Microeconomics

Chapter - Supply & Elasticity of Supply

Q What do you mean by Supply?

Supply refers to the quantity of a product which a seller is ready to sell at a particular price during a particular period of time.

Q What are the different kinds of Supply?

Following are the different kinds:

Market Supply: It refers to the current supply of the product in the market. The time period is so short that the supply cannot be changed beyond the stock level.

Short Period Supply: It refers to that supply which can be changed beyond the capacity of fixed factors because the time period is too short that only variable factors can be changed in order to increase the supply.

Long period Supply: Long period refers to that time period which is sufficient to make changes even in the fixed factors of production. So the supply can change to any extent.

Joint Supply: When a main commodity is produced, some additional goods are automatically produced. This is called as joint supply for example production of hay, along with the wheat.

Composite supply : when demand of a particular product is met through different alternatives, the supply is said to be composite supply for example demand of light can be met through different sources like candle, tubelight, bulb etc.

Q3 What are the factors which affect individual supply ?

Following are the factors.

Price of the product : Price of a commodity is the most important factor affecting supply. It has a positive relationship with the price that is when price of the product increases, its supply also increase & vice-a-versa, keeping other things as constant.

Price of related goods : Supply of a product also get affected by change in price of related goods, when price of related good increase, it becomes more profitable for the seller to sell that commodity. Therefore, he increases the supply of related commodity.

Goal of the firm : The supply of a commodity also depends upon goals of the firm for instance if the goal is to maximise the profits, then supply will be at a higher price & if it to maximise sales, then more quantity will be supplied.

Input prices : A change in the input price also affects a firm supply curve. If price of an input increases, the cost of production increases, as a result profit margin falls & producers decreases the supply.

Technological Progress : If a producer makes use of an improved technology then he can produce larger number of units with the similar amount of inputs. In this case the firms average cost is expected to decrease

Q4 What are the factors which affect market supply of the product?

Following are the factors :

Number of Producers : If number of producers producing the commodity increase in the market, the supply of the product also increases & vice-a-versa.

Future Expectation of change in Price : If the Sellers are expecting Increase in the future price that would reduce the current supply so that they earn more in the future & vice-a-versa.

Taxes :- The rate of tax also affect supply of the commodity for instance sales tax or excise duty increases, the profit margin of producer will decrease & he will decrease the supply of the commodity.

Natural factors :- The supply of certain products depends on nature. for example supply of agricultural products depends on climate. If climate is favourable, the supply increases & vice-a-versa. Nature is an independent phenomenon

Means of transport and communication :- In case the means of transport & communication are properly developed, there are chances of increased supply & the supply will be lesser if these means are not properly developed.

Q5 What do you mean by law of Supply?

Law of supply states that there is a positive relationship between price of the product & its supply that is keeping other things as constant. When price of the product increases, supply of the product also increase & vice-a-versa.

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Ques What are the exceptions of law of supply?

Following are the exceptions :

* **Agricultural Goods :** In case of supply of Agricultural goods, it is mainly dependent on nature not on the price of the product.

* **Perishable Goods :** Perishable goods like milk, vegetable, meat etc do not mainly depend on price because sellers sells them even if he is not getting a good price.

* **Goods of auction :** The law of supply does not apply in case of goods of auction because there supply is always fixed which cannot be changed at all.

* **Disposal of old stock :** When a seller sells his older stock, he is ready to sell more stock even at lower prices.

* **Supply of Antique goods :** Where supply is fixed which cannot be changed even if buyer offers a higher price.

* **Future Expectation of change in price :** If the price of a product has increased as compared to past, supply should increase, but if it is expected to increase further in future, the supply at present will not increase.

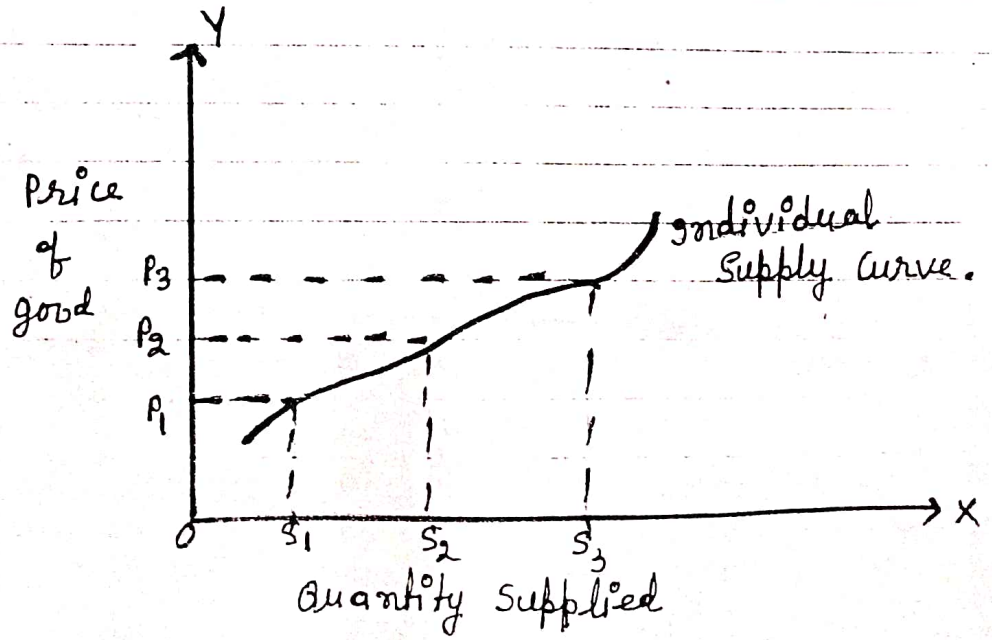
Ques Explain the individual supply schedule?

It is the tabular form of presentation of data showing different quantities of a product which an individual firm is willing to supply at different prices.

Price of X	Supply of X
2	20
3	40
4	60
5	80
6	100

Q What is individual supply curve?

It is a graphical presentation of data showing different quantities of a product which an individual firm is willing to supply at different prices.



Q. Explain Market Supply Schedule?

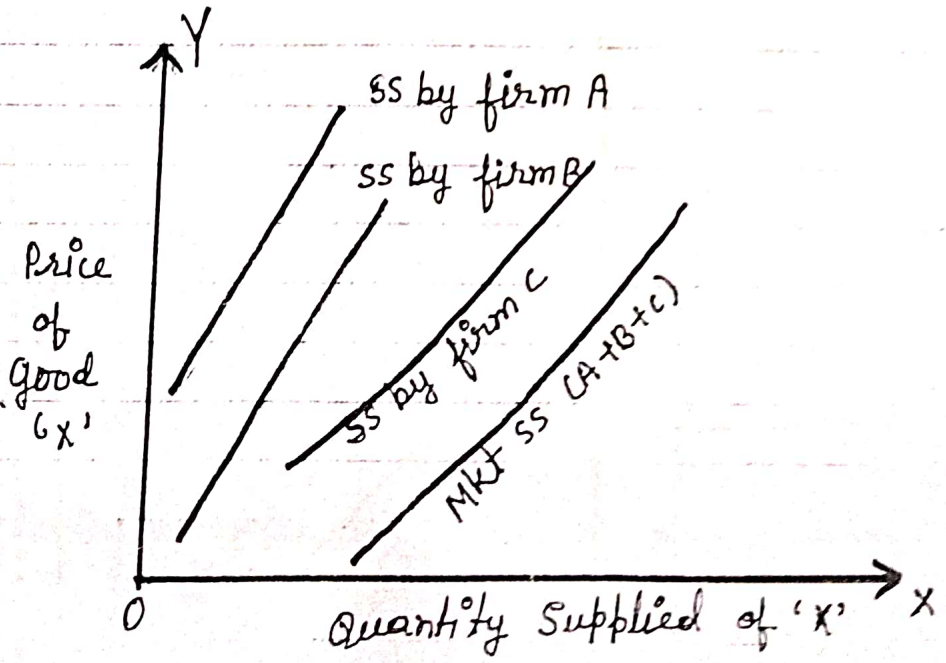
It is a tabular form of presentation of data showing different quantities supplied by all the firms collectively in the market at different prices.

SS - Supply

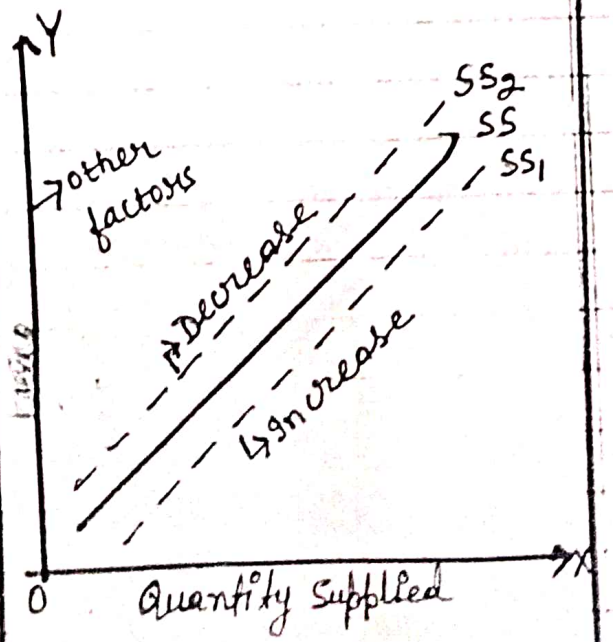
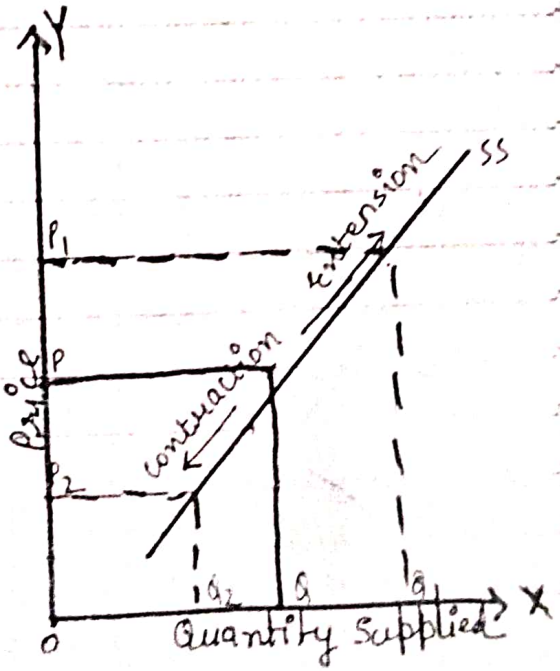
Price	SS by A	SS by B	SS by C	Mkt SS (market)
2	100	80	60	240
3	110	90	70	270
4	120	100	80	300
5	130	110	90	330
6	140	120	100	360

Q. What is Market Supply Curve?

It is a graphical presentation of data showing different quantities supplied by all the firms collectively in the market at different prices.

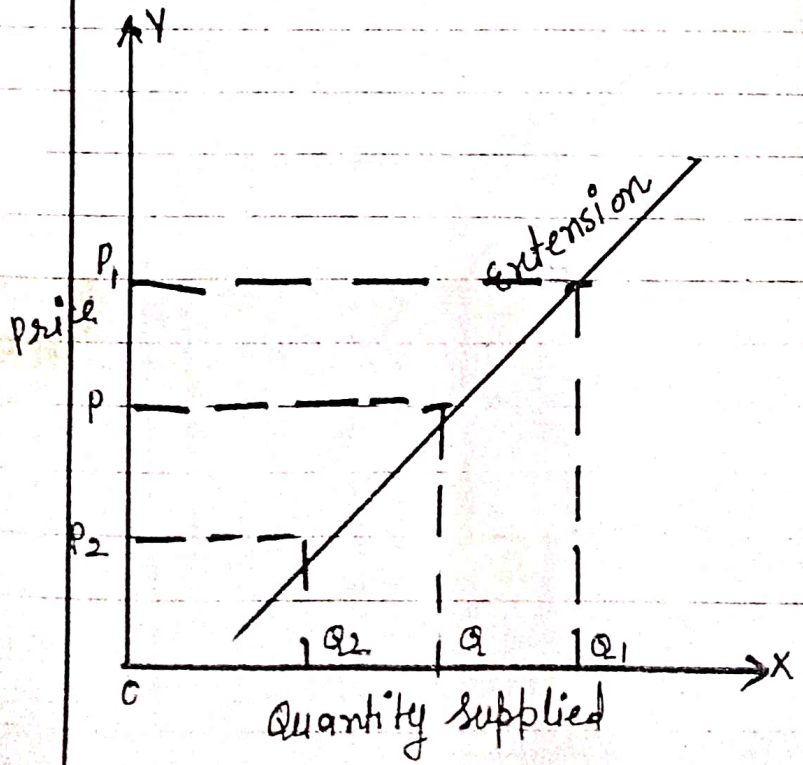


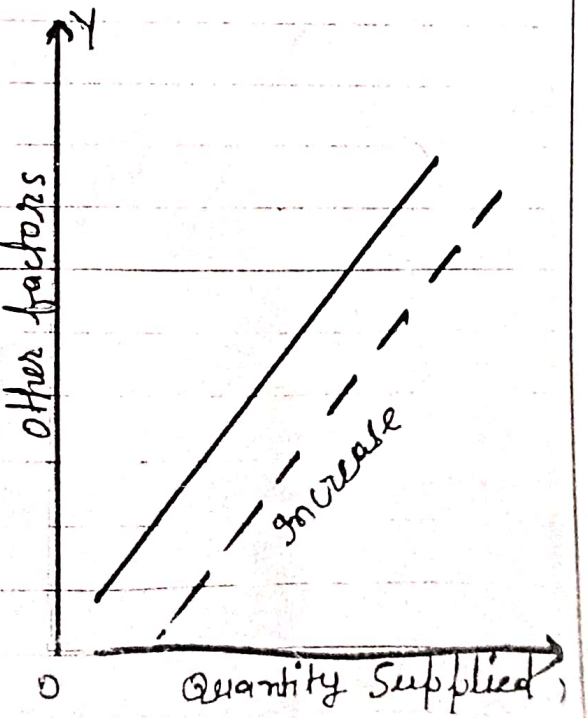
Q Differentiate between change in supply and change in quantity supplied.

Basis	change in supply	change in quantity supplied
Meaning	It occurs due to change in factors affecting supply other than price.	It occurs due to change in price of the product.
Alternate name	The change is denoted by increase or decrease	The change is denoted by expansion or contraction.
Shift / Movement	There is a shift in the supply curve.	There is movement along the supply curve.
Diagram		

Q. Differentiate between extension of supply and increase in supply.

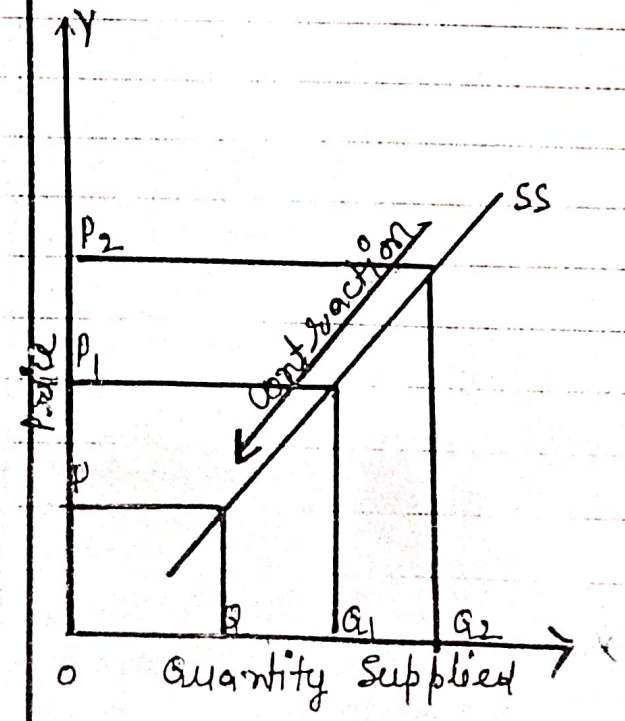
Basis	Extension of Supply	Increase in Supply
Meaning	Keeping other things as constant when supply of a product increases due to price of the product, it is called as extension of supply.	when there is increase in supply due to change in other factors keeping price as constant it is known as increase in supply.
Alternate Name.	It is also known as change in quantity supplied	It is also known as change in supply.
Shift / Movement	There is a movement along the supply curve	There is a shift in the supply curve

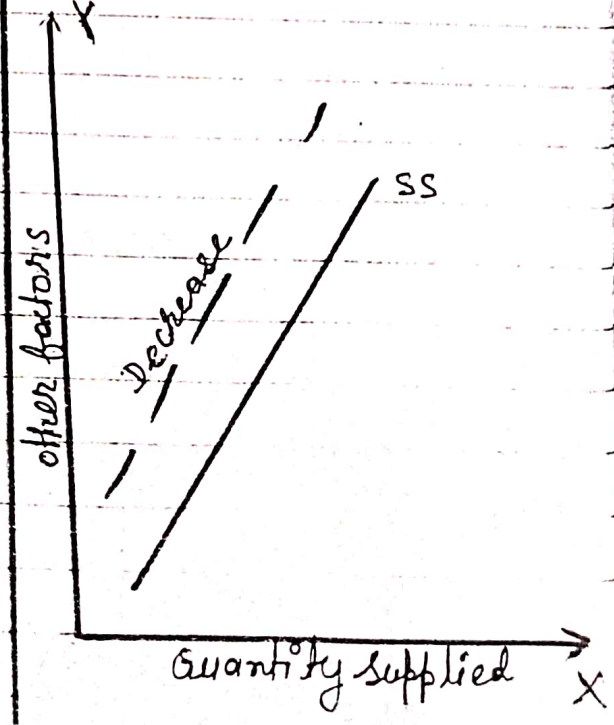




Q Differentiate between contraction of Supply and decrease in Supply?

Basis	Contraction of Supply	Decrease in Supply
Meaning	Keeping other things as constant when supply of a product decreases due to fall in its price, it is called as contraction of supply.	Keeping price as constant when supply decrease due to change in other factors, it is known as decrease in supply
Alternate Name	It is also known as change in quantity supplied	It is also known as change in supply.
Shift / Movement	There is a movement along the supply curve	There is a shift in the supply curve.





Q **What do you mean by Elasticity of Supply?**

It is a measure of degree of responsiveness of supply due to change in price of the product. It is a quantitative concept which explains that if price changes by certain percentage, what will be the percentage change in supply.

Q **What are the different Methods to calculate Elasticity of Supply?**

There are mainly two methods:

1. Proportionate Method.
2. Graphic Method / Point Method.

Numericals of Supply (Elasticity)

Proportionate Method

$$E_S = \frac{\text{\% change in Supply}}{\text{\% change in price}}$$

$$E_S = \frac{\frac{\Delta q}{q} \times 100}{\frac{\Delta P}{P} \times 100}$$

$$\frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

Initial Supply = q New Supply = q_1

change in Supply = $(q_1 - q) = \Delta q$

Initial price = P New Price = P_1

Change in price = $P_1 - P$ ΔP

Question

When price of Gandhi's T-shirt was Rs 100 per kg the supply was 10 T-shirts. When price increased to 120 per kg supply increased to 15 kg

$P = 100$ $\quad q = 10$

$P_1 = 120$ $\quad q_1 = 15$

$\Delta P = P_1 - P$ $\quad \Delta q = q_1 - q$

$= 120 - 100$ $\quad = 15 - 10$

$= 20$ $\quad = 5$

$$\varepsilon_s = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$= \frac{5}{20} \times \frac{100}{10}$$

$$\varepsilon_s = 2.5$$

Question

A producer is prepared to sell 200 quintles of rice at a price of 1000 per quintle. If price rises to 1200 per quintle, he wishes to supply 300 quintles.

$P = 1000$ $\quad q = 200$

$P_1 = 1200$ $\quad q_1 = 300$

$\Delta P = 200$ $\quad \Delta q = 100$

$$E_s = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$= \frac{5}{\cancel{+0}\cancel{5}} \times \frac{\cancel{100}}{\cancel{2}\cancel{0}\cancel{5}}$$

$$\boxed{E_s = 2.5}$$

Question

The price of a commodity rises from Rs 10 to Rs 15 per unit, and the supply increases from 50 to 100 units

$P = 10$ $\quad q = 50$

$P_1 = 15$ $\quad q_1 = 100$

$\Delta P = 5$ $\quad \Delta q = 50$

$$\frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$= \frac{\cancel{50}}{\cancel{5}} \times \frac{\cancel{+0}2}{\cancel{50}}$$

$$\boxed{E_s = 2}$$

Question

Price of a product falls by 10% as a result its supply falls by 15%

$$\varepsilon s = \frac{\%\text{ change in SS}}{\%\text{ change in Price}}$$

$$\varepsilon s = \frac{11.5}{10}$$

$$\boxed{\varepsilon s = 1.5}$$

Question

As a result of 10% fall in price of a commodity, its supply decreases from 80 to 60 units

% change in Price = 10

$q = 80$

$q_1 = 60$

$\Delta q = 60 - 80$

$= -20$

$$\%\text{ change in Supply} = \frac{\Delta q}{q} \times 100$$

$$= \frac{-20}{80} \times 100 = 25$$

$$= -25\%$$

$$E_s = \frac{\%\ \text{change in Supply}}{\%\ \text{change in Price}}$$

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

$$\boxed{E_s = -2.5}$$

Question

When price of a commodity rises from 5 per unit to 6 per unit, supply increases by 20%.

$$\%\ \Delta \text{ in Price} = \frac{\Delta P}{P} \times 100$$

$$= \frac{1}{5} \times 100 = 20$$

$$E_s = \frac{\%\ \Delta \text{ in SS}}{\%\ \Delta \text{ in Price}}$$

$$= \frac{20}{20}$$

$$\boxed{E_s = 1}$$

Question

At a price of Rs 8 per unit, the quantity supplied is 200 units if elasticity of supply is 1·5, if its price rises to Rs 10 per unit. Calculate the quantity Supplied at new price.

$P = 8$ $\quad P_1 = 10$ $\quad \Delta P = 2$

$q = 200$ $\quad q_1 = ?$ $\quad \Delta q = ?$

$\varepsilon_s = 1{\cdot}5$

$$\varepsilon_s = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$1{\cdot}5 = \frac{\Delta q}{2} \times \frac{8}{200}$$

$$\Delta q = 1{\cdot}5 \times 50$$

$$\boxed{\Delta q = 75}$$

$$q_1 = \Delta q + q$$

$$q_1 = 200 + 75$$

$$\boxed{q_1 = 275}$$

Question

The quantity supplied of a commodity at a price of 8 per unit is 400 units, its elasticity of supply is 2 calculate the prices at which its quantity supplied will be 600 units

$q = 400$ $\quad q_1 = 600$ $\quad \Delta q = 200$

$P = 8$ $\quad P_1 = ?$ $\quad \Delta P = ?$

$\varepsilon s = 2.$

$$\varepsilon s = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$2 = \frac{200}{\Delta P} \times \frac{8}{400} \quad 4.$$

$$\boxed{\Delta P = 2}$$

$$P_1 = P + \Delta P$$
$$= 8 + 2$$
$$\boxed{P_1 = 10}$$

Question

When price of Mineral water was 10 per bottle, its supply was 150 bottles. When price increase to 12 per bottle, supply increases to 200 bottles.

$P_0 = 10$ $\quad q_0 = 150$

$P_1 = 12$ $\quad q_1 = 200$

$\Delta P = 2$ $\quad \Delta q = 50$

$$\varepsilon s = \frac{\Delta q}{\Delta P} \times \frac{P}{q}$$

$$\frac{50}{x} \times \frac{10}{150}$$
$$3$$

$$\boxed{\varepsilon s = 1.6}$$

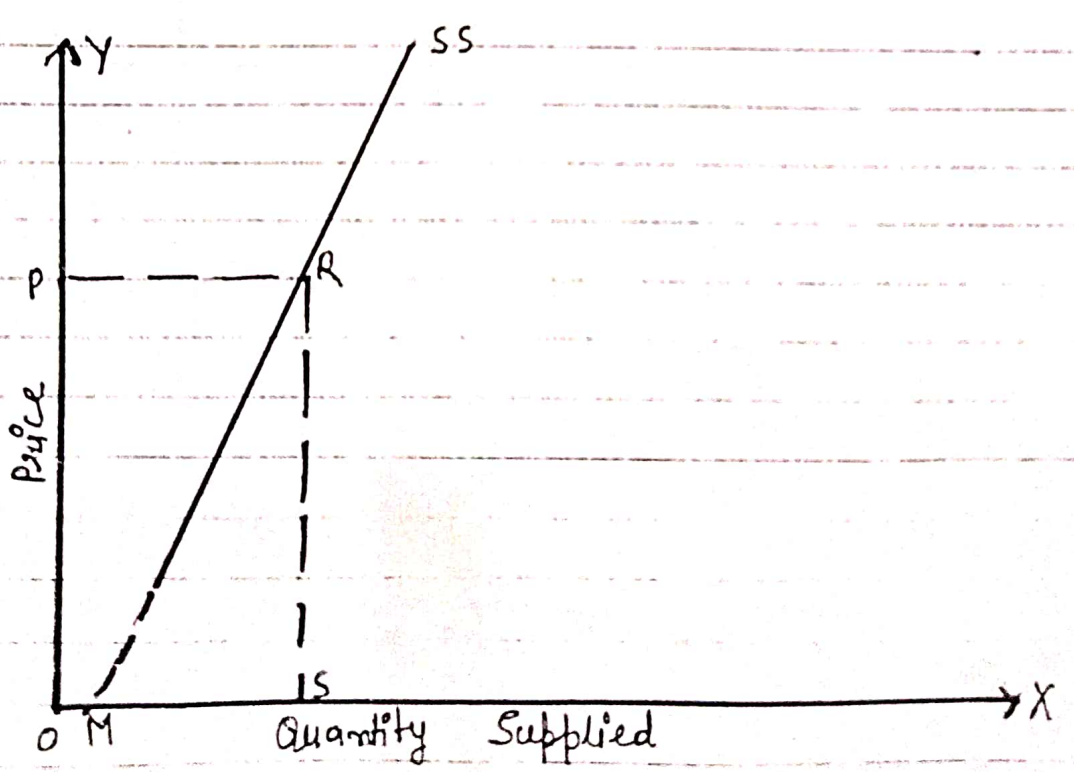
Q) Explain the Graphic Method of calculating Elasticity of Supply?

OR

Explain the Point Method to calculate Elasticity of Supply.

under point Method, we calculate Elasticity of supply on a particular point of supply curve - corresponding to a given price. For this purpose we draw a perpendicular from the given point on the supply curve to the x-axis & we join the supply curve with the x-axis. when elasticity is calculated by dividing the difference from supply curve to the perpendicular by difference from origin to the perpendicular.

(1)



Elasticity at price OP = $\frac{\text{Difference from SS curve to } \perp}{\text{Difference from origin to } \perp}$

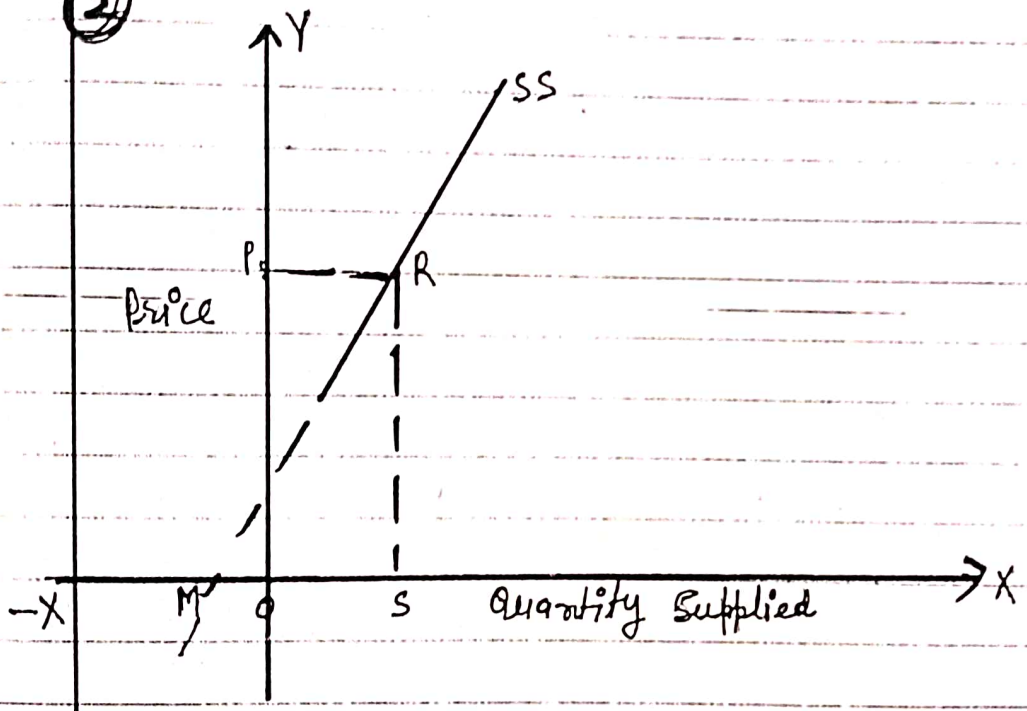
$\Rightarrow \frac{MS}{OS}$

Now, we know that $MS < OS$

$\therefore \varepsilon s < 1$

lesser elastic

(2)



εs at price OP = $\frac{\text{Diff. from SS curve to } \perp}{\text{Diff. from origin to } \perp}$

$\Rightarrow \frac{MS}{OS}$

we know $MS > OS$

$\varepsilon s > 1$

Higher elastic

Solutions Academy

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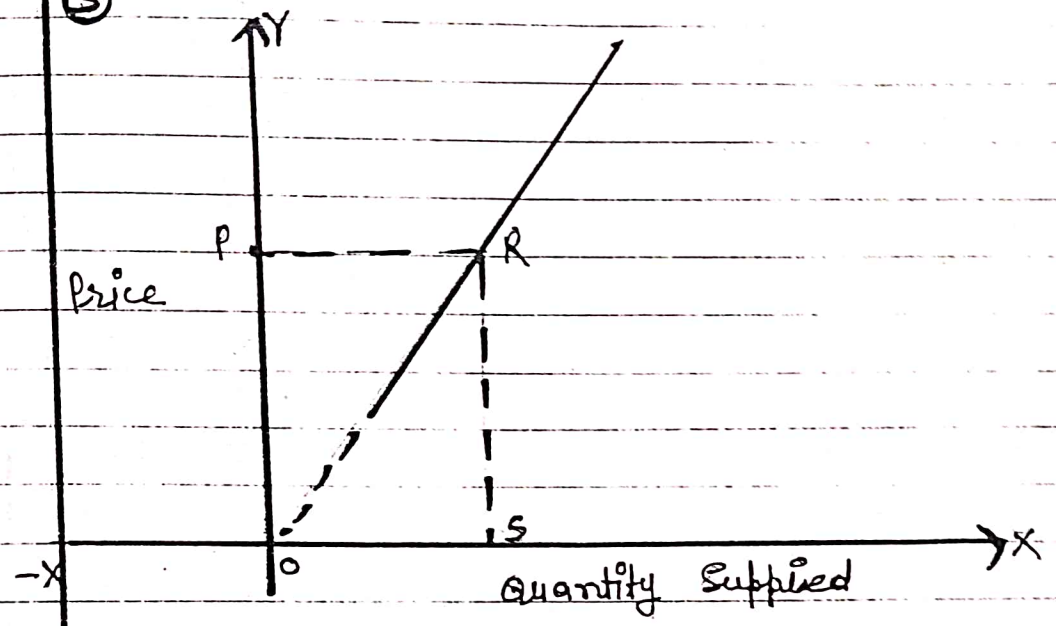


Elasticity at price OP = $\frac{\text{Diff. from SS curve to } \perp}{\text{Diff from origin to } \perp}$,

$\Rightarrow \frac{OS}{OS}$

$\varepsilon s = 1$

$\therefore$ unit elastic

Q. What are the different factors affecting elasticity of Supply?

Following are the factors:

* **Nature of the Product:** If product is of perishable nature, its supply will be lesser elastic. as compared to non perishable goods whose supply can increase or decrease depending upon the change in price. Similarly supply of Agricultural goods is lesser elastic as compared to supply of industrial goods.

* **Time Period:** Elasticity of supply also depends on time period, if time period is longer, supply will be elastic & vice-a-versa, it is because the supply can be adjusted in long period than in short period.

* **Techniques of production:** If simple & advanced techniques of production are used, its supply will be elastic because it can be easily changed upon change in price. On the other hand, in case of complex technique supply is comparatively inelastic.

* **Availability of Inputs:** In case the inputs are easily available, the supply of the product will be highly elastic because producers can easily respond to any change in price. On the other hand if inputs are not easily available, supply will be lesser elastic.

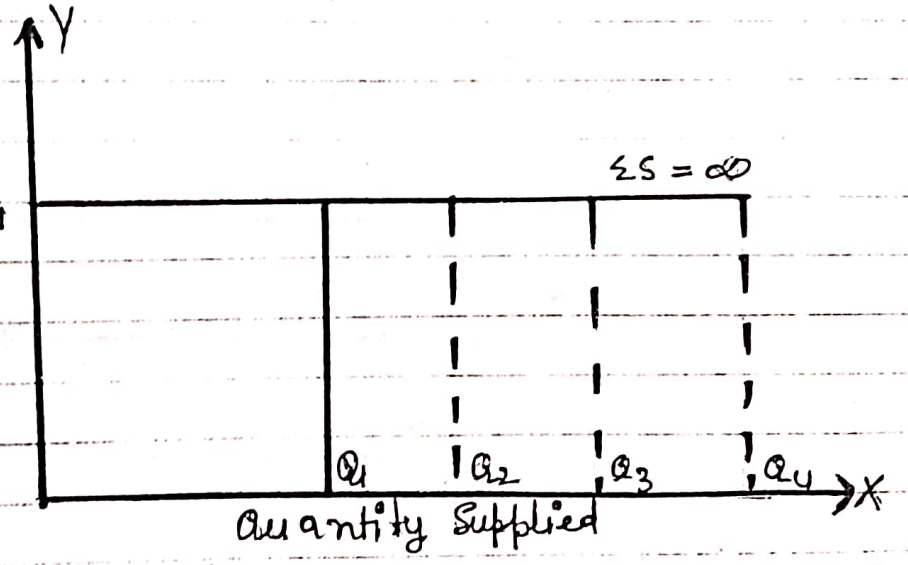
* **Cost of production:** In certain cases the cost of production decreases with the increase in production In such a case supply is highly elastic because producer increase the production to generate more profits. On the

other hand if cost of production increases with the increase in supply, the supply will be lesser elastic because producers would be unwilling to increase the production.

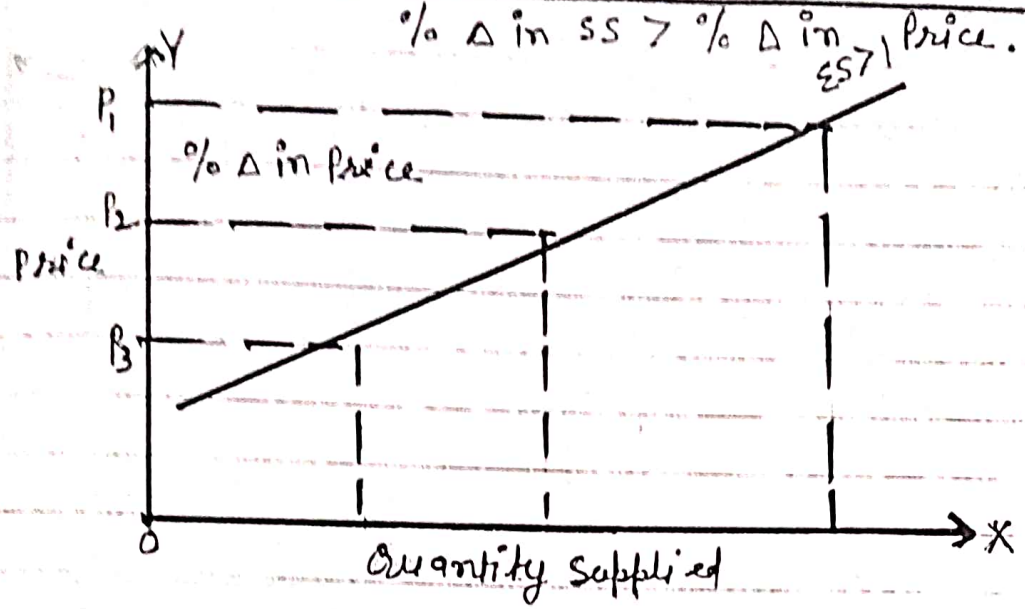
Q. What are the different degrees of elasticity of supply?

There are mainly five degrees:

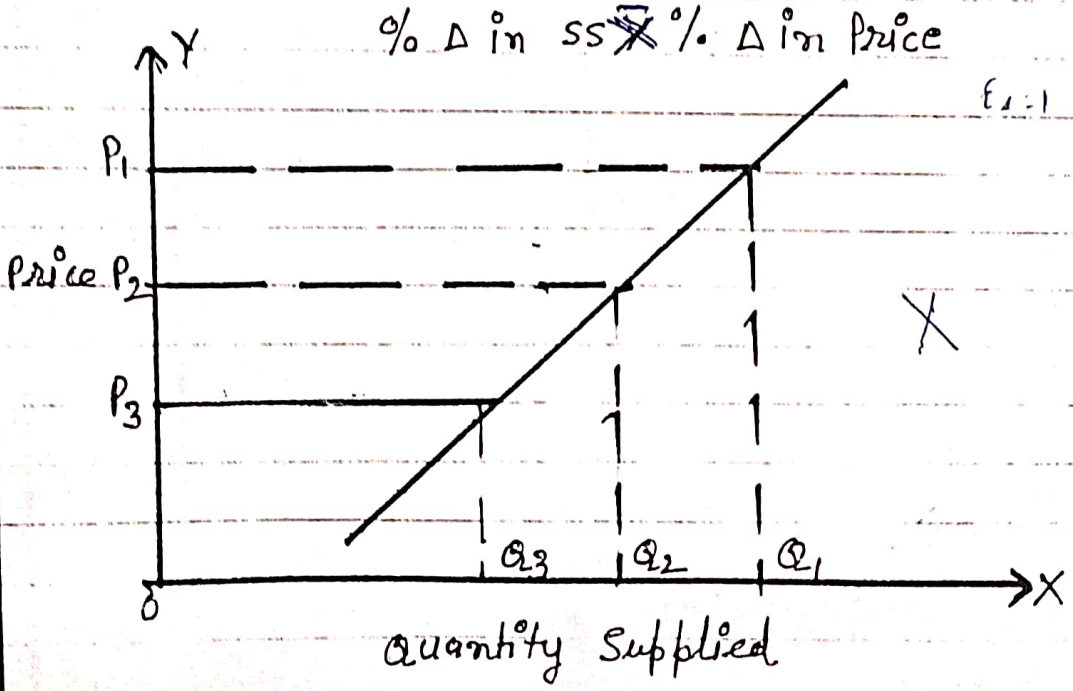
* Perfectly elastic supply: It refers to a state of supply in which supply changes with a huge quantity on a negligible change in price where $\varepsilon s = \infty$, as shown in the following diagram.



* Highly elastic supply: It refers to a state of supply in which supply changes with a greater percentage as compared to percentage change in price. Here $\varepsilon s > 1$ as shown in the following diagram.

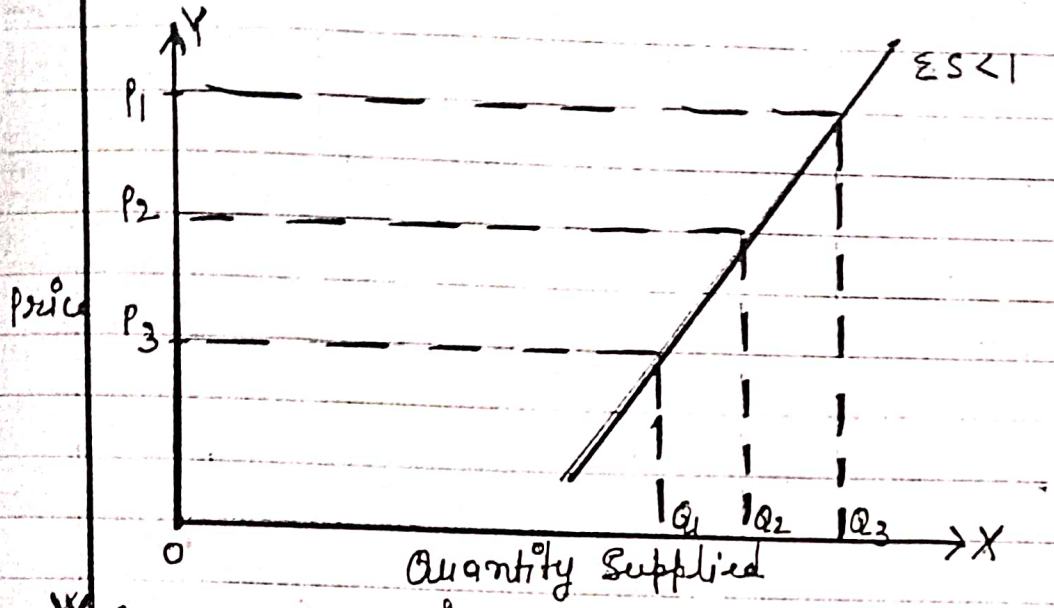


Unit elastic Supply : It refers to a state of supply in which percentage change in supply is just equal to percentage change in price $Es = 1$, as shown in the following diagram.

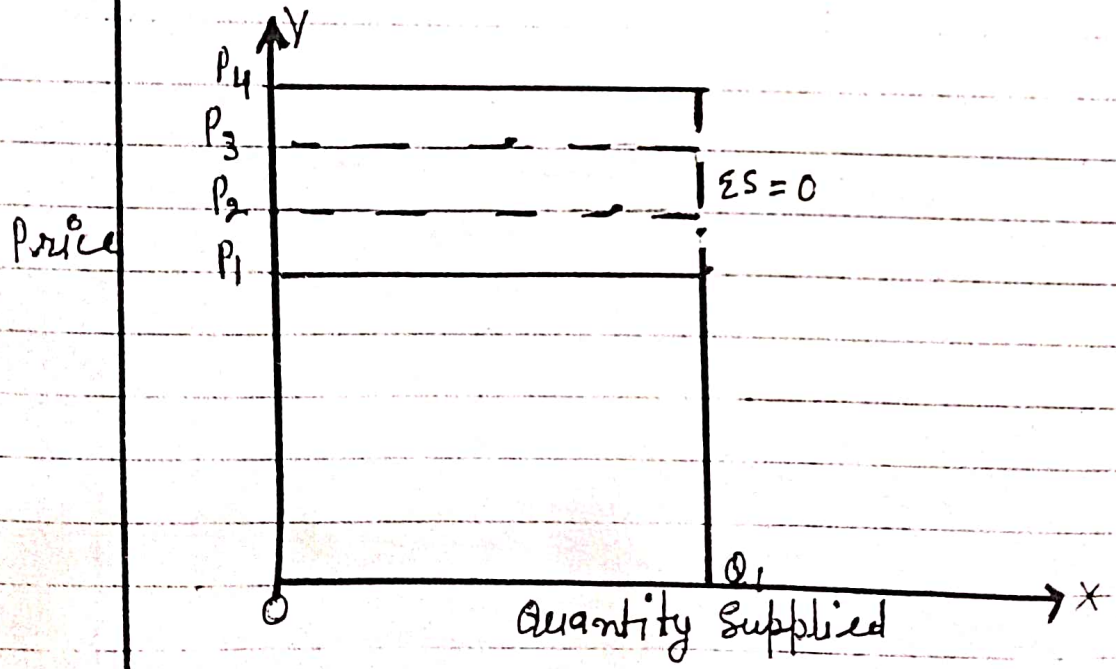


Lesser elastic Supply : It refers to a state of supply in which supply changes with a lesser percentage as compared to percentage change in price, here $Es < 1$, as shown in the diagram.

% Δ in SS < % Δ in Price



Perfectly inelastic Supply : It refers to a state of supply ~~of the~~ in which supply changes negligibly even on huge change in price. Here $ES = 0$, as shown in the following diagram.



Q. Define Supply function?

Supply function expresses the functional relationship between the supply of a commodity & its various factors affecting supply. Symbolically it is expressed as follows:

$$SS = f(P, Pr, Ta, \ldots)$$

SS = Supply
P = Price of Product
Pr = Price of related product
Ta = Taxation Policy

Q. What causes a movement along the supply curve?

Change in price causes movement along the supply curve.

Q. What causes decrease in Supply?

Factors affecting supply other then price causes decrease in supply.

Q What causes decrease in supply?

Factors affecting supply other than the price are the causes of decrease in supply. These factors include following:

* Decrease in Number of producers in the market: If the number of producers decrease the collective production & supply will also decrease.

* Rise in price of input: If input price increases the cost of production increase, profit margin falls & supply falls.

* change in goals of the firm: If the goal of producers is not to maximise the sales, the supply will fall.

* Future expectation of increase in price: If the producer's are expecting increase in price in the future they will decrease the supply at present.

* Increase in tax rate: If government increases the tax rate, the profit margin of producers will decrease & the supply will also decrease.

Q What causes contraction of supply?

The contraction of supply occurs due to decrease in price because when price decreases supply falls.

Q On which direction supply curve shifts in case of increase in supply?

It shifts towards right.

Q Due to improvement of technology the Marginal cost of television has gone down. How will it affect the supply curve of television?

It shifts towards right.

Q How will an increase in number of firms shift the market supply curve?

It shifts towards right.

Q When more of quantity of a commodity is supplied at the same price what would you call it?

Perfectly elastic supply.

Q If a farmer grows 'hafeem' and 'ganja' how will an increase in price of 'hafeem' affect the supply curve of 'Ganja'?

It will shift towards left.

Previous Year Paper – Questions

Q — What does an upward movement along a supply curve indicate?

It indicates that price of the product has increased.

Q — Differentiate between Supply and change in Quantity supplied? (2008)

Q — Explain the effects of the following on the supply of a commodity?

* Rise in price of inputs
* Rise in price of other goods.

Q — What causes a downward movement along the supply curve?

Decrease in price.

Q — What is the likely effect of technological progress on supply of a good?

Increase in supply

Q — State 3 causes of decrease in supply?

Q — State 3 causes of increase in supply?