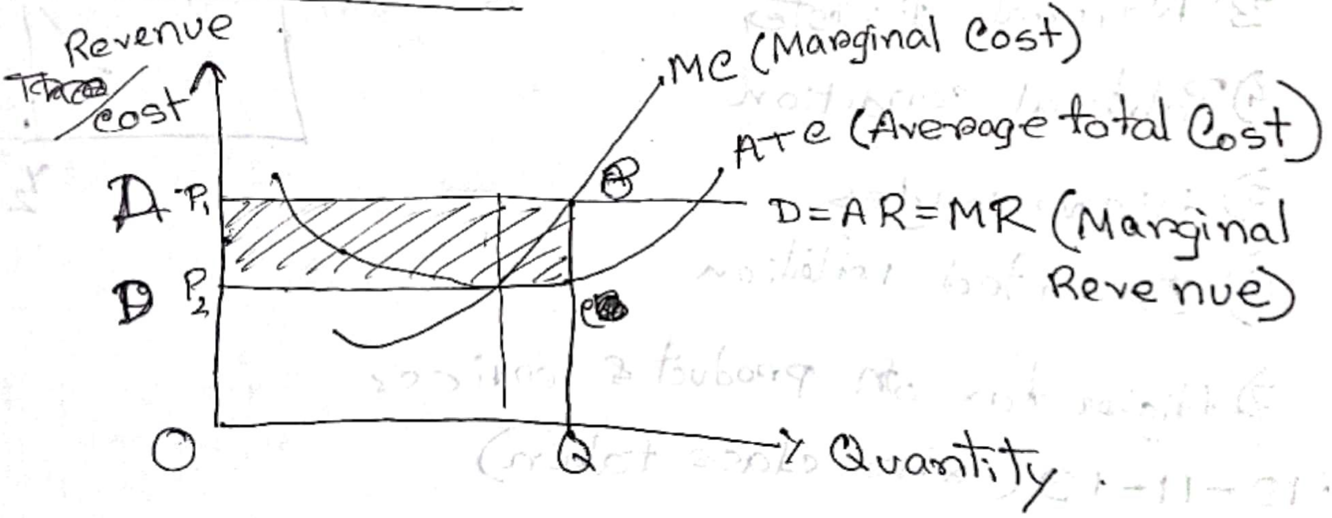
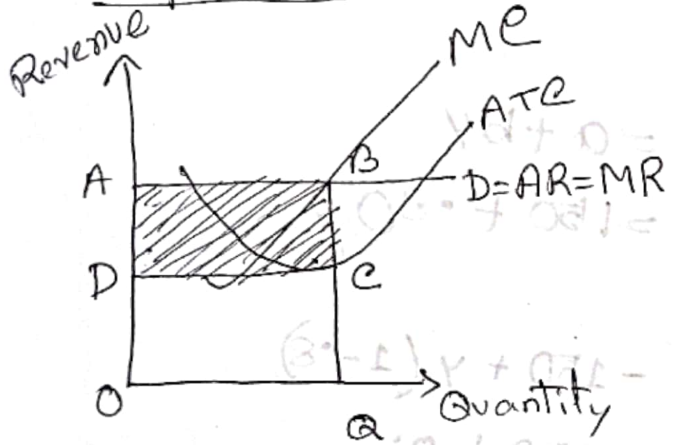


Figure: Super Normal profit

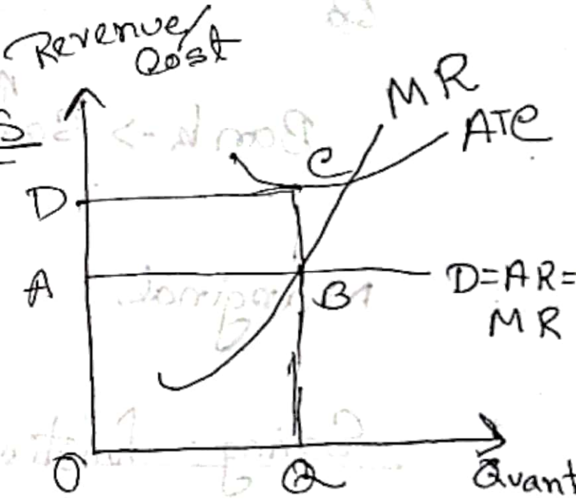
Here, let at the horizontal axis we have quantity and on vertical axis we have the revenue or cost. Let at price P_1 we have the demand = annual revenue = marginal revenue. The marginal cost MC cuts

MR from below. Let the intersecting point is B. Then for Q amount of quantity we get the B point. Now, the Average total cost curve intersects the BQ line at C. for the price P_2. Now we have the total revenue as $\square ABQO$ and the Total cost as $\square ODCQ$. $TR - TC = \pi = ABCD$ as the ~~pot~~ total profit.

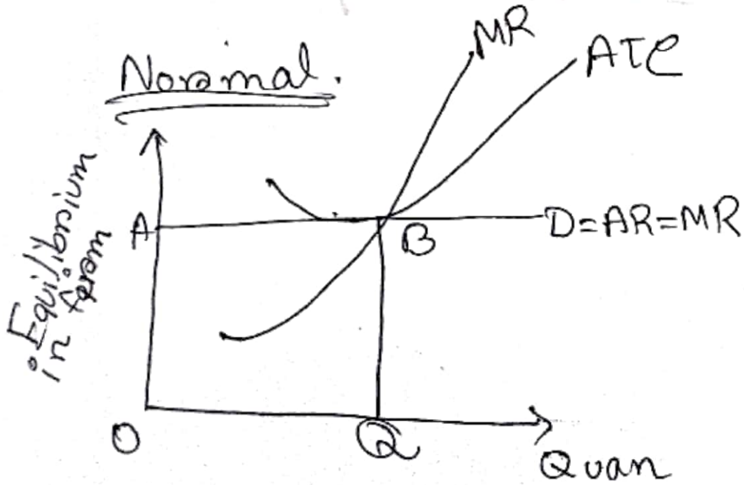
Super Normal.



Loss



Normal.



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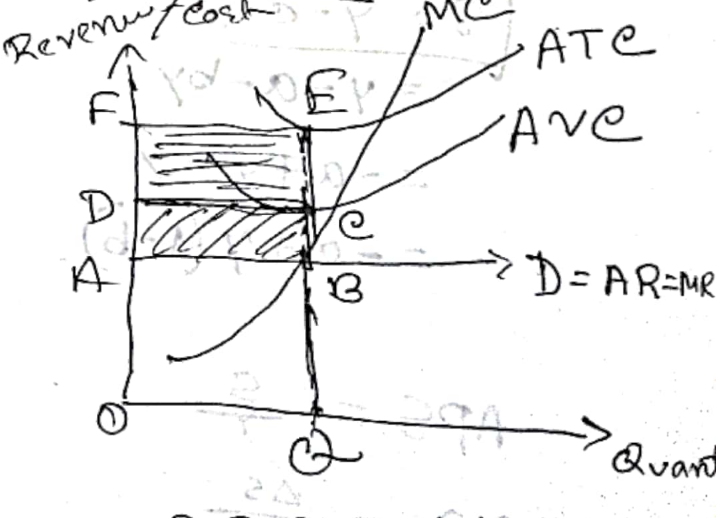


ABEF total loss

C.W.

30-11-19

Consumption function.

$C = f(Y)$

C = consumption
Y = Income.
a = autonomous consumption
b = slope.

$\boxed{C = a + bY}$

$APC = \frac{C}{Y}$ $[C = Y] = 1$.

Average proportionality Consumption.

Bank -> Saving (my saving) ↔ other's investment

Marginal,

Saving function.

$Y = C + S$

$\boxed{S = Y - C}$

$= Y - a - bY$

$= -a + Y - bY$

$= -a + Y(1 - b)$.

$C = a + bY$

$= 150 + .80Y$

$S = -150 + Y(1 - .8)$

$= -150 + 0.2Y$

$APS = \frac{S}{Y}$

$MPS = \frac{\Delta S}{\Delta Y}$

Scanned with CamScanner

Prove $MPC + MPS = 1$.

$APC + APS = 1$.

$Y = C + S$

$\frac{Y}{Y} = \frac{C}{Y} + \frac{S}{Y}$

$1 = APC + APS$

average কত

consume / save

$\Delta Y = \Delta C + \Delta S$

$\frac{\Delta Y}{\Delta Y} = \frac{\Delta C}{\Delta Y} + \frac{\Delta S}{\Delta Y}$

$= MPC + MPS$

extra 1 unit বাড়লে কত consume বাড়বে / কমবে.

$Y = C + S$

$C + S = C + I$

$S = I$

$\boxed{S = -10 + .20Y}$ $I = 50$. what is C.

~~" " equilibrium?~~

$Y = C + S$. $S = I = 50$.

$\boxed{C} = Y - S$

$= Y + 10 - 0.2Y$

$= 10 + Y - 0.2Y$

$= 10 + Y(1 - 0.2)$

$\boxed{= 10 + 0.8Y}$

$= 10 + 0.8 \times 30$

$= 250$

$Y = \frac{50 + 10}{.2}$ EOP

$= 300$

Scanned with CamScanner

Determination of National Income.

$Y = C$. [income = consumption]

$Y = C + S$ $\qquad S = I$

$= C + I$ $\qquad C = a + by \qquad I = I_a$ (autonomus invevstment)

$= C + I + G$

$Y = C + I$

$= a + by + I_a$

$Y - by = a + I_a$

$Y(1-b) = a + I_a$

$Y = \frac{1}{1-b}(a + I_a)$.

(slope)

$Y = C + I + G$ $\qquad C = a + by$

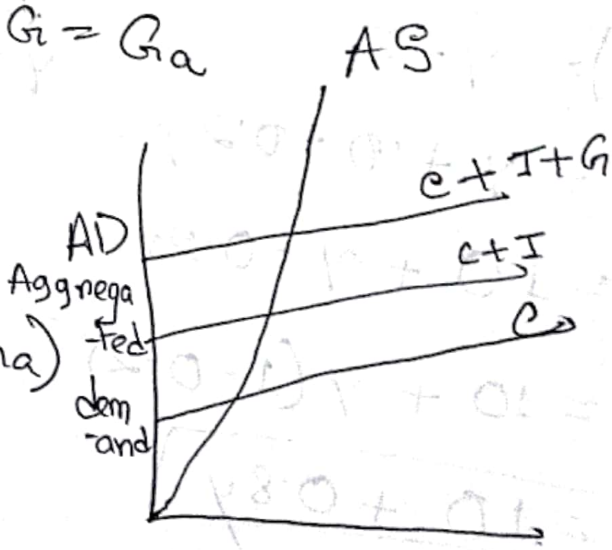
$\qquad I = I_a$

$= a + by + I_a + G_a$ $\qquad G = G_a$

$Y - by = a + I_a + G_a$

$Y(1-b) = a + I_a + G_a$

$Y = \frac{1}{1-b}(a + I_a + G_a)$



MPC+MPS=1

Palthus -> , birth rate geometric Progression

Consumption multiplier,

$k = \left\{\frac{1}{1-MPC}\right\}$ multiplier.

$= \frac{1}{MPS}$

Prove $\frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC}$

$Y = C + S$

or, $Y = C + I$

or, $\Delta Y = \Delta C + \Delta I$

or, $\Delta Y = b\Delta Y + \Delta I$

$\Delta Y - b\Delta Y = \Delta I$

$\Delta Y(1-b) = \Delta I$

$\frac{\Delta Y}{\Delta I} = \frac{1}{1-b}$

$\frac{\Delta Y}{\Delta I} = \frac{1}{1-mpc}$

$= \frac{1}{MPS}$

$C = a + bY$

$\Delta C = b\Delta Y$

$b = 0.75 = \frac{75}{100} = \frac{3}{4}$

$= mpc.$

$k = \frac{1}{1-mpc}$

$= \frac{1}{1-\frac{3}{4}}$

$= \frac{1}{\frac{1}{4}}$

$= 4$

Next Next Tuesday Exam (MARKET)

2012 5(c) $I_a = 200$ $C = a + bY$

$= 80 + 0.75Y$

$Y = C + I$

$Y = 80 + 0.75Y + 200$

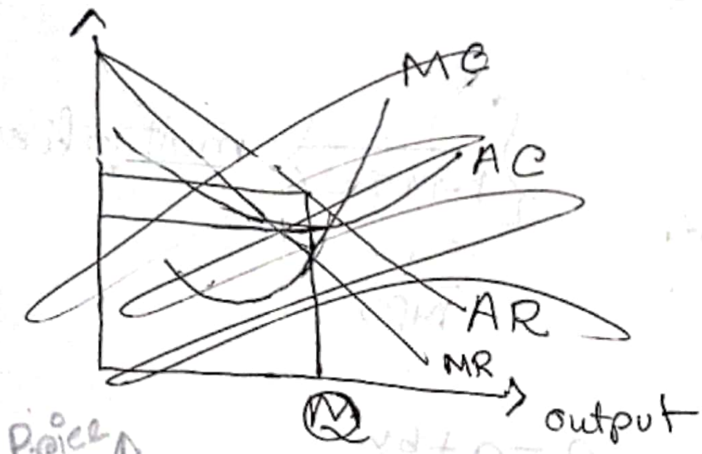
$Y(1-0.75) = 280$

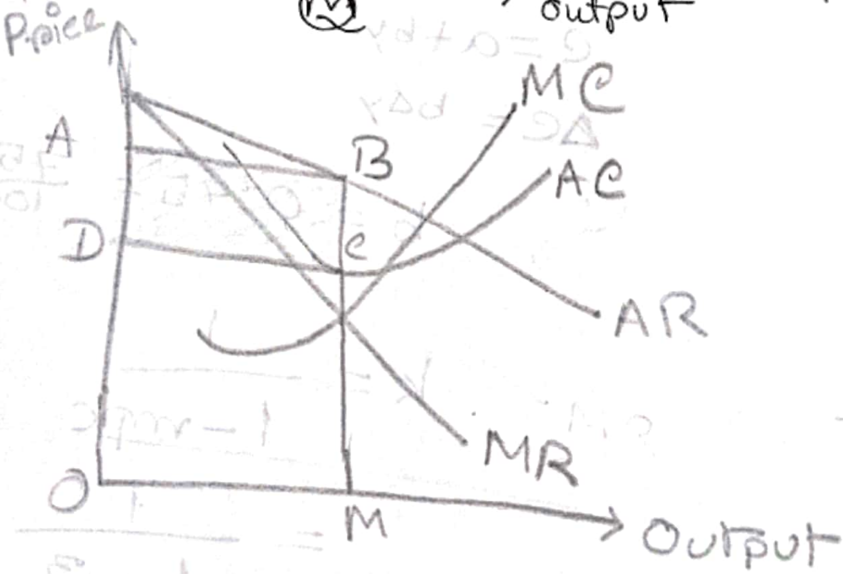
$Y = \frac{280}{0.25}$

$= 1120$

Monopoly:

Super Normal Profit:





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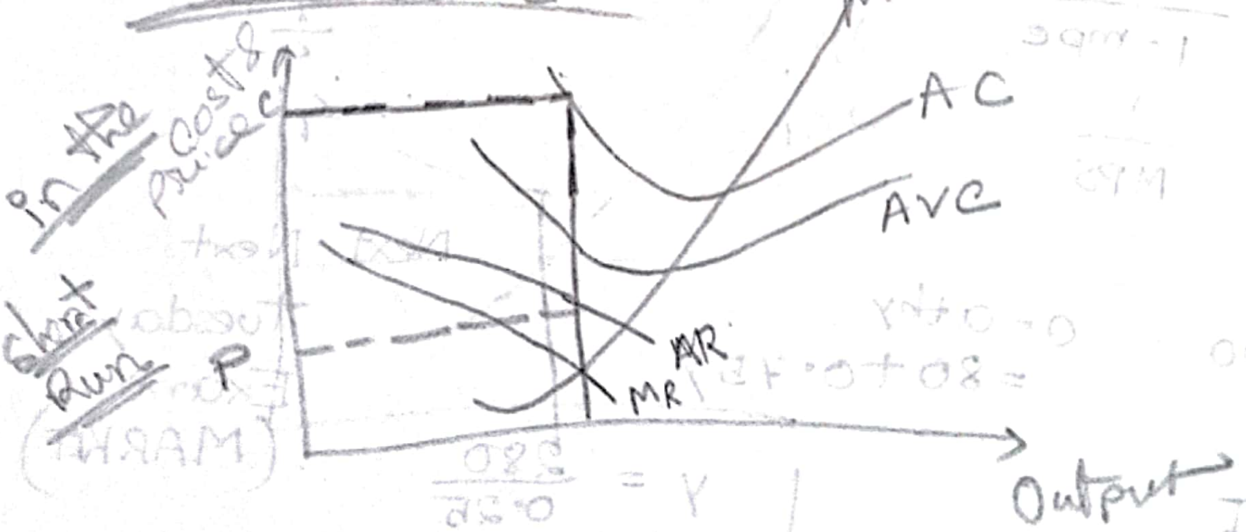
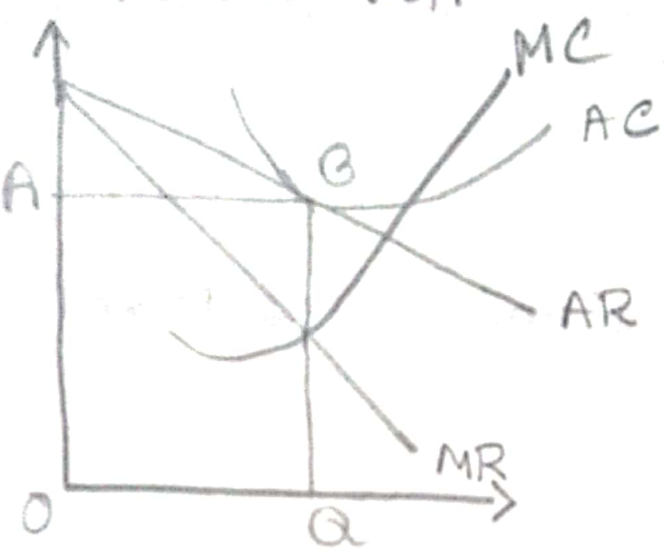
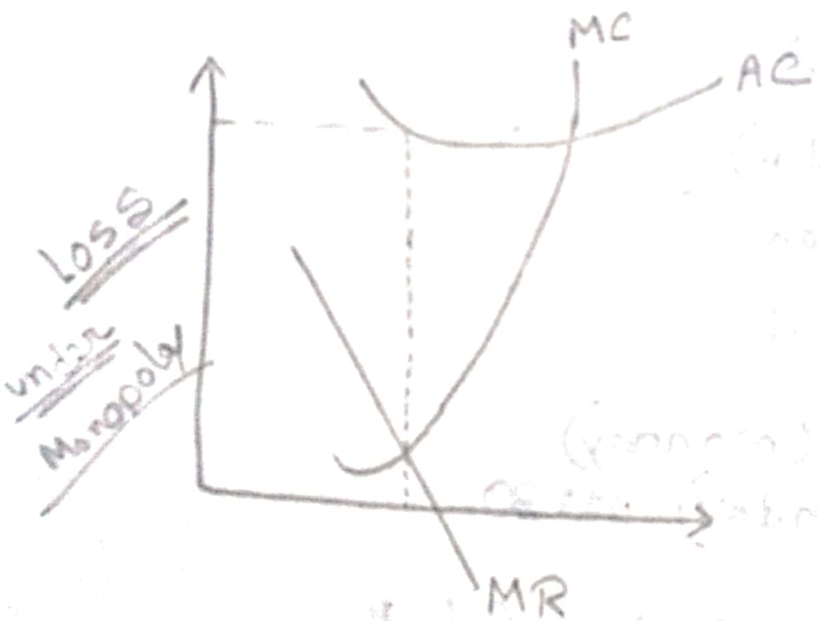


Normal Profit





Perfect

1. Very large no. of firm.
2. Products are standardized.
3. There is no control over price.
4. Firms can enter & exit the market without cost.
5. Many sellers for same product or service.
~~6. Restaurants, retail stores.~~
6. Wheat, soybeans, bus, complaine

Monopoly

1. Number of firms comparatively less than perfect market
2. Products are differentiated.
3. There is slightly control over price
4. Firms have no barriers in entry condition.
5. One seller with numerous buyers.
6. Railway, restaurants, retail stores,

C.W. # Economics

21.12.19
Saturday

Economics.

Subject matter of economics.

Micro Vs Macro.

Captalist vs Socialist vs Economics vs Mixed.

Whom, how, why ---

Q↑ P↓

what Demand, Supply, (law).

Q↑ P↑

shifting (with price)

movement (without ")

factors of production

Total, average, marginal

Perfect & Monopoly. (monday)

equilibrium (monday) 11:30

Inflation, Ph.

* Philips, Circular flow, Business Cycle *

GNP, GDP

~~BD~~. Revenue & Capital budget.

~~Assi~~ *5 years planning

C.W.

Economics

28.12.19
Saturday

Problems ~~i~~in Agriculture Sector:-

1. Lack of land
2. Lack of modern equipments/machinery
3. Lack of skilled labor.
4. " " training facilities.
5. " " infrastructural facilities.
6. " " proper market facilities.
7. Privilage of middle man.
8. High interest rate on loan taken by farmer.
9. Lack of subsidy and support from government.
10. Contaminated input.

Basic + Demand Supply : Next class. 04-12-19

Cell: (7) Revision

04.01.20
Saturday

SEMT - Science, engineering, mathematics, technology.

Deals with social behaviour.

Capitalist, Socialist, Mixed ~~Industrialist~~, Communist,

[5]

Capitalist → myself
Socialist → equal
Communist → me two others equal

Free-enterprise economy (where govt. don't handle money issue).

Price is not handled ~~in~~ by govt.

Production & market → Next Sunday.

04-01-20

Jannat.
Sonia
Jne
Nahid.
Nadim
Mithun
Mou
Himu

Nishi
·Sadek
Abir.

Fahim
Bitthi
Sadia
Sabuj

The four types of economies:-

1. Traditional Economic System.

The most ~~anti~~ ancient types of economic system in world. Vast portion of world still function under a traditional economic system. These areas tends to be rural, second or third-world, and closely tied to land, usually through farming. In general, in this type, a surplus would be rare. Every member has more specific and pronounced role, and thes society tend to be very close-knit and socially satisfied. They ~~to~~ lack access to technology and advanced medicine.

2. Command Economic System.

In a command economic system, a large part of economic system is controlled by a centralized power. For example, in the USSR most decision were made by central govt. This type of economy was the core of communist philosophy. Command economy is capable of creating a healthy supply of it's resources, and it rewards its people with affordable prices. This capability also means that the govt. usually owns all the critical industries like utilities, aviation and railroad. Theoritically the govt. creates enough jobs and provides goods & service at affordable rate in command economic system.

However in reality, most command economics tend to focus on most valuable resource like oil.

3. Market Economic System:

In free market economy, firm and houshold act in self-interest. There is no govt. intervention in pure market economy. However, no truly ~~no~~ free market economy exists in world.

There is a separation of govt. and market. This separation prevents the govt. from becoming too powerful & keeps theirs interest aligned with the market.

4. Mixed economic system.

Combination of diff. types of economic sys. It's cross betn market economy and command economy. It's more or less free of govt. ~~ower~~ ownership except for a few key areas like transportation or sensitive industries like defence and railroad. However, the govt. is involved in regulation of private business. The idea is to be best for both worlds - ~~th~~ incorporate policies ~~&~~ that are socialist & capitalist. To a certain extent most countris are mixed - India, france.

Basic of difference	Capitalist	Socialist
Resources Ownership	Privately owned	State owned.
Foundation belief	Competition brings out the best in people	Cooperation is the best way for people to co-exist
Earning of Wealth	Everyone works for his own wealth	Everyone works for ~~wh~~ wealth which is distributed equally to everyone.
Market scenario	Level playing field	Protection to PSUs, private enterprise are permitted in few business only
Govt. interference	Only in situation where laws have been broken	Fully involved.
Employees motivation	Highly motivated on account of proportional benefits.	Rarely motivated as performance is not awarded.
Merit	Perception of better economic growth becaus of competition	Equal distribution of income results in welfare of all.
Demerit	Few individuals/groups attain powers, rest are exploited	Hard work is not rewarded, lazy employs also enjoy equal level of benefits.

7.

Socialism	Vs Communism.
1. Suggests that contribution is made from everyone according to their ability but they get back according to the size of their contribution	1. Suggests that everyone in society contributes and works according to their ability and gets back everything according to their needs.
2. Profits are distributed depending on the results of every individual's work.	2. Everyone has free access to all the goods that the community has to offer.
3. There is a central govt. that owns all means of production decides on the distribution of goods, and makes plans for the economy.	3. There is no govt. bcaz everything is owned collectively by every member of society.
4. There's personal and public property	4. There's no private property.
5. Socialism gives the individual the freedom to choose whatever he wants to believe in	5. Communism rejects all religion.
6. Socialism is primarily economical and can co-exist with a variety of political systems	6. Communism is a political system

	Communism	Socialism	Capitalism
Business Ownership	Most business are owned and operated by the govt.	The govt. owns and operates major industries; individual own small business	Individuals own and operate all business.
Competition	None. The govt. owns & operates everything	Restricted in major industries; encouraged in small business.	Encouraged by market forces and govt. regulation
Profits	Excess income goes to govt.	Profits earned by small business may be reinvested in the business; profits from govt.-owned industries goes to govt.	Individuals are free to keep profits and use them as they wish
Product availability and price	Consumers have a limited choice of goods and services Prices are usually high.	Consumers have some choice of goods and services prices are determined by supply and demand	Consumers have a wide choice of goods and services; prices are determined by market demand
Employment option	Little choice in choosing a carrer; most people work for govt. -owned industries or farms.	Some choice of careers; many people work in govt. jobs.	Unlimited coice in career.

21-01-2020 → Economic Model test

Income

$$I_p = \frac{\Delta Q}{Q_0} \div \frac{\Delta Y}{Y_0} \qquad Y \text{(Income)}$$

$$\Rightarrow \frac{\Delta Q}{\Delta Y} \cdot \frac{Y_0}{Q_0}$$

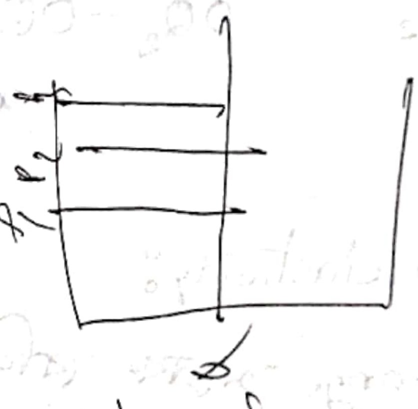
Cross :

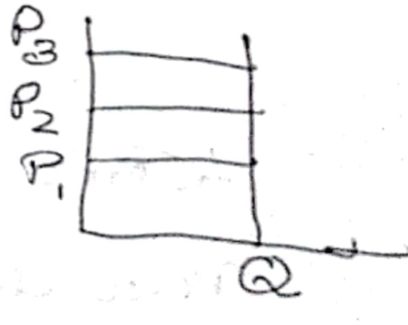
একটার price ↑↓ effect on similar product.

$$E_{xy} = \frac{\Delta Q_x}{Q_{0x}} \div \frac{\Delta P_y}{P_{0y}} = \frac{\Delta Q_x}{\Delta P_y} \cdot \frac{P_{0y}}{Q_{0x}}$$

৫ cases of elasticity

1. Perfectly inelastic elasticity (zero elasticy.

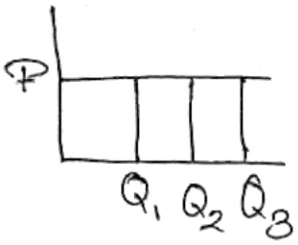




Quantity fixed . price change

$$E_p = \frac{\Delta Q}{\Delta P} \times \frac{P_0}{Q_0} = \frac{0}{\Delta P} \times \frac{P_0}{Q_0} = 0$$

2. Perfectly elastic:



$$E_P = \frac{\Delta Q}{\Delta P} \times \frac{P_0}{Q_0}$$

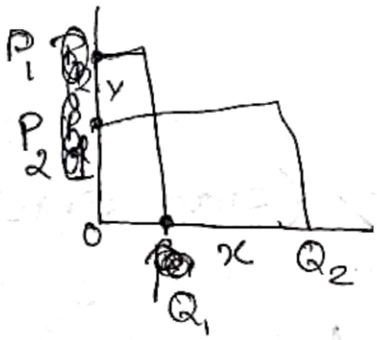
$$= \frac{\Delta Q}{0} \times \frac{P_0}{Q_0}$$

$$= \infty$$

3. High elasticity:

reaction এর opposite reaction অনেক বেশি.

$\Delta P < \Delta Q$



Price-এর ~~যতটুকু~~ change তার থেকে quantities change অনেক বেশি

$$OQ_2 - OQ_1 > OP_2 - OP_1$$

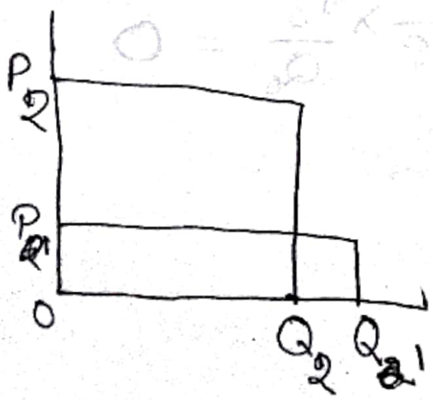
$$x > y$$

4. ~~Price~~ Low elasticity:

Price এর change অনেক বেশি. Quantitye এর change ~~less~~ বেশি

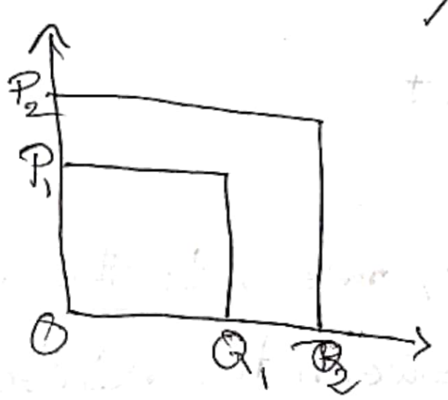
$$OP_2 - OP_1 > OQ_2 - OQ_1$$

$\Delta P > \Delta Q$



5. Unitary elasticity :

Δ Price $= \Delta$ Quantity



$OQ_1 - OQ_2 = OP_1 - OP_2$

Assignment - 2018, 2017, 2016.

Physics : CT

12.01.20 -> Sunday -> CH-5,6

14.01.20 -> Tuesday -> CH - 3,5.6 (12:30)

19.01.20 -> Thursday -> Full Syllabus.

Assignment : Short question

13.01.20 -> CH-5

18.01.20 -> CH-6

Java

12.01.20 → Only Code (basic)

18.01.20 → Java OOP

20.01.20 → Model test

Elasticity - The term elasticity refers to the measure of extend of relationship between two related variables. The elasticity of demand is a measure of the responsiveness of demand to changing price.

Suppose that the demand function of a commodity ie is

$Q_x = f(y)$

$$e = \frac{\Delta Q}{Q_x} \div \frac{\Delta y}{y} = \frac{\Delta Q}{Q_x} \times \frac{y}{\Delta y} = \frac{\Delta Q}{\Delta y} \times \frac{y}{Q_x}$$

[#] Price elasticity - The Price elasticity of demand is generally defined as the degree of responsiveness of demand of a commodity to the change in its Price. It is the ratio of percentage change in quantity demand of a commodity per unit of time in response to the percentage. A formal defination a price elasticity of demand (e_p) is

$$e_p = \frac{\text{Percentage change in quantity demand}}{\text{Percentage change in Price}}$$

Mathematically, $e_p = \frac{\Delta Q}{Q_0} \div \frac{\Delta P}{P_0}$

$= \frac{\Delta Q}{Q_0} \times \frac{P_0}{\Delta P}$

$= \frac{\Delta Q}{\Delta P} \cdot \frac{P_0}{Q_0}$

Where,
ΔQ = Change in quantity demand
Q_0 = Original quantity
ΔP = Change in Price
P_0 = Original price

☐ Income elasticity - The income elasticity of demand is generally defined on the degree of responsiveness of demand ~~from~~ for a commodity to the change in income. It is the ratio of percentage change in the ammount of commodity purchased per unit of time in response to the change in ~~co~~ income. A formal income elasticity of demand (e_y) is,

$$e_y = \frac{\text{Percentage change in Quantity demand}}{\text{Percentage change in income}}$$

Mathematically, $e_y = \frac{\Delta Q}{Q_0} \div \frac{\Delta Y}{Y_0}$

$= \frac{\Delta Q}{Q_0} \times \frac{Y_0}{\Delta Y}$

$= \frac{\Delta Q}{\Delta Y} \cdot \frac{Y_0}{Q_0}$

Where,
ΔQ = change in q.d
Q_0 = Original q.d.
ΔY = change in income
Y_0 = Original income.

Where,
\# e_y is negative the good is inferior.
\# e_y is positive the good is normal
\# $e_y > 1$ the good is luxury
\# $e_y < 1$ the good is normal/necessary

Cross Elasticity: The cross elasticity of demand is generally defined as the degree of responsiveness of demand for one good in response to the change in another good. In other words it means the degree of responsiveness of demand of a good to a change in the price is related to good ~~within~~ ~~max~~ which may be either substitute or complementary.

Let, x and y are two goods. So cross elasticity of demand x in respect to the change in price. y.

$$e_{xy} = \frac{\text{Percent Change in Quantity demand for } x\,(Q_x)}{\text{Percent change in Price of } y\,(P_y)}$$

Mathmatically: $e_{xy} = \frac{\Delta Q_x}{Q_x} \div \frac{\Delta P_y}{P_y}$

$$= \frac{\Delta Q_x}{Q_x} \times \frac{P_y}{\Delta P_y}$$

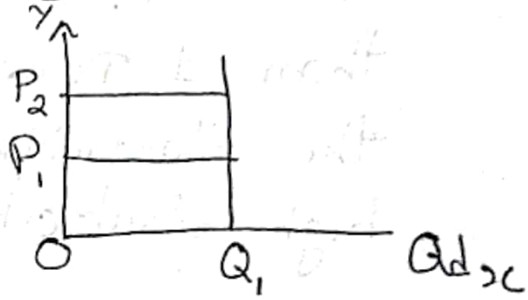
$$= \frac{\Delta Q_x}{\Delta P_y} \cdot \frac{P_y}{Q_x}$$

Where,
e_{xy} = cross elastity of demand
ΔQ_x = change in q.d of x
ΔP_y = change in price y
Q_x = original q.d of x
P_y = " price of Good y.

- Cross elasticity of demand between two substitute good is positive.
- betw two complementary good negative.
- When they are independent to each other, $e_{xy} = 0$

*Five Cases of elasticity:

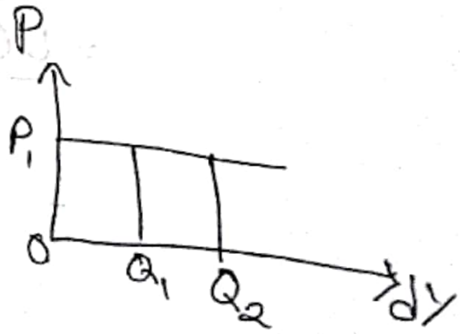
Perfectly inelastic demand or Zero elasticity:-



In this diagram vertical axis shows price and horizontal axis shows Quandity demand. In the above diagram OP_1 is original price and OQ_1 is original quantity demand. When Price rise from OP_1 to OP_2 then there is no change in Quantity demand. This can be expressed mathematically, $e_p = \frac{\Delta Q}{\Delta P} \cdot \frac{P_0}{Q_0} = \frac{0}{\Delta P} \cdot \frac{P_0}{Q_0} = 0$

this means change in Price has no effect on quantity demand

Perfectly elastic or infinite elastic.



When there is change in Q.d. but there is no change in Price then the elasticity is called perfectly elastic or infinite elastic demand.

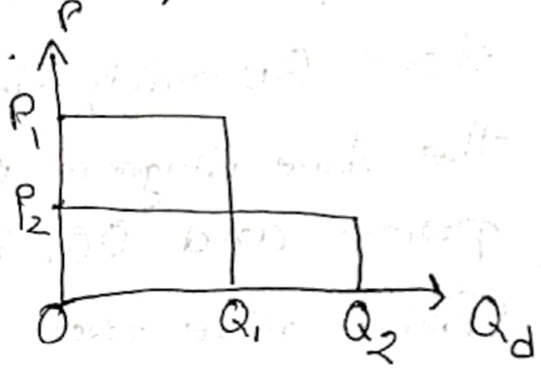
In the above diagram there in no change in price but the q.d. change from Q_1 to Q_2 this can be expressed mathematically.

$$e_p = \frac{\Delta Q}{\Delta P} \cdot \frac{P_0}{Q_0} = \frac{\Delta Q}{0} \cdot \frac{P_0}{Q_0} = \infty$$

this means that elasticity of demand is perfectly elastic

Relatively elastic demand or high elasticity:

When 1 percent change in Price results more than 1 Percent change in quantity demand than the elasticity is called relatively elastic or high elasticity of demand.



In the diagram, OP_1 is original Price and OP_1 is original quantity, when price decreases from OP_1 to OP_2 then Q.d. increases from OQ_1 to OQ_2 and the change in Q.d is more than price.

$$e_p = \frac{\Delta Q}{\Delta P} \cdot \frac{P_0}{Q_0}$$

$$= \frac{OQ_2 - OQ_1}{OP_1 - OP_2} \cdot \frac{P_1}{Q_1}$$

$$= \frac{Q_1 Q_2}{P_1 P_2} \cdot \frac{P_1}{Q_1} \quad \left[\because Q_1 Q_2 > P_1 P_2\right]$$

$e_p > 1$

18-01-20 → Java OOP, {CH-6 Physics}
19-01-20 → Physics Model test
20-01-20 → Java Model test
21-01-20 → Economic Model test

Define economic system: An economic system, or economic order, is a system of production, resource allocation and distribution of goods and services within a ~~se~~ society or a given geographic ~~ara~~ area

There are four types of Economic system:

1) Traditional
2) Market
3) Command
4) Mixed

The features of capitalist system:

- Private Ownership
- Capital Accumulation
- Capital Concentration
- Voluntary Participation
- Free market
- Wage labor
- Competition
- Welfare Capitalism

Advantage of Capitalist system :

- Economic efficiency : To minimum expenditure on as many levels as possible.
- Economic stability: Unemployment rate, inflation rate and real economic growth are som of economic indicators used to de
- Income distribution
- Economic growth
- AI

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2(b) What is supply? What are causes of change in supply?

Supply is an economic term that refers to the amount of a given product or service that suppliers are willing to offer to consumers at a given price level at a given period.

Causes of change in supply:-

1. Natural Condition
2. Technical Progress
3. Change in Factor Prices
4. Transport Improvement
5. Calamities
6. Monopolies
7. Fiscal policy

2014

2.(b) $Q_0 = 5$ units $\quad Y_0 =$ Tk. 50,000.00

$Q_1 = 8$ units. $\quad Y_1 =$ Tk. 65,000.00

Income elasticity, $e_y = \frac{\Delta Q}{Q_0} \div \frac{\Delta Y}{Y_0}$

$$= \frac{\Delta Q}{Q_0} \times \frac{Y_0}{\Delta Y}$$

$$= \frac{3}{5} \times \frac{50,000}{15,000}$$

$$= 2$$

Here $e_y = 2 > 1$ which means the ~~com~~ commodity y is ~~good and~~ luxurious ~~in~~ nature.

Monetary Policy: The policy that deals with money i.e. money management, money supply, credit control, money devaluation etc. is called monetary policy. It is very important economic policy of govt. The policy that controls money to acheive economic goals and monetary stability is monetary Policy. Central Bank i.e. Bangladesh Bank declares monetary policy. Open market operation, bank rate, reserve ratio and other credit control measures are instruments of monetary policy.

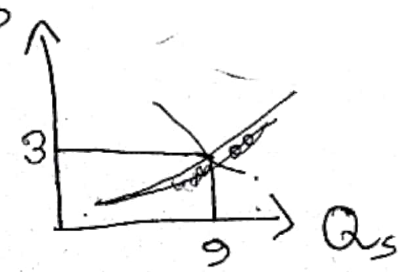
Fiscal Policy: Govt. policies related to govt. income and govt. expenditures to achieve economic goal of the govt. It deals with taxes, subsidies, govt. borrowing, govt. expenditure, govt. budget, public works program etc. Govt. ~~g~~ declares fiscal policy.

~~Wh~~ Write down an equilibrium situation from demand and estimation.

Let, us assume that the Quantity demand ~~curve~~ equation $Qd = 18 - 3p$ and the Quantity supply equation be $Q_s = -3 + 4p$. Then the estimations are,

Price	Quantity demand	Quantity Supply
1	15	1
		5
2	12	
		9
3	9	
4	6	13
5	3	17

Here, we can see that the equilibrium in market is at the price of 3 where the quantity of supply and the demand is equal.



3b. What are the problems of measuring national income?

There are ~~are~~ mainly 2 types problem in measuring national income.

① Conceptual difficulties

ⓐ It is difficult to calculate the values of some of the items such as services rendered for free and goods that are to be sold but are used for self consumption.

ⓑ There is problem in selecting the proper price level for primary intermediate and final goods.

ⓒ ~~The~~ What price to choose to determine the monetary value of National Product is always a difficult question

ⓓ There lies question on ~~what~~ whether to include foreign companies in National Income.

② Statistical difficulties.

ⓐ In case of changes in price level, we need the Index no. which has their own inherent limitations.

ⓑ Statistical figures are not always accurate based on sample surveys. Also, all the data are not often available

ⓒ All countries have different methods of estimating National Income. Thus it is not always easily comparable.

4.(b) Write down current five years plan of Bangladesh govt. (Ans (below Ans is for youths & children)

Ans: The current plan is the 7th five years plan. This development plan includes,

1. Compolsury pre-primary education
2. Establishment of several recreational place for children
3. Making education science based.
4. For better health outcome establish wash blocks in primary schools.
5. Involvement of ICT in the secondary & higher secondary level.
6. Establish several hospitals to deal with mental problem as particularly found in youth.

In macroeconomics, an economy consists of four sectors such as (i) Houshold sector (ii) Business sector (iii) Govt. sector (iv) Foreign sector or Rest of the World sector

A.t. 4 sectors of economy, GNP components are 4 categories.

(i) Consumption expenditure (C) in household sectors
(ii) Investment (I) in business sector
(iii) Govt. expenditure (G)
(iv) Net exports (X-M)

$\therefore GNP = C + I + G + (X-M)$

Net National Product (NNP):

$NNP = GNP - \text{Depreciation of capital.}$

Gross Domestic Product (GDP): The money value of the total final product produced inside the geographical territory of a country during a year is called GDP.

The Objectives of 7th 5 year plan of Bangladesh: Accelerating growth & Empowering every citizen

1. Empower people with more employment and skill development opportunities, supply credit for SME development, and introduce ways to make people more productive.
2. Emphasize social protection, urban transition and sustainable development pathway.
3. Reduce proverty rate
4. Increase rate of investment.
5. Safe drinking water to be made available for urban & rural population

	Capital ~~Budget~~ Expenditure	Revenue ~~Budget~~ Expenditure
duration	The amount to be spend on the more valuable goods or services used for long duration.	The amount ~~of~~ to be spend on the more valuable goods or services used for short duration
Benefit	Benefit for current year as well as in future years	Only for current year.
Capitalized	Will be capitalized	Will not be capitalized
Need	To improve working capacity	To run ~~ex~~ existing business.
Sub categories	No Subcategories	2 sub ① Direct expenses ② Indirect "

Given, $Q_0 = 8$ units $\qquad P_0 = Tk\ 125$

$Q_1 = 12$ " $\qquad P_1 = Tk\ 150$

We know,

$$C_p = \frac{\Delta Q}{Q_0} \div \frac{\Delta P}{P_0}$$

$$= \frac{4}{8} \div \frac{25}{125}$$

$$= \frac{4}{8} \times \frac{125}{25}$$

$$= \frac{5}{2}$$

$$= 2.5$$

Comment: The product is luxurious

Monopoly:
2011, 2 (c)

$Q = 50 - 2P$

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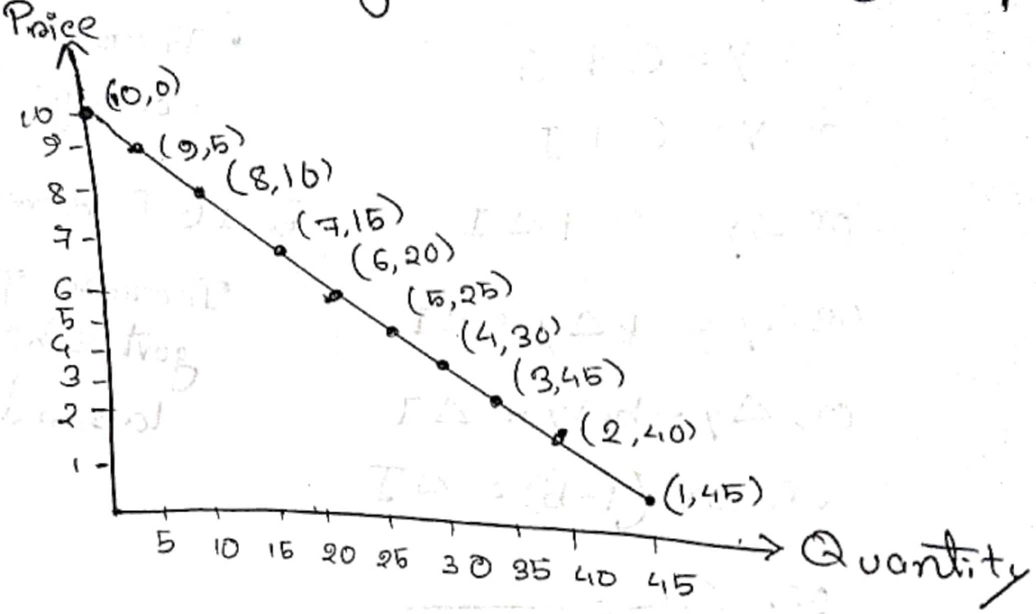
2(a) Draw the demand curve using demand equation $Q_d = 50 - 5p$

P	Q_d
1	45
2	40
3	35
4	30
5	25
6	20
7	15
8	10
9	5
10	0

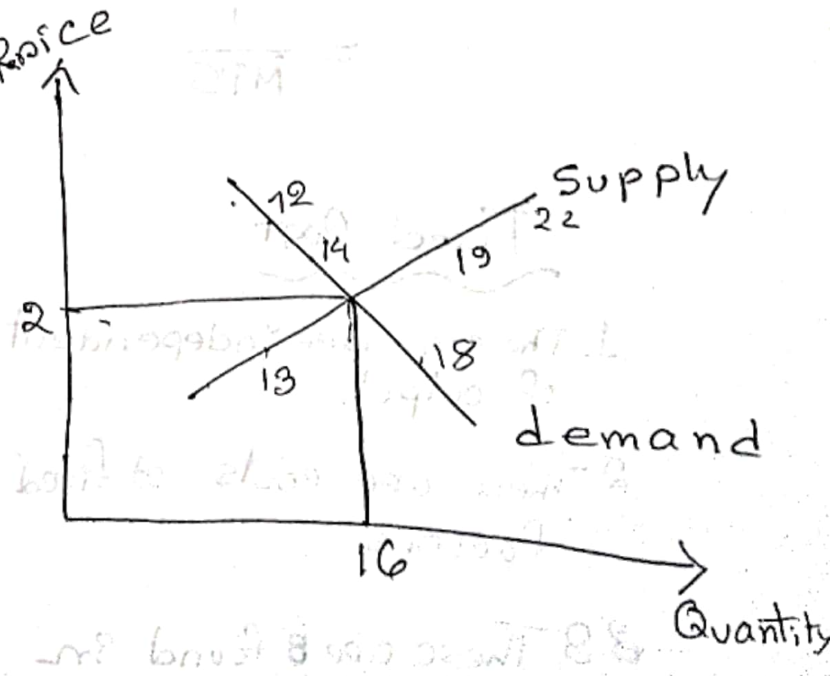


(e) Given,

$Q_d = 20 - 2P$

$Qs = 10 + 3P$

Price	Q_d	Qs
1	18	13
2	16	16
3	14	19
4	12	22



Here, equilibrium price is 2
& equilibrium quantity is 16

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5(b) We know,

$$y = C + S$$

or, $y = C + I$

or, $\Delta y = \Delta C + \Delta I$

or, $\Delta y = b\Delta y + \Delta I$

or, $\Delta y - b\Delta y = \Delta I$

or, $\Delta y(1-b) = \Delta I$

or, $\frac{\Delta Y}{\Delta I} = \frac{1}{1-b}$

$$= \frac{1}{1-mpc}$$

$$= \frac{1}{MPS}$$

I. Environment sustainability

- Increase productive forest coverage by 20%

J. ICT development

- Increase proportion of primary govt school with computer laboratory.

Fixed Cost	Variable Cost
1. The cost are independent of output.	1. The cost vary with the level of output.
2. These are costs of fixed factors.	2. These are costs of variable factors.
3. These are found in short period.	3. These are found in both short & long period.
4. These are supplementary costs	4. These are prime costs

$Y = C + S$

$= C + I$

$\Delta Y = \Delta C + \Delta I$

$= b\Delta Y + \Delta I$

$\Delta Y - b\Delta Y = \Delta I$

$\Delta Y(1-b) = \Delta I$

$= \frac{1}{1-MPC}$

$= \frac{1}{MPS}$

F. Water & sanitation
1. Safe drinking water
2.

G. Energy & Infrastructure
1. Electricity coverage increase to 96 %

4. Gender equality, income inequality & social protection
1. Literate 20-24 age group to 100%. (current 96%).

Plan Goals & Targets 7^{th} FYP

A. Income & Poverty
i. Attain average GDP growth 7.4% per year.
ii. Reduce poverty by 4% point.

B. Sector Development
i. Increase by 20% GDP

C. Macro economics development.
i) Total revenue raised from ~~def~~ deficit 5% of GDP

D. Urban development.
i. Access to water source to all urban dwellers

E. Human Resource Development.
i. Achieve 100% net enroll in primary & secondary
" 60% " " " 12^{th} class

Budget:	Revenue	Capital
Includes	① Revenue Receipt ② " Expenditure	① capital Receipt ② " Expenditure.
Meaning of types	① Govt. recepits that neither creates liabilities for govt. nor cause reduction of assets. ② Neither creates any assets nor causes reduction of liability	① Either create asset (of payment of loan) or reduce assets (on disinvestment) are capital. ② Either creates assets for govt. or cause reduction of liabilities of govt.
Example	R.R: income tax, gift tax, sales tax. R.E: Salaries & scholarships, old age pension	CR: Recovery of loans CE: Equity of domestic or multinational corporations purchased by govt.