4 Supply

Introduction

Demand and supply both are equally important determinants of price. In order to fully understand the concept of demand, it is necessary to understand the concept of supply.

Considering the demand for various goods in the market, it becomes a function of the market to ensure the supply of these goods. Supply must be altered in accordance to changes in demand. Just as there is a different demand at every price, there also is a corresponding supply to every price.

4 1 Meaning of Stock and Supply

In everyday language a distinction between supply and stock is not drawn. However, in economics there is a clear distinction between stock and supply.

4 1.1 Production : Production is the quantity of goods created by the available factors of production during a fixed time period.

4 1.2 Supply : It is that amount of production which a producer is able and willing to sell in the market at a given price and at a particular point of time.

4 1.3 Stock : Stock is the total available amount of goods with a producer which can be offered for sale in the market as per the ability and willingness of the seller. For example, a trader of oil in Rajkot has 500 packets of oil. If she/he is not able and willing to sell it in the market at a given price at a given point of time then supply is zero. But, if she/he is able and willing to sell 300 packets from the available amount then the supply of oil is 300 packets.

Before understanding the meaning of supply, it is important to clarify a few concepts.

(A) Willingness to Sell : The entire amount of a good available with a producer or trader is not called supply. It is a stock which will become supply only when she/he is able and willing to sell at a given price at a particular point of time.

(B) Ability to Sell : Ability to sell depends upon the availability of stock. For example, If the trader of oil desires to sell 1,000 packets of oil while she/he has an available stock of only 500 packets then the ability to sell is only 500 packets. Thus, supply is 500 packets.

(C) Willingness to Sell : Besides the ability to sell, the trader should be willing to sell a good at a given price at a particular point of time.

From the above discussion, it is clear that supply is that proportion of the total available stock which a supplier is able and willing to sell at a particular price at a particular point of time.

4.2 Difference between Stock and Supply

Generally the concepts of stock and supply are used synonymously by people. But, technically the two concepts are different. Stock is the sum total of the available amount of a good and supply is the stock which traders are able and willing to sell a prevailing price at a particular point of time,

When the trader is not able and willing to sell the entire available stock at a given price and a point of time then supply will not be the same as stock.

From an available stock of 500 packets, if the trader is able and willing to sell 300 packets then the supply of oil is 300 packets. Hence the availability stock which determines the ability to sell is called stock. While, the ability and willingness to sell a given price at a particular point of time is the supply.

Hence, stock is the total amount of a product which is available for sale. Supply is less than stock when the supplies sells lesser amount from the available amount. Stock consists of current production as well as the unsold stocks from previous lot of production. Thus, stock is different from production and supply.

4.3 Factors Affecting Supply (Determinants of Supply)

Factors affecting supply are grouped under two categories : (1) Price of a good and (2) Factors other than price. Supply of commodity is affected by the following factors.

4.3.1 Price of the Product : Price is an important determinant of supply. A producer sells for profit and thus, she/he supplies more when the price of a product rises and supplies less when the price of a product falls. Thus, there is a positive relationship between price of a good and its supply.

4.3.2 Factors other than Price : (Other Factors)

4.3.2.1 Price of Factors of Production / Cost of production : Supply is affected by change in production cost. E.g. When rent paid to the owner of land, wages paid to the labourer, decrease, the cost of production decreases. When cost of production decreases, profits increase if price remains unchanged and hence the seller is willing to sell greater amounts. Hence, supply expands when prices of factors of production fall. While if cost of production rises, vice-versa happens, that is, supply contracts.

4.3.2.2 Level of Technology : When state of technology advances, time and efforts are saved. Hence, greater amounts and better quality of goods are produced with the same or lower costs. If market price does not fall then profits increase and sellers are willing to sell more; supply expands. Countries that use more advanced technologies are able to produce more at lower costs.

4.3.2.3 Future Expectations Regarding Price : Future expectations about price affects the current supply of goods. If sellers speculate price of a product to rise future then they will contract the supply in the present time period to build up stock for the future and vice-versa.

4.3.2.4 Other Factors : Supply increases when there is increase in number of firms producing the product, when political stability exists, natural conditions remain conducive, when efficient law and order mechanisms and legal systems exist, when industrial relations are maintained well between owners and workers of production and marketing activities etc. And, supply decreases when the above factors act against supply.

4 4 Individual Supply and Market Supply

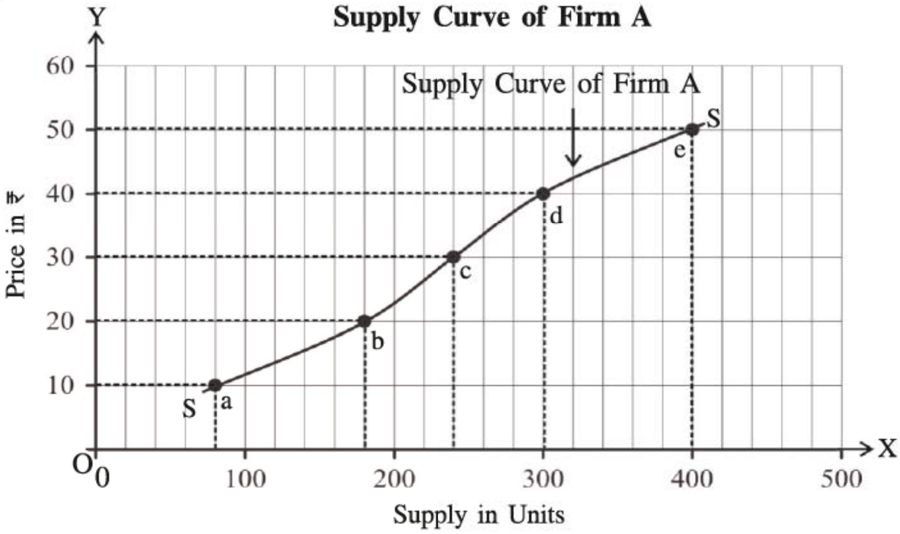
Supply in economics is also classified as individual supply and market supply. Individual supply is the supply of a good by an individual firm/seller at a given price at a particular point of time. The sum total of such individual supplies of all existing sellers in the market is called market supply at a given price at a particular point of time.

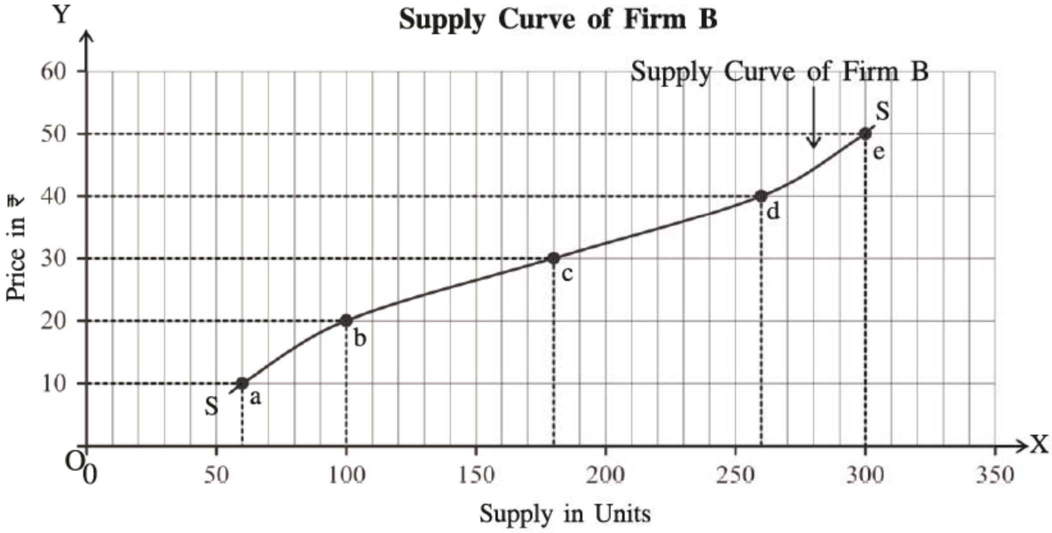
Price per kg in	Supply of Different Firms (in kg)		Market Supply (in kg)
-	Firm (A)	Firm (B)	Combined Supply of Firms A and B
10	80	60	140
20	180	100	280
30	240	180	420
40	300	260	560
50	400	300	700

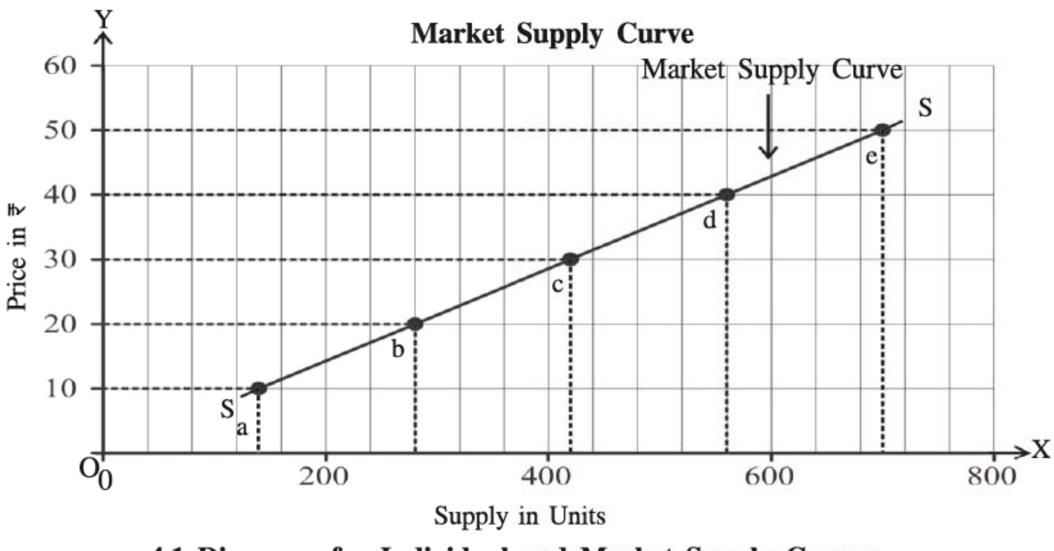
The above schedule shows that when price is higher, supply is more and when prices is lower, supply is lesser. This is explain by a law, which is known as 'Law of Supply'.

Explanation of Schedule/Diagrams : The above schedule shows individual supply schedules of firm A and firm B, while the sum total of supply of firm A and firm B is shown as market supply schedule.

Individual and market supply curves can be drawn from the above schedule. These curves have a positive slope as there is a positive relationship between price and supply. The slope of each curve in the figures below is different though positive as there is a difference in the correspondence between price and supply in each case.







4.1 Diagrams for Individual and Market Supply Curves

4.5 Supply Function

Supply function specifies a functional (mathematical) relationship between supply of a good and its determinants.

It represents that the supply of one good is determined by many factors. In other words supply function is a mathematical representation of the relationship of supply of a good with its determinants.

$$S_x = f(P_x, T, P_F, P_e, U)$$

Here, S_x = Supply of X commodity

f = Functional Notation

P_x = Price of X commodity

T = Level of Technology

P_F = Factor Prices

P_e = Expectations Regarding Future Prices

U = Other Factors

4.6 Law of Supply

We understood that demand is always stated at a particular price. Supply is also stated at a particular price. "When all other factors affecting supply are assumed to be constant, as price increases, supply expands and as price decreases, supply contracts". Thus, there is a positive relationship between price and supply and this relationship is called law of supply. Let us understand the assumptions of law of supply.

4.6.1 Assumptions of Law of Supply : Law of supply rests on certain assumptions. There are several factors affecting supply of a good at a particular point of time besides price. However, the law of supply assumes the effect of all factors other than price as constant on the supply at a given point of time. Actually, some of the other factors can have a more exerting influence on supply than price; however, we assume these to be constant. Some important assumptions of law of supply are:

(1) Prices of factors of production remain constant.

(2) There is no change in the prevalent state of technology.

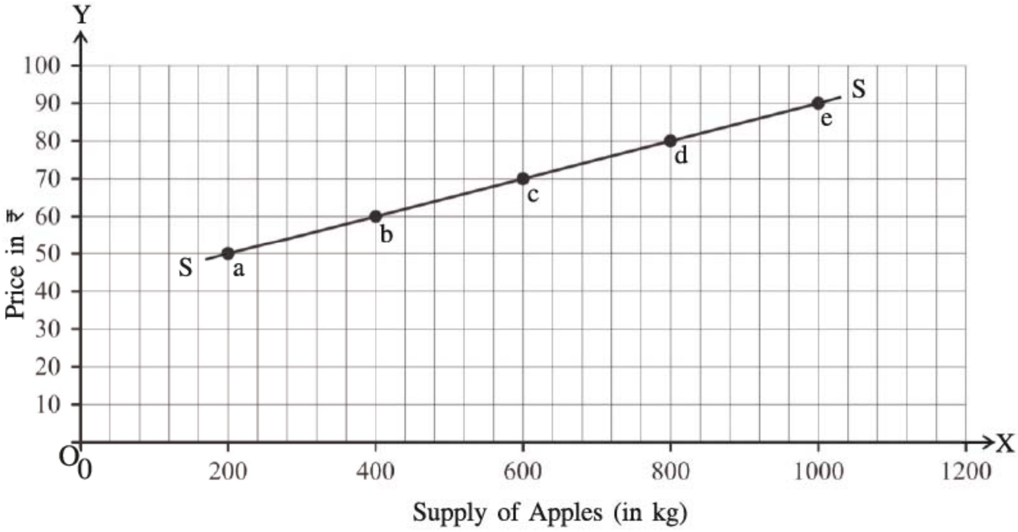
(3) Level of competition remains the same; in other words, number of sellers in the market remains the same.

(4) Expectations regarding future prices are ignored/held constant.

(5) Other factors like government policy, transport facilities, natural factors etc. remain constant.

4.6.2 Schedule, Diagram and Explanation of Supply : A schedule showing a seller's willingness to sell a good at various prices is called the supply schedule. The following table shows a hypothetical example showing the willingness of a seller to sell apples at different prices.

Price of Apples per kg in ₹	Supply of Apples in kg
50	200
60	400
70	600
80	800
90	1000



4.2 Diagram of Law of Supply

In the above diagram, price of apples is represented on 'Y' axis and supply of apples on 'X' axis. Plotting the graph of above table gives points a, b, c, d, e which show the various price-supply combinations.

When price is ₹. 50, supply is 200 kgs. When price rises to ₹ 60, supply extends to 400 kgs. and when price rises still further to ₹ 70, supply extends to 600 kgs. and so on. The curve SS is called the supply curve and it has a positive slope.

4.7 Relationship between Price and Supply

There are two reasons for positive relationship between price and supply :

(1) Sellers pursue the objective of profit maximization and when price rises they see the possibility of increasing profits. Thus, they supply more at a higher price.

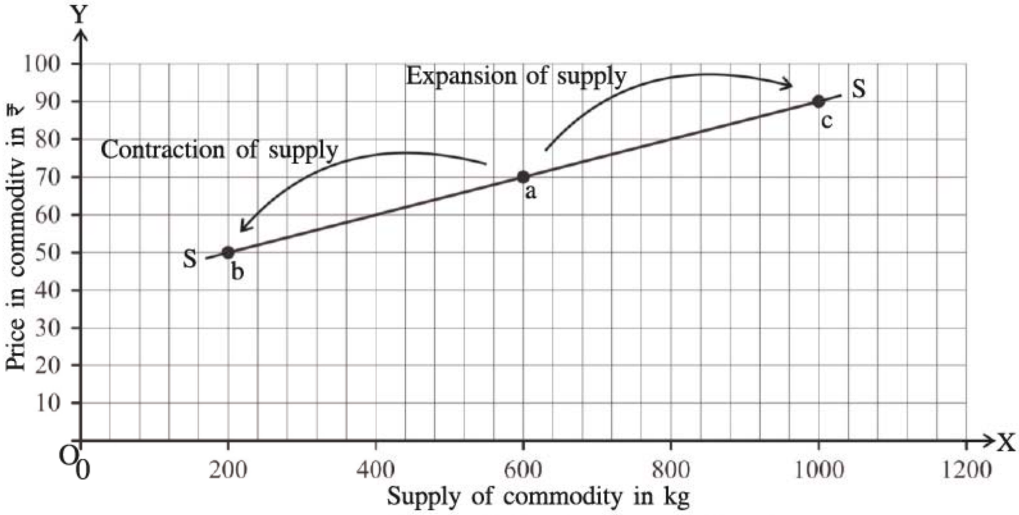
(2) When price rises, those producers who were not willing to sell their stocks at lower price start selling the stocks.

4.8 Change in Supply

The determinants of supply are classified under two major categories as price and factors other than price. When other factors are assumed to remain constant and price is varied, there is expansion and contraction of supply. When price is held constant and other factors are varied, there is an increase and decrease in supply.

4.8.1 Expansion-Contraction of Supply : When other factors are assumed to remain constant and price is varied, there is expansion and contraction of supply. Other factors may constitute, cost of production/prices of factors of production, number of sellers, level of technology, government policies etc.

Price of Apples in ₹	Supply of Apples in kg
50	200
60	400
70	600
80	800
90	1000



4.3 Expansion and Contraction of Supply

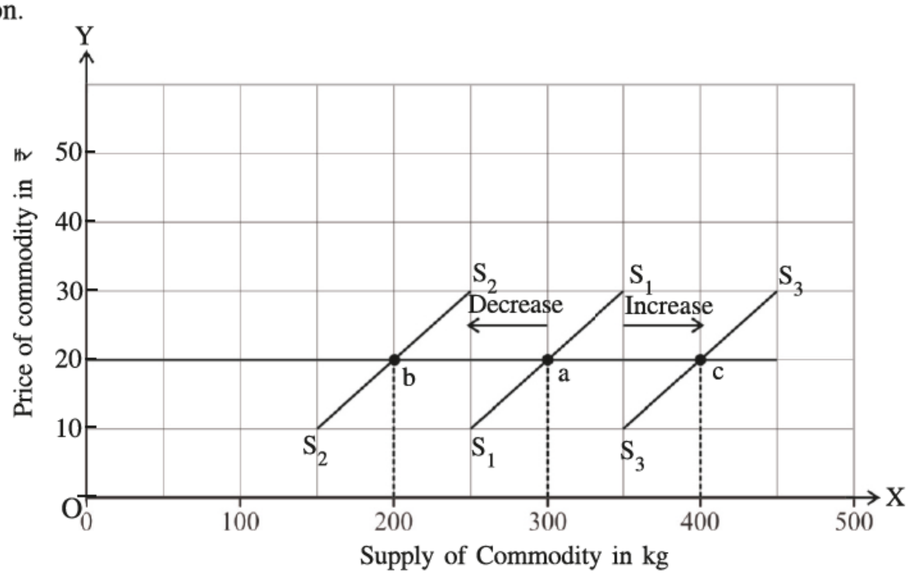
In the above diagram, price of apples is represented on 'Y' axis and supply of apples on 'X' axis. Suppose the initial price is ₹ 70 then the initial supply is 200 kgs. which is seen at point 'a'. When price rises to ₹ 80, supply extends to 800 kgs. and when price rises still further to ₹ 90, supply extends to 1,000 kgs. at point 'c' and so on. The movement from point 'a' to point 'c' on supply curve SS is called expansion of supply. Now from the initial point 'a' if price falls to Rs. 60, supply contracts to 400 kgs. and if price falls further to ₹ 50 and supply contracts to 200 kgs. as seen at point 'b' on the supply curve then the movement from point 'a' to point 'c' on the same supply curve SS is called contraction of supply.

4.8.2 Increase-Decrease in Supply : When one factor or some factors other than price change in favour of the supply of a good then there is a rightward/upward shift in the supply curve.

If cost of production falls, prices of factors of production fall, state of technology improves, number of suppliers increase, government policies change in favour of a product then even if price of a good remains constant, its supply increases as the entire supply curve shifts to the right.

If these factors change against the supply then at the same price, supply decreases as the entire supply curve shifts to the left. This happens when cost of production rises, prices of factors of production risel, technology becomes expensive, number of suppliers decrease, government policies change against the supply of a product and so on.

Price of Apples in ₹	Supply of Apples in kg
20	100
20	200
20	300
20	400
20	500



4.4 Increase and Decrease of Supply

In the above diagram, price is represented on the 'Y' axis and supply on the 'X' axis.

Initial supply curve is S_1S_1 where at price of ₹ 20 the supply of apples is 300 kgs. which is depicted by point 'a' on the supply curve S_1S_1 .

When price remains constant at ₹ 20 but one or some of the other factors change in favour of supply of apples then the supply curve shifts to the right to S_3S_3 and the supply of apples increases to 400 kgs. which is depicted by point 'c' on S_3S_3. Now if one or some of the other factors change against the supply of apples then the supply curve shifts to the left to S_2S_2 and the supply of apples decreases to 200 kgs. which is depicted by point 'b' on S_2S_2.

4.9 Exceptions to the Law of Supply

The question that might now arise is, 'Does the law of supply have exceptions like the law of demand ? Though several exceptions are pointed out by some people, these are technically debatable.

Exceptions to law of supply arise when supply of a good rises when its price falls and supply falls when price rises, when other factors are held unchanged.

4.9.1 Rare Goods : Certain goods are rare and hence even if there is a significant rise in their prices, their supply does not rise. For example, ancient coins, ancient idols, original manuscripts, old books, ancient handicrafts etc. However, such goods do not have any current production and therefore instead of considering these as exceptions to the law of supply, should be kept out of the study of supply.

4.9.2 Perishable Goods : Highly perishable goods like milk, milk products, green vegetables, meat, eggs, fish, ripe fruits, flowers etc. cannot be stored for a long time. Hence, even if their price falls their supply will not contract as they cannot be preserved and hence must be sold. However, in current times with availability of cold storages even this exception is debatable.

4.10 Price Determination in the Market

Price determination explains the process of determining a stable price at which goods are actually bought and sold in the market.

Such determination of prices is done in all forms of markets and is known as determination of equilibrium price level.

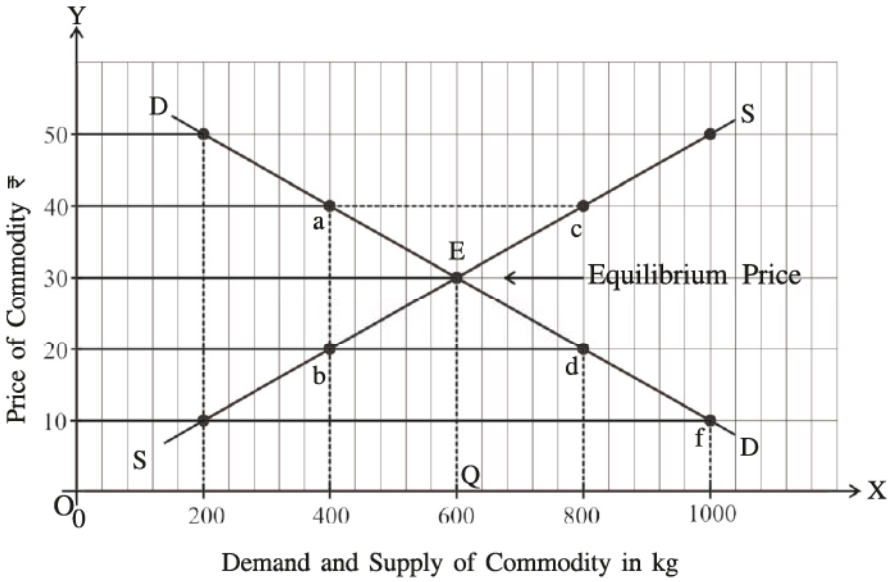
Lay persons may think that prices are decided by the producer or seller. But in reality it is not so. Individual producers or sellers do not decide the prices. Prices are determined by the interaction of market demand and supply. Since supply schedule and demand schedule move in opposite directions, equilibrium is attained only where the two curves intersect each other. Such a price prevails in the market and individual sellers take this price as a signal to determine prices of their individual produce in the industry. In perfect competition firms take this price as given, in monopolistic and oligopoly markets this price is taken as a signal. Even a monopolist has to take a price signal from the total demand and total supply.

According to Marshall, the market demand and market supply are called the invisible hands of market and the entire process is invisible. The two curves form a cross as shown in the figure below.

In the figure, the demand curve DD and the supply curve SS move in the opposite directions. However, they intersect at point 'E' which is called the equilibrium point. At this point the equilibrium price is ₹ 30 (EQ) and quantity demanded and supplied is 600 units (OQ) which is called the equilibrium quantity.

Imaginary Schedule of Demand, Supply

Price of Commodity in ₹	Price of Commodity in kg	Supply of Commodity in kg
10	1000	200
20	800	400
30	600	600
40	400	800
50	200	1000



4.5 Diagram of Price Determination

If price is raised by the industry to ₹ 40 by ignoring the demand and supply schedules, the total demand contracts to 400 units from 600 units while the supply expands to 800 units. Since demand is lesser than supply as shown by the distance between points 'a' and 'c', the market price will have a tendency to fall back to ₹ 30. This is the equilibrating process of the market.

Now if price is reduced by the industry to ₹ 20 by ignoring the demand and supply schedules, the total demand expands to 800 units while supply contracts to 400 units. Since demand is geater than supply as shown by the distance between points 'd' and 'b', the market price will have a tendency to rise back to ₹ 30. This again is the invisible process of the market.

Excercise

1. Choose correct option for the following from the options provided :

(1) What are the changes that take place in supply due to decrease in the price of a commodity ?

(A) Increase (B) Expansion (C) Contraction (D) Decrease

(2) What are the changes that take place in supply due to change in factors other than price ?

(A) Increase (B) Expansion

(C) Expansion-contraction (D) Increase-decrease

(3) What is the relationship between price and supply of commodity ?

(A) Direct (B) Opposite (C) Equal (D) Zero

(4) What decreases, therefore profit decreases and due to that supply decreases ?

(A) Stock (B) Supply

(C) Price (D) Price elasticity of demand

(5) Stock is always .... than supply.

(A) Higher (B) Lower (C) Not higher (D) Negligible

(6) If there is expectation about rise in price in future then present supply ....

(A) Increases (B) Decreases (C) Remain constant (D) Become zero

2. Answer following questions in one sentence :

(1) What is stock ?

(2) Which are the two matters on, which law of supply is presented ?

(3) Define supply.

(4) What is supply schedule ?

(5) How is the slope of supply curve ?

(6) Why is the law of supply not applicable to rare articles ?

(7) Which types of commodities are an exception to the law of supply ?

3. Answer the following questions in short :

(1) Distinguish : Stock and Supply.

(2) Explain meaning of individual supply and market supply.

(3) Why can supply be more than production, but can not be more than stock ?

(4) The supply curve is positively sloped. Explain with reasons.

4. Answer the following questions in brief points :

(1) Write short note on supply function.

(2) State exceptions to the law of supply.

(3) Explain expansion-contraction of supply along with diagram.

(4) Explain increase-decrease of supply along with diagram.

5. Answer the following questions in detail :

(1) Discuss in detail the factors affecting supply.

(2) Explain law of supply in detail with the help of a schedule and diagram.

(3) Explain the price determination process of market along with a diagram.

Glossary

Production	Production is the amount of goods created by the available factors of production during a fixed time period.
Supply	It is that amount of production which a producer is able and willing to sell in the market at a given price and at a particular point of time.
Stock	Stock is the total available amount of goods with a producer which can be offered for sale in the market as per the ability and willingness of the seller.
Supply Schedule	A schedule showing a seller's willingness to sell a good at various prices is called the supply schedule.
Supply Curve	A curve obtained by plotting a producer's/seller's willingness to sell at various prices is called the supply curve.
Expansion of Supply	A rise in quantity supplied which occurs when other factors are held constant but price of the good is raised.
Contraction of Supply	A fall in quantity supplied which occurs when other factors are held constant but price of the good is reduced.
Increase in Supply	A rise in quantity supplied which occurs when price of the good is held constant but one or some of the factors other than price change in favour of supply.
Decrease in Supply	A fall in quantity supplied which occurs when price of the good is held constant but one or some of the factors other than price change against supply.
Individual Supply	The schedule of an individual seller showing the willingness to supply a good at various prices is called individual supply.
Market Supply	The sum total of quantities which all suppliers in the industry are willing to supply a good at various prices is called market supply.
Supply Function	Supply function is a mathematical representation of the relationship of supply of a good with its determinants.
Equilibrium Price	Price determined by interaction of total market demand and total market supply which prevails in the market is called equilibrium price.

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