

(1)

a.

Substitution effect refers to the change in demand of a product as a result of change in its price or the price of closely related product.

Substitution effect (SE) along with income effect (IE) is responsible for deciding the nature of goods.

Normal Goods :

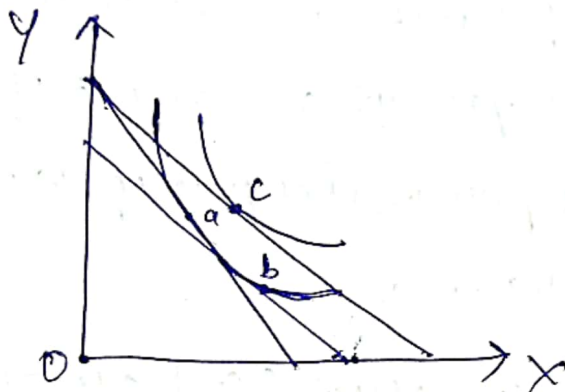


⇒ for normal goods the income effect is always positive and substitution effect is always negative.

$$\frac{dx}{dp} < 0 \quad \& \quad \frac{dx}{dm} > 0$$

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
Content of the answer is more important than its length.

Inferior Goods.



for inferior goods IE is negative $\frac{dx}{dm} < 0$.
and SE is also negative $\frac{dx}{dp} < 0$.

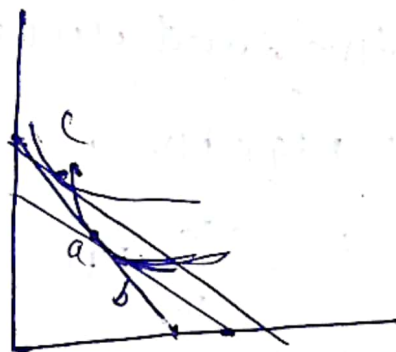
∴ The overall effect depends on the
strength of both SE & IE .

when substitution effect is greater than
Income effect, it is a Inferior good.

Giffen Goods

$$IE > SE.$$

→ when income effect is greater,
and substitution effect is weak, then
it is a Giffen good



$$SE < IE.$$

(b) Marshallian and Walrasian approaches of Price determination are interdependent.

Marshall considers that quantity demanded and quantity supplied together decide the price. Equilibrium price is achieved when

$$Q_d = Q_s$$

Whereas, Walras considers that adjustments in price determine the equilibrium levels of Q_d & Q_s .

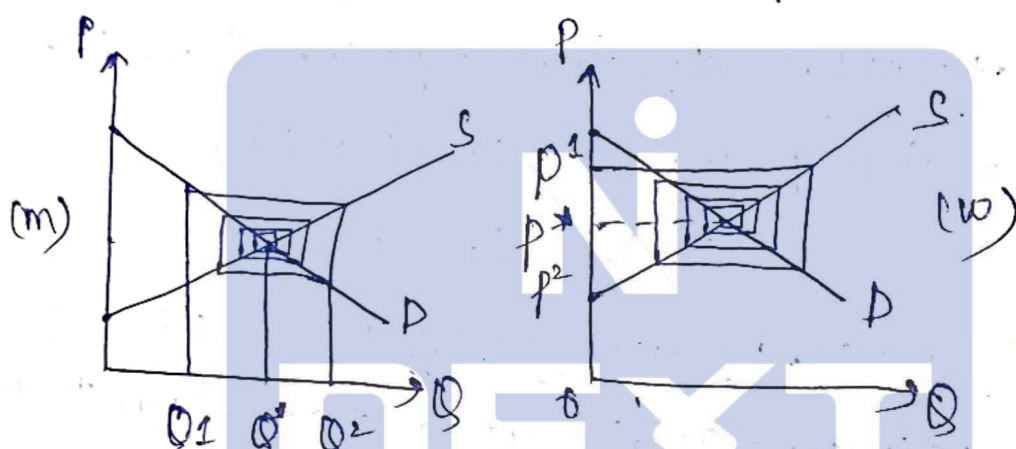
Quantity adjustments → determines → Price | Marshall

Price adjustments → determine → quantity | Walras

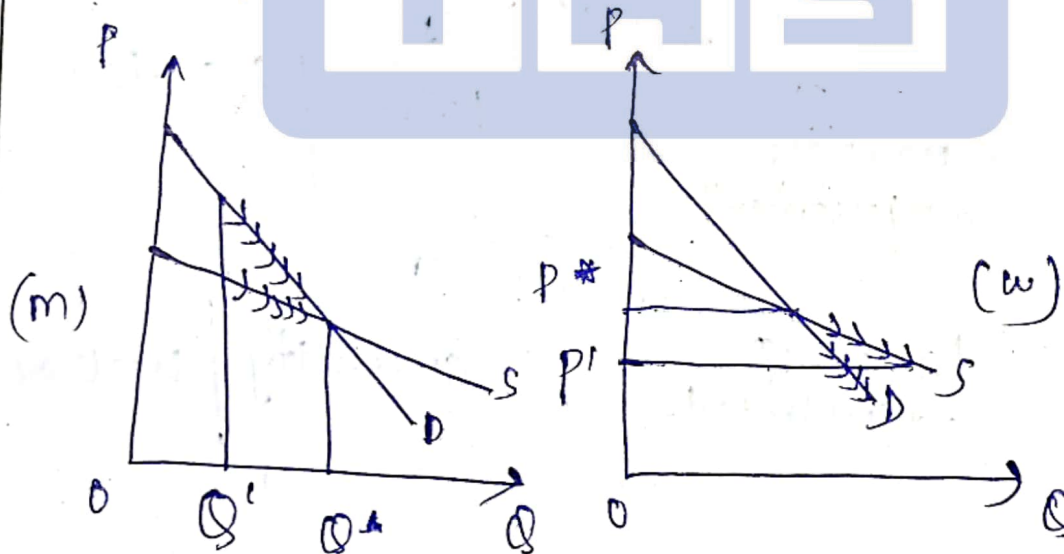
Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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But, stability in Marshallian equilibrium doesn't always ensure Walrasian stability.

Case I: Marshallian stability ensures Walrasian stability.



Case II: Marshallian stability doesn't ensure Walrasian stability.



stable $\Rightarrow$ unstable Q ,

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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(C)
Ans

Monopoly power can be measured using cross price elasticity, monopoly profits, the degree of price discrimination and size of the firm. There are different methods (Indices) devised based on these concepts.

(1) Lerner's Index:

$$\left[\frac{P - MC}{P} \right] = \frac{1}{e_p}$$

Monopoly power is higher when the demand for the good is less elastic. Higher the elasticity, lower the price it can charge above MC.

(2) Bain's Measure:

$$AR - AC = \text{Average profits}$$

Higher the average profits in long run, higher the monopoly power.

(3) Herfindahl-Hirschman Index

$$H = \sum_{i=1}^n s_i^2$$

Higher the size of the firm in relation with whole industry higher the monopoly power of the firm.

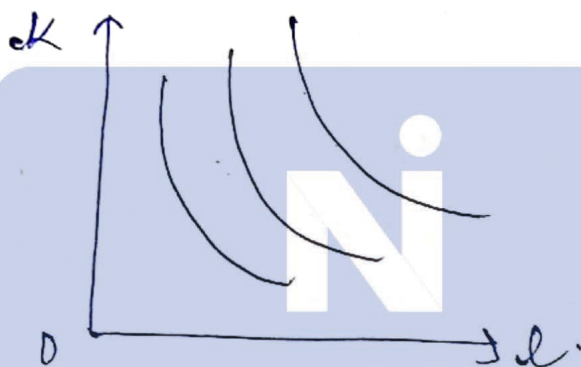
(4) Cross price elasticity

Lower the cross price elasticity of demand in the market for the firm's product, higher the monopoly power.

Index	PC	Monopoly
Levens	0	1
Barns	0	$AR > AC$
HHI	0	1

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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- (d) Isoquante represents ^{all} the combination of kind & that can provide same level of output.



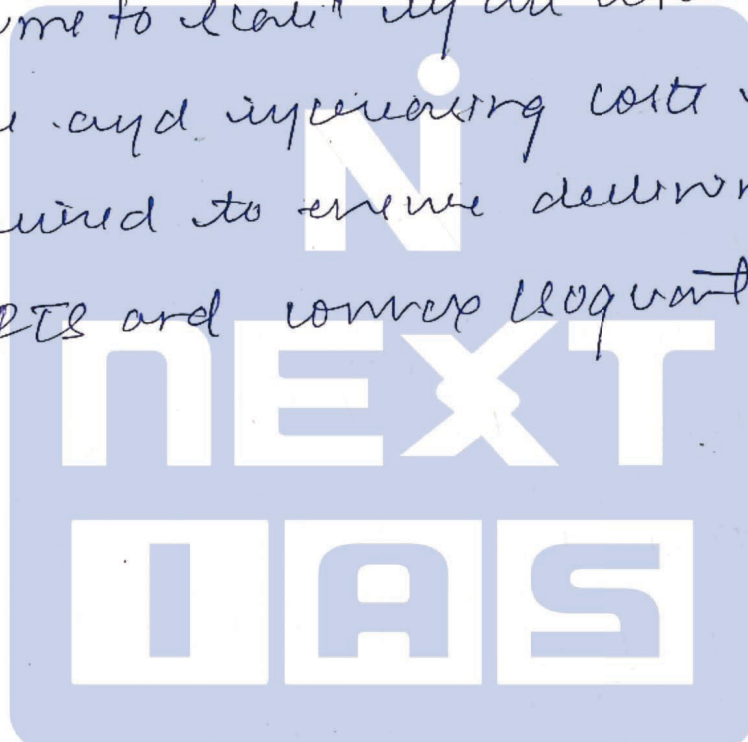
They are convex to origin because of diminishing marginal rate of technical substitution.

MRTS is the rate at which marginal unit of an input can be substituted with another input for production of same level of output.

△ Though diminishing Marginal

productivity of factors is necessary for ensuring a declining MRTS, but it is not "sufficient".

Along with diminishing marginal productivity, "Diminishing return to scale" in all circumstances and increasing costs is required to ensure declining MRTS and convex isoquant.



Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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- (e) Kaldor's model of income distribution is similar and based on Keynesian model, that believed in demand side equilibrium. It is the only model that uses macroeconomics specifically.

Share of profits in the total income (P)
(P)
income (Y)

$$\Rightarrow \frac{P}{Y} = \frac{I/Y - \frac{S_w}{S_p - S_w}}{S_p - S_w} \quad \text{Kaldor's eq.}$$

$\Delta \frac{P}{Y}$ depends on $\frac{I}{Y}$ (i.e.) the degree of investment (I).

$\Rightarrow$ higher I = $\uparrow \frac{P}{Y}$.

$\Delta \frac{P}{Y}$ also depends on marginal propensity save for wages (S_w) and profits (S_p) earners.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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$$\Rightarrow \text{higher } sp = \downarrow \frac{P}{Y}$$

Kaldor stated that during recessions the capitalists will accept a lower profit margin to boost demand and will dis-investing to sustain growth.

Criticism:

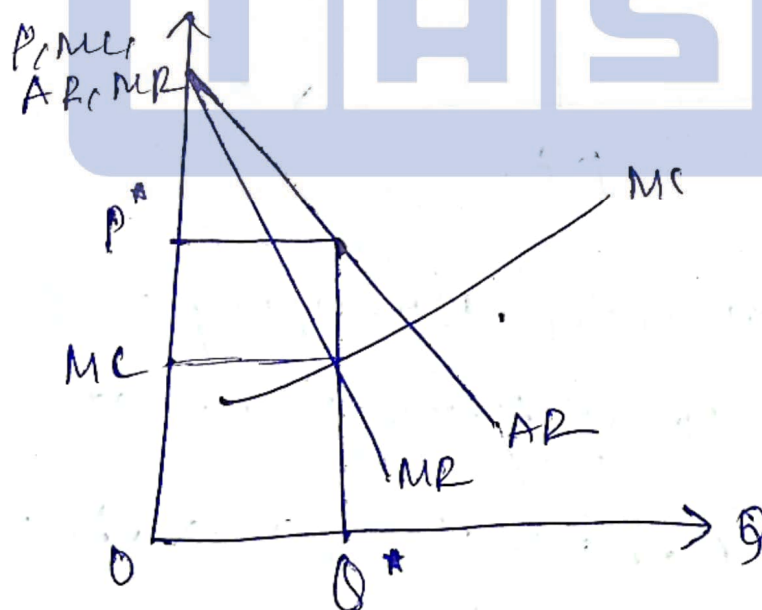
- △ model ignores technological improvement which can increase both $\frac{P}{Y}$ and $\frac{W}{P}$.
- △ ignores "Human capital", which can add to the labor's productivity
- △ ignores degree of sustainability of worker & machines.

Despite theoretical restrictions Kaldor's model is considered important in determining share of capitalist in total Income.

30
(a)

Existence of monopoly in the market allows the "only firm" to charge price above its marginal cost (MC). This is possible because there are no close substitutes available in the market for the monopolist's product. This makes the demand inelastic.

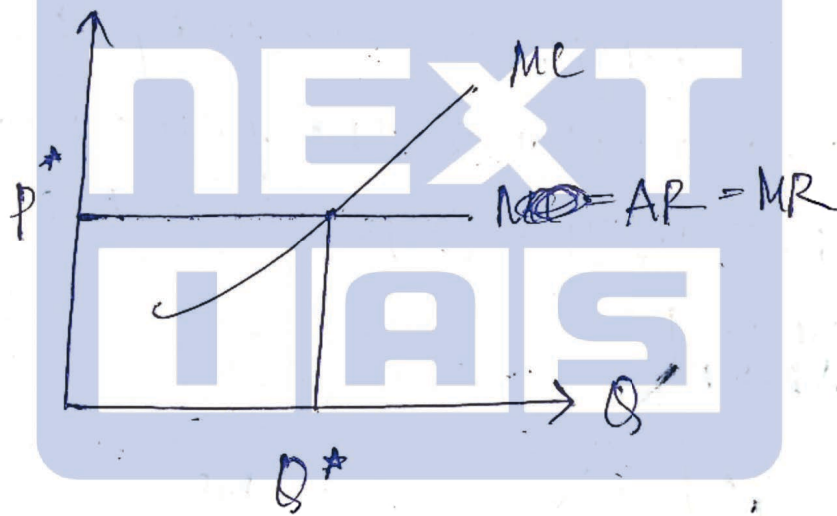
Higher the elasticity of demand, lower the price a monopolist can charge above MC.



Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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In perfect competition where all the firms sell homogenous products, an individual firm lacks the ability to influence price.

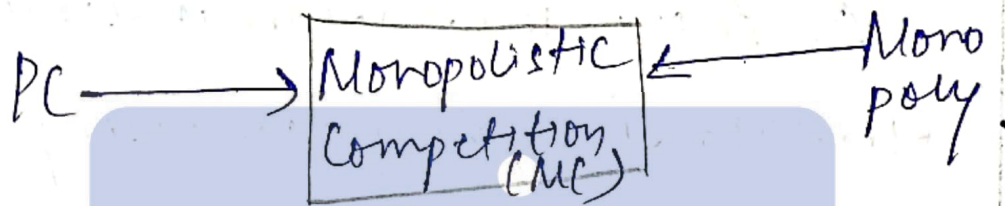
The existence of ~~too~~ many firms and active competition pushes the price downwards until it equals MC.



However, monopoly and perfect competition are both extreme situations and they are unrealistic.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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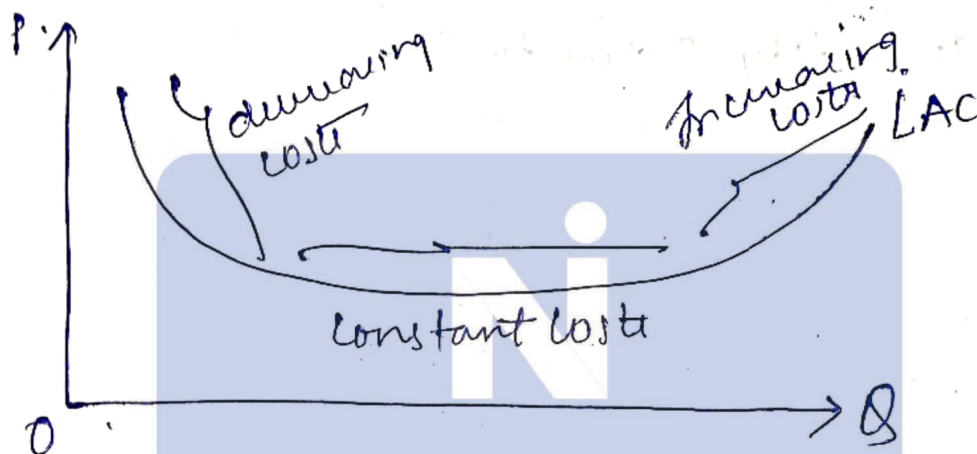
In real world, there exists markets where "price" are above firm "MC", without existence of perfect monopoly.



Δ In MC, price can be above Marginal cost. This is possible due to existence of differentiated products, marketing strategies, selling costs, "product group" and other factors with existence of a perfect Monopoly.

(b)

returns to scale play an important role in determining the shape of long run ^{Avg} cost curve.



A increasing returns to scale leads to more than proportionate increase in output when the inputs are increased. This results in lower average costs as higher quantity of output can be produced with lesser inputs.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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Δ Constant returns to scale results in equal or proportionate increase in output when inputs are increased. Therefore, the long run Avg costs stay constant at same quantity of output is produced with same inputs.

Δ Decreasing returns to scale cause the output to increase less than proportionate as a result of increasing inputs. Hence, the long run avg costs increase.

∴ IRS $\Rightarrow$ downward sloping LAC

DRS $\Rightarrow$ upward sloping LAC

CRS $\Rightarrow$ horizontal LAC.

(C)

Michal Kalecki developed the theory of distribution based on "Lerner's Index" and with the following assumptions.

Δ Imperfect competition

Δ Constant Marginal cost

$$\therefore MC = AC$$

Δ Marginal cost only measures the cost of manual labor and raw material.

Lerner's Index: $\frac{P - MC}{P} = \frac{1}{ed}$

- It determines the monopoly power. Higher the price elasticity of demand lower the monopoly power.

He uses learner's index in his theory because of his initial assumption of imperfect competition.

$\bar{u} \rightarrow$ gross capitalists income.

$$\Rightarrow u = \frac{P - MC}{P} = \frac{P - AC}{P}$$

$Pu = P - AC \Rightarrow$ per unit of income for capitalist.

$u \cdot Px = (P - AC)X \Rightarrow$ total income of capitalists

$$\sum u \cdot P \cdot X = \sum (P - AC) X$$

$$\boxed{\bar{u} = \frac{\sum (P - AC) X}{P}} \text{ --- eq.}$$

Conclusions

- △ The equation represents gross capitalists Income.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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- Δ Capitalists favour new competition and erect technological changes that result in production of substitutes
- Δ Increase in $\bar{M}$, will reduce the share of wages.
- Δ Increase in $\bar{M}$, will increase the ability of firms to charge more price.
- Δ Supply shock (sudden increase in price of inputs) will always increase the share of capitalist by increasing prices.
- Δ The share of labour in total income stays constant due to cyclical inconsistencies.

Q4

(a)

Arrow's impossibility theorem states that it is certainly impossible to make social choice entirely based on individual choice.

Any social welfare decision that depends on individual decisions violates at least one of the following principles.

(i) Transitivity of preferences

(ii) Social choice must be responsive to individual preferences

(iii) Condition of non-imposition

(iv) Condition of non-dictatorship

(v) Independence of irrelevant alternatives.

Arrow state that what majority of the people want in a society may not result in maximum welfare. He state that social choice cannot be based on individuals because individuals may be consistent, but the resulting social decision may be contradictory.

Ex: Condorct Paradox of democracy.

Outcome and Implications

A impossibility arises not due to dependency of social decisions on individual preferences, but because of choice being made based on limited set of information.

△ Actuality of perfect and free information is not possible in real world. As long as information is incomplete, Arrow's theory is valid.

△ Using 'interpersonal comparisons', to tackle the impossibility. But it is not often possible to accurately devise parameters for such comparisons. As long as interpersonal comparisons are not possible, the Arrow's impossibility is valid.

△ Those decisions that relate to just a "community" of an individual are not a matter of social choice.

But Tony Nick, stress on minority rights to ensure moral social decisions invalidate this criticism.

Q
B
(1)

Given

$$\Rightarrow AC = MC = 10$$

$\Rightarrow$ demand function

$$Q = 60 - P$$

~~Integral~~ inv.

$$P = 60 - Q \rightarrow \text{Inverse demand function}$$

$$PQ = 60Q - Q^2$$

$$MR = 60 - 2Q$$

$\Rightarrow$ Monopolist produces at $MR = MC$

$$MR = 60 - 2Q = 10 = MC$$

$$2Q = 50$$

$$\boxed{Q = 25}$$

$$P = 60 - 25$$

$$\boxed{P = 35}$$

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

$$10 = \frac{TC}{25}$$

$$TC = 250$$

$$\pi = 875 - 250$$

$$= 625$$

$$\text{Prof/ste } PQ = 875 \%$$

$$(2) \cdot Q = 45 - 0.5P$$

$$0.5P = 45 - Q$$

$$\frac{P}{2} = 45 - Q$$

$$P = 90 - 2Q$$

$$MR = MC$$

$$PQ = 90Q - 2Q^2$$

$$MR = 90 - 4Q$$

$$\Rightarrow 90 - 4Q = 10$$

$$4Q = 80$$

$$Q = 20$$

$$P = 90 - 2(20)$$

$$= 90 - 40$$

$$P = 50$$

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

$$10 = \frac{TC}{20}$$

$$TC = 200$$

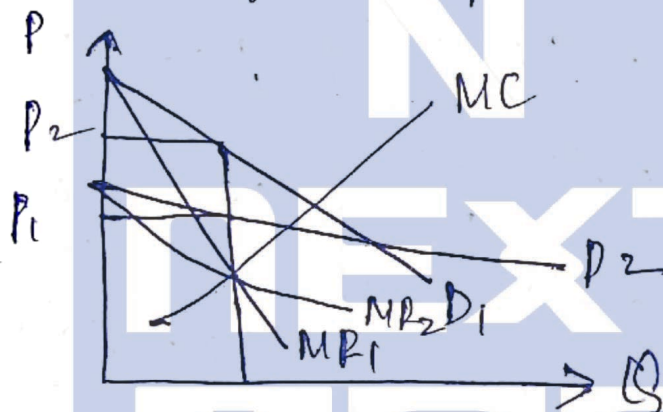
$$\text{Profit} = 50 \times 35 - 200$$

$$= 1650 - 200$$

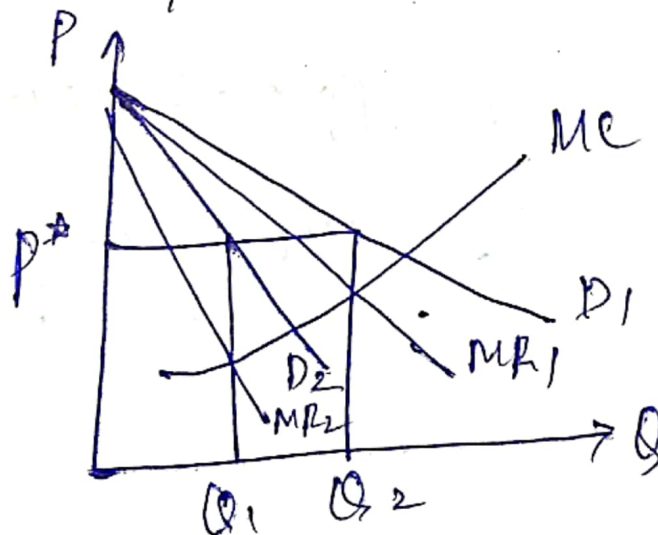
$$= 1450 //$$

A Monopoly firm doesn't have a dual supply curve because there is no unique relationship between price charged by the monopoly and the quantity supplied by it.

(a) Same quantity at different prices



(b) different quantity supplied at same prices.



(9)

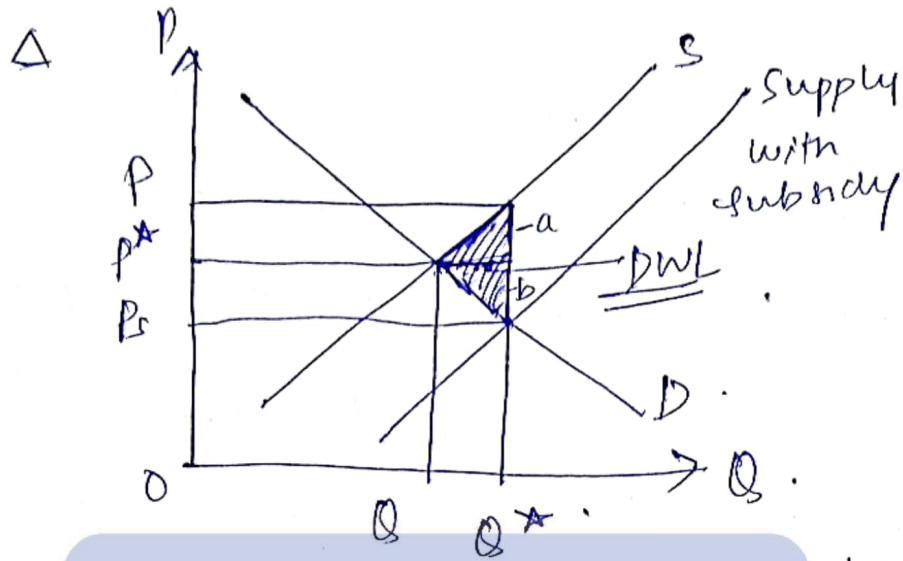
(C)

Direct subsidy involve actual payments in "Cash or kind" to the individuals. Ex: direct benefit transfer of "LPG" subsidy.

Whereas, indirect subsidies do not involve actual payments. They are directed to benefit the individuals in form of less price, cut in tax, subsidized loans - etc.

Indirect subsidies cause distortions in production or consumption in the market. They create inefficiency and results in deadweight loss.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
Content of the answer is more important than its length.



an indirect subsidy given to producers, say as input subsidy on fertilizers, to reduce their prices for the benefit of individuals concrete dead weight loss (DWL)

△ The producers receive a higher price P' , and the consumers receive can purchase products at subsidized price.

△ Triangle 'a' in the diagram

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represent ~~loss~~ welfare loss due to distortion in production (excess production).

A Triangle 'b' represents loss in welfare due to distortion in consumption (excess consumption).

A direct subsidy such as cash payments, can also provide the same benefit to the individual, but with creating welfare loss.

△ Hence individuals are always better off with direct subsidy.

SECTION-B

Q5.

(A)

Oran's law predicts the relation between unemployment and output growth. Based on it, a corollary is that, any attempt to restrict inflation or to carry out disinflation will reduce the output (Philip's curve), increase unemployment and cause a recession.

Sacrifice ratio: It is the ratio of percentage loss of output (%) due to reduction in inflation.

Sacrifice ratio: $\frac{\text{loss of output}}{\text{disinflation}}$

Ex: reduction in inflation is 6%.
fall of output is 24%

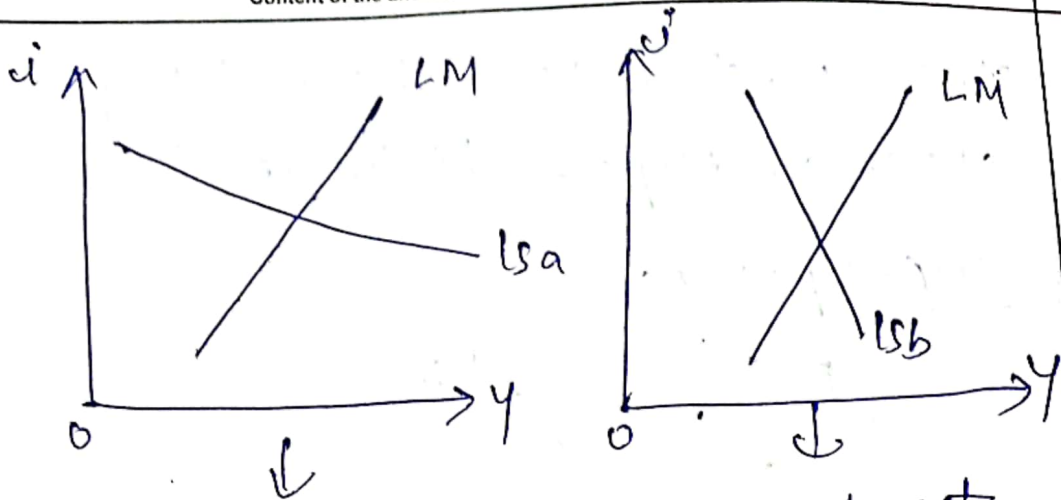
$$\underline{\text{Sacrifice ratio} = 4\%}$$

Utility of sacrifice ratio:

- Δ The sacrifice ratio clearly explains the cost of fighting inflation in terms of output loss.
- Δ The ratio changes over time, place and also varied on the methods used to reduce inflation.
- Δ A policy that results in less sacrifice ratio must be preferred.
- Δ To ensure a lower ratio, the policy must be announced in advance, the reduction should be gradual, and the response of prices and wages to demand conditions must be high.

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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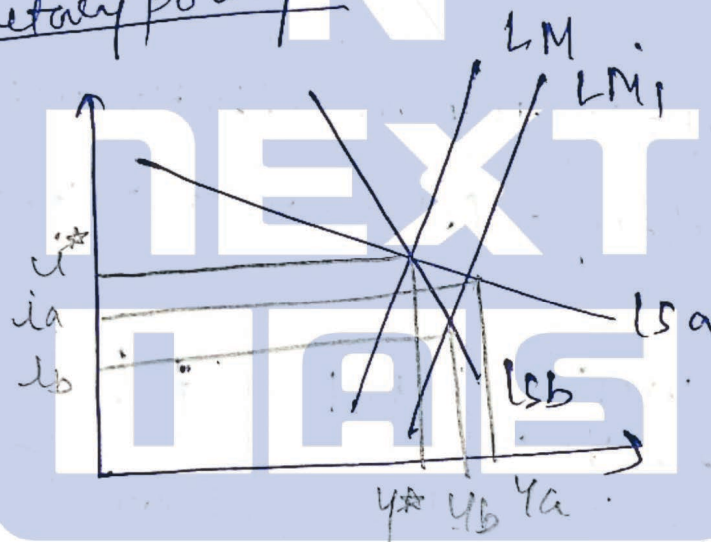
(Q)



high ~~low~~ interest
rate sensitive

low interest
rate sensitive

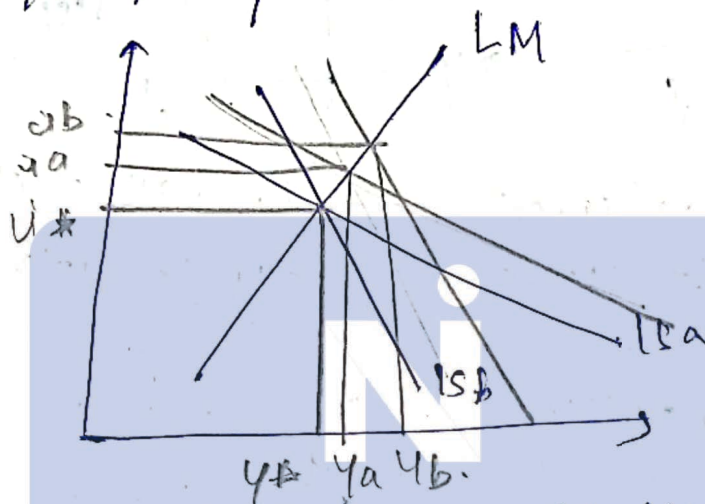
Monetary policy



∴ Monetary policy is more effective
when IS is flatter as it leads
monetary expansion leads to
lower decrease in interest rate
and higher increase in (i_a)
income (Y_a)

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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than that would have been
with a steep IS curve.
Fiscal policy.



Fiscal policy is more effective when
IS is steep (low interest sensitivity).

Interest sensitivity	MP	FP
low	less effective	more effective
high	more effective	less effective

⑤

(d) Multiplier.

$$Y = AD.$$

$$AD = C + I + G + NX.$$

$$\therefore Y = \bar{C} + c(Y - TA + TR) + \bar{I} + \bar{G} + \bar{NX}$$

$$= \underbrace{cY - cTA - cTR + \bar{C} + \bar{I} + \bar{G} + \bar{NX}}_{A}$$

$$Y = cY + A$$

$$Y - cY = A$$

$$Y(1 - c) = A$$

$$\boxed{Y = \frac{A}{1 - c}}$$

when investment is function of

Income

$$I = \bar{I} + bY.$$

$$Y = cY + bY + A.$$

$$Y - cY - bY = \bar{A}$$

$$Y(1-c-b) = \bar{A}$$

$$Y = \frac{\bar{A}}{(1-c-b)}$$

Autonomous multiplied increase
when ~~interest~~ investment is
also the function of income.

N
NEXT
DAS

5. (e) Classical dichotomy

△ The separation of real and nominal variables and their effects is called classical dichotomy. This arises because in classical theory changes in money supply do not influence "real variables".

△ Therefore, the effects of real variables & nominal variables are studied differently.

Money neutrality.

△ It is the irrelevance of money to effect real variables is called money neutrality.

△ Money neutrality is based on classical dichotomy and

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also classical dichotomy is
based on money neutrality.

△ Existence of independence between
real and nominal variables is
necessary for the neutrality of
money.

△ If Nominal variables like
the Nominal value of money,
efforts output (the real variables)
the money neutrality doesn't
exist.

classical dichotomy

Money Neutrality

(5) a

Monetarists and classical agree that

(i) free market economy, eventually, ensure full employment level of income. Hence, both discourage the role of government

(ii) Both agree that Monetary policy and fiscal policy cannot affect the level of unemployment and output in long run.

(iii) They agree that increase in money supply will lead to an increase in overall spending.

(iv) Monetarists do agree with the Quantity theory of money by classical that money supply

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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and nominal income that one to one relationship in both short run and long run. However, monetarists prefer a less rigid version.

(v) Both agree that money doesn't matter in long run. However, monetarists believe that, unlike the classicals, money supply can influence relative prices in short run.

(vi) Monetarists also believe that in short run, money supply can affect relative prices and cause unemployment to deviate from natural rate of

④.

(a)

The process through which monetary policy decisions affect the price interest rate and Income level is called transmission Mechanism. An effective monetary policy requires a quick and strong transmission mechanism.

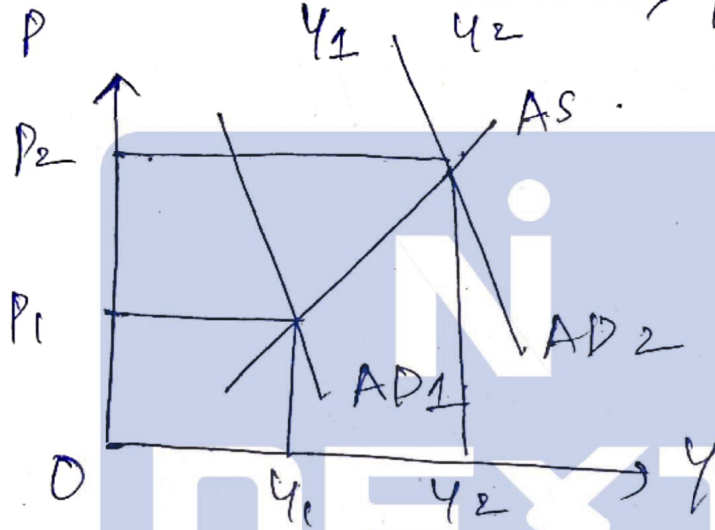
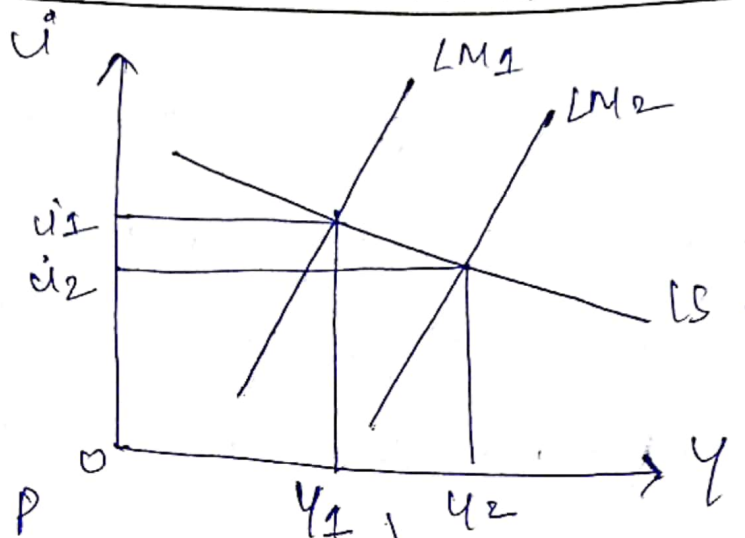
Autonomous multiplier:

Δ changes the multiplier higher the effectiveness of monetary policy.

A higher multiplier results in flatter IS curve, and a steeper AD curve.

Δ A higher multiplier means that even a small change in Aggregate demand will have

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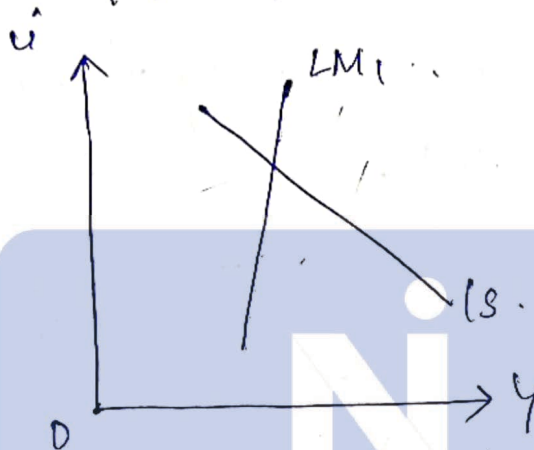


more than proportional change in
 Y -Income.

Income sensitivity of Money demand

if the income sensitivity of money demand is high, the LM curve is steeper, and also steeper the AD curve.

it means for an increase in real money balances, a larger increase in income is required to increase the $(\frac{M}{P})^d$.
Monetary policy is more effective



owing to easy transmission.

Endogenous money supply:

→ Endogenous money supply is the money supply in the economy that is not determined by the central bank. It is endogenously determined by various factors.

→ Presence of higher endogenous money supply 'weakens' transmission mechanism.

(7)

(b)

According to the Keynesian theory of money demand, the transaction demand (TD) of money is "always & only" dependent on Income (Y).

Y and TD are positively related.

$$\cancel{P} \quad [MV = PT]$$

here " P " — measure transaction.

→ Increase in income leads to an increase in number of transactions using money.

→ ∴ People also hold money or real cash balance ($\frac{M}{P}$) for the purpose of transactions.

But, later theories of money demand expanded the scope of TD.

Baumol, in his inventory theory of money demand disagrees with Keynes and stated that TD of money is the function of ^{only} interest rate and not Income.

He considered that the only use of money is for the sake of transactions.

A TD is hence, according to Baumol, dependent on interest rate and also the Brokerage fee required not hold money or to hold alternative assets (Bonds).

Answer question in NOT MORE than the word limit specified for each in the parenthesis.
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The optimum Cash required for transactions is determined by minimizing cost.

Baumol's formula:

$$\text{Transaction demand for Money} = \sqrt{\frac{2bY}{r}}$$

$Y \rightarrow$ Income

$r \rightarrow$ Interest rates

$b \rightarrow$ brokerage fee

(7)

Q

Friedman reinterpreted the Quantity theory of money propounded by classical. Monetarists under Friedman agreed with the Keynes theory of money demand at on many grounds. They agreed that money demand depends on nominal income.

But, Monetarists and Keynesians differed from each other on many grounds.

Differences

(1) $M \Rightarrow$ money demand is stable

(2) $K \Rightarrow$ money demand is unstable. It changes with the

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public confidence in economy.

(2) $M \Rightarrow$ Recognises different aspects of money demand but doesn't find it helpful to separate them based on use of money.

$K \Rightarrow$ Identifies three different kinds of use for which money is demanded.

(a) Transaction demand

(b) Speculative demand.

(c) Precautionary demand.

(3) $M \Rightarrow$ Broad choice available to people ^{as} alternative to money.

Bonds and durable goods.

$K \Rightarrow$ Considers narrow choice of alternatives to

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holding money. Only Money or Bonds

(4) $M \Rightarrow$ Velocity of money is not constant. It depends on the rate of return of assets alternative to money.

$K \Rightarrow$ Considered velocity of money as constant.

(5) $M \Rightarrow$ Interest elasticity of money demand is very low.

$K \Rightarrow$ Interest elasticity of money demand is high.

(6) $M \Rightarrow M^d = K(r_B, r_D, r_F)PY$

$K \Rightarrow M^d = KPY.$