16
WHAT AFFECTS SUPPLY

16.1 INTRODUCTION

In the previous lesson you have studied the meaning of demand, the factors affecting demand and the law of demand. We can't buy a commodity unless it is available in the market. So supply of a commodity is also important. In this lesson you will study the meaning of supply, the factors that affect the supply of a commodity and the law of supply.

16.2 OBJECTIVES

After going through this lesson you will be able to :

- define supply;
- list the factors that affect the supply of a good;
- explain how changes in the price of a commodity affect it supply;
- explain how other factors affect the supply of a commodity;
- prepare an individual seller's supply schedule;
- draw an individual seller's supply curve;
- explain the meaning of market supply;
- draw a market supply schedule and market supply curve;
- explain the law of supply ;
- distinguish between expansion of supply and increase in supply;
- distinguish between contraction of supply and decrease in supply.

16.3 MEANING OF SUPPLY

Supply of a commodity by a seller (called a firm) is the quantity of that commodity that he is willing to supply at a given price during a time period. The definition of supply must include (i) the quantity of the commodity that a firm is willing to supply, (ii) the price at which it is willing to supply that quantity and (iii) the time period during which it is willing to supply that quantity. Consider the following statements about the supply of a commodity.

(i) The supply of pens by a firm is 500 at a price of Rs. 5 per pen.

(ii) The supply of pens by a firm is 500 pens per day.

(iii) The supply of pens by a firm is 500 pens per day at a price of Rs. 5 per pen.

The first and the second statements are incomplete. In the first statement the time period is not stated. In the second statement the price of pen is not stated. The third statement is complete as it includes (i) the quantity that a firm is willing to supply (ii) the price and (iii) the time period.

16.4 MEANING OF MARKET SUPPLY

There are generally many firms selling a commodity. Market supply means the total quantity of a commodity that all the firms are willing to sell at a given price during a given time period. It is found by adding the supply of the firms selling the commodity.

POINTS TO REMEMBER

- Supply means the quantity of a commodity that a seller is willing to sell at a given price in a given period of time.
- Market supply is the sum of the supply of all the sellers of a commodity.

INTEXT QUESTIONS 16.1

Fill in the blanks :

(i) Supply of a commodity means the quantity of a commodity that a seller is willing to sell at a given price during a ________________.

(ii) Market supply is the ________________ of the supplies of all the sellers of a commodity.

(iii) Supply of a commodity is always at a ________________ during a time period.

16.5 FACTORS AFFECTING THE SUPPLY OF A COMMODITY

Supply of a commodity by a firm is generally not a fixed quantity. It keeps on changing. The factors that affect the supply of a commodity are :

(a) Price of the commodity
(b) Other factors which include

(i) Prices of other commodities
(ii) Prices of factors of production
(iii) Objective of the producer
(iv) Production technology

The factors affecting the supply of a commodity have been divided into two groups. In the first group only one factor i.e. the price of the commodity is included. In the second group four factors have been included and this group of factors is labelled as other factors. This grouping is done because the nature of effects on the supply of a commodity by each of these group is different. We will study the effects on the supply of a commodity of the factors under each group separately. While studying the effects of changes in the price of a commodity on its supply, we assume that the supply of the commodity is not affected by any of the factors included under other factors. This assumption is stated as 'other things remaining the same'. Similarly while studying the effects of changes in other factors on the supply of a commodity we assume that the price of the commodity does not change. This assumption is generally stated as 'price remaining the same'.

16.6 EFFECTS OF CHANGES IN THE PRICE OF A COMMODITY ON ITS SUPPLY

While studying the effects of changes in the price of a commodity on its supply, we assume that no other factor is affecting the supply of the commodity. In this section we will study how changes in the price of a commodity affect its supply, other things remaining the same. Other things remaining the same, a rise in the price of a commodity provides an incentive to its seller to sell more of it as it fetches more profits and a fall in the price is a disincentive to the seller as his profits fall. So when price of a commodity rises its quantity supplied rises and when the price of a commodity falls its quantity supplied falls. Thus there is a direct relationship between the price of a commodity and its quantity supplied.

(a) Supply Schedule of a Firm

The direct relationship between the price of a commodity and its quantity supplied by a firm can be shown in the form of a schedule. This schedule is called the supply schedule of an individual firm. In table 16.1 a supply schedule of a firm is given.

Table 16.1
Supply Schedule of a Firm

Price (per pen) (Rs.)	Quantity supplied of pen (per month)
2	100
3	150
4	200
5	250
6	300

At a price of Rs. 2 per pen the firm supplied 100 pens per month. When the price rises to Rs. 3, the quantity supplied rises to 150 pens. In this way, as the price of pen is rising the quantity supplied of pen is also rising. Now read this schedule from below i.e. start from the price of Rs. 6 per pen at which the quantity supplied is 300. When price falls from Rs. 6 to Rs. 5 the quantity supplied also falls from 300 to 250. Thus there is a direct relationship between the price and quantity supplied of a commodity.

(b) Supply Curve of a Firm

If we plot the supply schedule as given in table 16.1 we get the following curve.

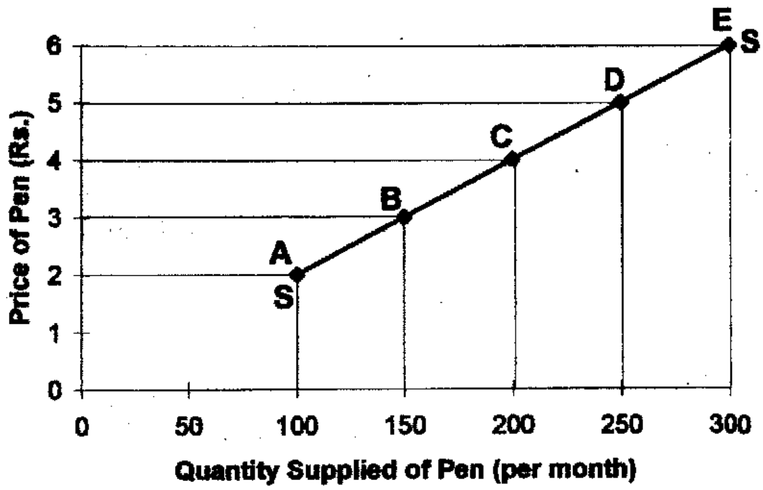

Figure 16.1 : Individual Supply Curve

On the OX axis we measure the quantity supplied per unit of time and on the OY axis we measure the price of the commodity. This curve is upward rising from left to right showing a direct relationship between the price of a commodity and its quantity supplied by a seller per unit of time. Point A shows that at the price of Rs. 2 per pen, the quantity supplied by the seller (per month) is 100 pens. Point B shows that the quantity supplied is 150 pens at the price of Rs. 3 per pen. Similarly points C, D and E show that the quantities of pen supplied are 200, 250 and 300 at prices of Rs.4, 5 and 6 respectively. By joining these points we get the supply curve SS .

(c) Market Supply Schedule

As explained earlier market supply is the total supply in the market of a commodity at a given price and in a given period of time. It is found by adding the supply by each seller of the commodity at a given price in a given period of time. Suppose there are only two firms A and B, selling pens in the market. The supply schedule of these two firms and the market supply schedule are given below in table 16.2:

Table 16.2

Price per pen (Rs.)	Quantity supplied of pen by firms (per month)		Market Supply
	A	B	
(1)	(2)	(3)	(4)
1	100	0	100
2	150	50	200
3	200	100	300
4	250	150	400
5	300	200	500

By adding the quantities of pen supplied by these two firms at each price, we get the market supply at each price. It is shown in column 4 of the table 16.2. At a price of Re. 1 per pen, the quantity supplied by firms A and B is 100 pens and 0 pens per month respectively. As in the market there are only these two sellers of pen, the total market supply is 100 pens per month (100+0) at a price of Re.1 per pen. Similarly we find the market supply at all other prices by adding the quantities supplied by firms A and B at each price.

(d) Market Supply Curve

If we plot the market supply schedule as given in table 16.2, we get a market supply curve. Notice that the shape of the market supply curve is similar to the shape of the firm's supply curve as shown in figure 16.1.

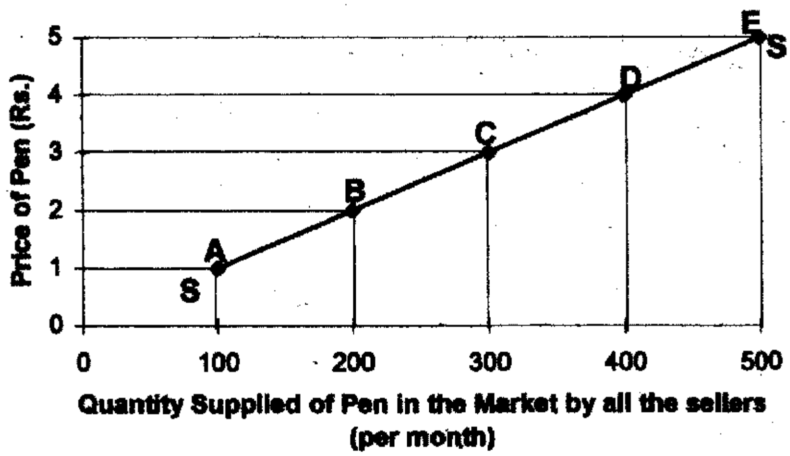

Fig. 16.2 : Market Supply Curve

This is so because the market supply is nothing but the sum of the supplies by all the individual sellers of the commodity in the market. This curve is also drawn in the same way as the firm's supply curve was drawn. This supply curve shows that as the price of the commodity rises its quantity suppued in the market also rises.

16.7 LAW OF SUPPLY

The direct relationship between the price of a commodity and its supply is stated in the form of a law 'the law of supply'. The law of supply states that other things remaining the same, there is a direct relationship between the price of a commodity and its quantity supplied in the market.

The market supply curve is a diagrammatic representation of the law of supply. You should remember that the law of supply states the relationship between the price and the supply of a commodity. Price of the commodity affects its supply. (It will be wrong to say that law of supply states the relationship between supply of a commodity and its price. In this case supply of a commodity is affecting its price which is not the law of supply.)

POINTS TO REMEMBER

- Other things remaining the same, the quantity supplied of a commodity rises with rise in its price and falls with a fall in its price.
- Other things remaining the same means other factors that affect supply do not affect it.
- Individual supply schedule shows the quantity supplied of a commodity by a seller at different prices.
- Market supply is the sum of the supplies of all the sellers of a commodity at a given price and at a given period of time.
- Market supply schedule shows the quantities supplied of a commodity by all its sellers at different prices.
- When supply schedule of a firm is plotted on a graph paper, we get a curve called the supply curve of a firm.
- When market supply schedule is plotted on a graph paper, we get market supply curve.
- Supply curve rises from left to right.
- Law of supply states that other things remaining the same there is a direct relationship between the price of a commodity and its quantity supplied.

INTEXT QUESTIONS 16.2

State whether the following statements are true or false?

(i) Supply of a commodity is only affected by its price.

(ii) There is an inverse relationship between the price and the supply of a commodity.

(iii) Supply schedule of a firm shows the quantities supplied of a commodity by a firm at different prices.

(iv) Supply curve is upward rising from left to right.

(v) Law of supply states that other things remaining the same the supply of a commodity is equal to its demand at a given price.

(vi) Market supply of a commodity is equal to the sum of the supplies by all its sellers in the market at a given price during a time period.

16.8 OTHER FACTORS AFFECTING THE SUPPLY OF A COMMODITY

You have studied in the previous section how the price of a commodity affects its supply. While studying the effects of changes in the price of a commodity on its supply we assumed that other factors that can affect supply remain unchanged. In this section we will study how these other factors affect the supply of a commodity. Now we assume that the price of the commodity does not change. The following factors besides the price of a commodity affect the supply of the commodity :

(i) Prices of other commodities
(ii) Prices of factors of production
(iii) Objectives of the producer
(iv) Production technology

Let us now study how each one of these factors affect the supply of a commodity. Remember that now we assume that the price of the commodity remains constant.

(i) Prices of other commodities :
If the prices of other commodities increase, it becomes more profitable for a firm to produce these other commodities. So it will shift its resources from the production of the commodity whose price has not changed to the production of the commodities whose prices have increased. For example, suppose a farmer grows sugarcane in his field and suppose the price of wheat rises and he finds growing wheat is more profitable than growing sugarcane. So he will start cultivating wheat on his field. This will result in fall in supply of sugarcane although its price has not changed. Let us take another example. Suppose a firm manufacture television sets because it finds its production more profitable than the production of other commodities. Suppose the price of television sets fall, it will make the production of television sets less profitable. So the producer will produce less television sets by shifting the resources from the production of television sets to the production of other goods like refrigerator or washing machine etc. So the supply of refrigerators or washing machine will rise although their price has not risen.Thus at the same price of a commodity it supply may increase or decrease due to a rise or fall in the prices of other commodities.

(ii) Prices of factors of production :
If the cost of production of a commodity rises due to a rise in the price of any one or more of its factors of production, and price of the commodity remaining the same then the margin of profit of its producers will fall. They will reduce the supply of the commodity though its price has not changed. Similarly a fall in the price of factors of production will increase the supply of a commodity.

(iii) Objectives of the producer :
Generally the objective of a producer of a commodity is to earn maximum profits. So he produces that much of a commodity which will fetch him maximum profits. However, it is possible that a producer may be interested in maximising his sales rather than his profits.

He goes on increasing the production and sales so long as his target of profit is not adversely affected. Therefore, the objective of a producer also affects the supply of the commodity.

(iv) Production Technology :

Technological advancement means introduction of new machines and better methods of production. This reduces the cost of production and increases profit. So the producer is able to supply more of the commodity at the same price. Thus improvement in technology increases the supply of a commodity, price remaining the same.

All the factors mentioned above affect the supply of a commodity. Price of the commodity remaining the same, its supply may increase or decrease because of changes in any one or more of these other factors.

POINTS TO REMEMBER

- The supply of a commodity is affected not only by price but by other factors also which include: (i) prices of other commodities, (ii) prices of factors of production, (iii) objectives of the producer, and (iv) production technology.
- While studying the effect of changes in these other factors we assume that the price of the commodity does not change.
- A fall in prices of other commodities and a rise in prices of factors of production reduce the supply of a commodity and vice-versa.
- A change in the objective of the producer from profit maximisation and improvement in technology increase the supply of a commodity and vice-versa.

INTEXT QUESTIONS 16.3

Fill in the blanks with suitable words given in the brackets.

(i) The supply of a commodity at the same price will ____________ if the prices of other commodities rise. (increase, decrease)

(ii) An improvement in production technology will increase the ____________ of the commodity. (cost, supply)

(iii) A rise in the prices of factors of production increases the ____________ of the commodity. (cost, supply)

(iv) Changes in other factors change the ________ of the commodity. (supply, price)

16.9 EXPANSION OF SUPPLY AND INCREASE IN SUPPLY

(a) Expansion of Supply

When the quantity supplied of a commodity rises, due to a rise in its price, other things remaining the same, it is called expansion of supply. Look at table 16.1 which shows a supply schedule. As the price of pen rises the supply is rising. This is called expansion of supply. Diagrammatically it would mean an upward movement along the given supply curve as shown in figure 16.3.

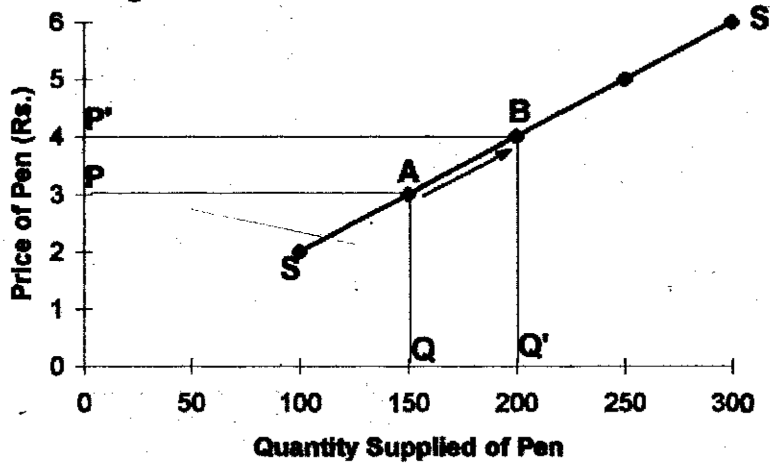

Fig. 16.3 : Expansion of Supply

(b) Increase in Supply

When at the same price, the supply of a commodity rises due to changes in any one or more of other factors, then it is called an increase in supply. Thus increase in supply means more supply of a commodity at the same price. The following table 16.3 shows the increase in supply.

Table 16.3

Price of Pen (Rs.) (1)	Original Supply (2)	Increased Supply (3)
2	20	30
3	30	40
4	40	50
5	50	60
6	60	70

In the above table, notice that at each of the prices shown in column (1) the supply has increased [compare the quantities given in columns (2) and (3)]. If we plot this table on a graph paper we will get the following figure 16.4.

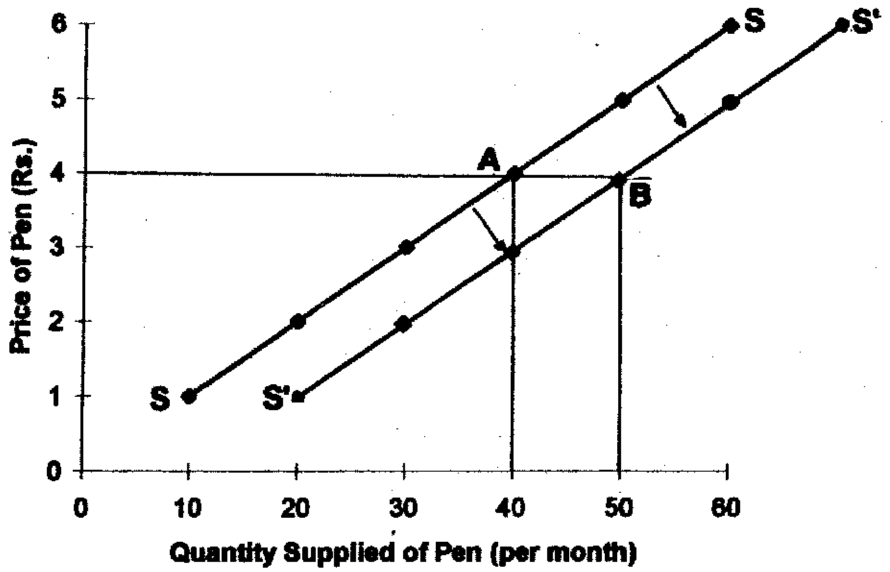

Fig. 16.4 : Increase in Supply

The original supply curve is SS and the new supply curve showing increased supply at each price is S^1S^1. Thus when an increase in supply takes place the supply curve shifts rightwards indicating that at the same price the supply has increased.

Point A on original supply curve SS shows that at a price of Rs. 4 per pen the quantity supplied is 40 pens. Point B on the new supply curve S^1S^1 shows that at the same price of Rs. 4 per pen, the quantity supplied has increased to 50 pens. The arrows in the figure 16.4 show the rightward shift of supply curve.

Thus a rise in the quantity supplied of a commodity due to a rise in its price is called expansion of supply. When supply of a commodity rises at the same price due to changes in other factors affecting supply, it is called increase in supply. Diagrammatically expansion of supply means an upward movement along the same supply curve whereas increase in supply will result in a rightward shift of the supply curve.

POINTS TO REMEMBER

- When quantity supplied of a commodity rises due to rise in its price alone it is called expansion of supply.
- When supply of a commodity rises at the same price, it is called increase in supply.
- Expansion of supply results in an upward movements along the same supply curve.
- Increase in supply results in a rightward shift of the supply curve.

INTEXT QUESTIONS 16.4

Fill in the blanks with appropriate words given in the bracket:

(i) Increase in supply means more supply at ____________ prices (higher, same, lower).

(ii) Expansion of supply means more supply at ____________ prices (same, higher, lower).

(iii) ____________ supply results in a rightward shift of the supply curve (Increase in, Expansion of).

(iv) When supply of a commodity rises at the same price, it is called ____________ supply (expansion of, increase in).

16.10 CONTRACTION OF SUPPLY AND DECREASE IN SUPPLY

(a) Contraction of Supply :

When the quantity supplied of a commodity falls due to a fall in its price, other factors remaining the same, it is called contraction of supply. Again look at table 16.1, this time read it from below starting from the price of Rs. 6 per pen. As the price is falling the quantity supplied is also falling. It is called contraction of supply. On a given supply curve, contraction of supply would result in a downward movement along the supply curve. This is shown in the figure 16.5 given below.

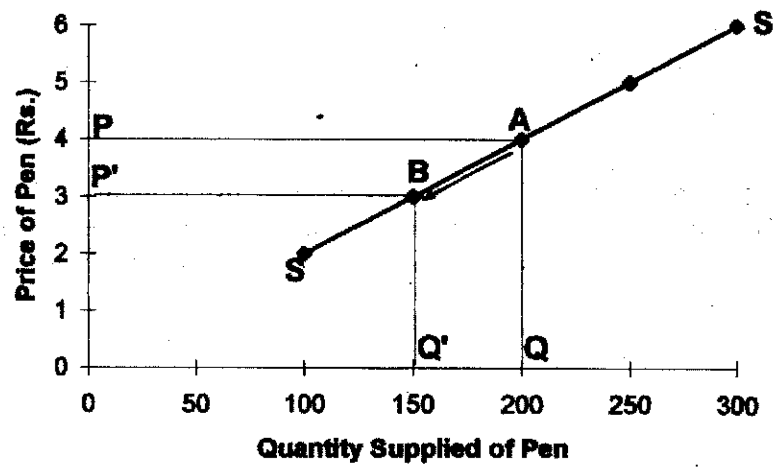

Fig. 16.5 : Contraction of Supply

(b) Decrease in Supply :

When at the same price of a commodity its supply falls due to other factors, it is called decrease in supply. In other words, decrease in supply of a commodity means less supply of it at the same price. The following table 16.4 shows the decrease in supply.

Table 16.4

Price of Pen (Rs.) (1)	Original Supply (2)	Decreased Supply (3)
2	20	10
3	30	20
4	40	30
5	50	40
6	60	50

In the table 16.4 compare the quantities given in column (2) and (3) at each price of the commodity. It shows that at each of the prices the supply has fallen. It is called decrease in supply. We will say that at a price of Rs. 2 per pen the supply of pen has decreased from 20 pens to 10 pens. If we plot the above table on a graph paper we will get the following figure 16.6.

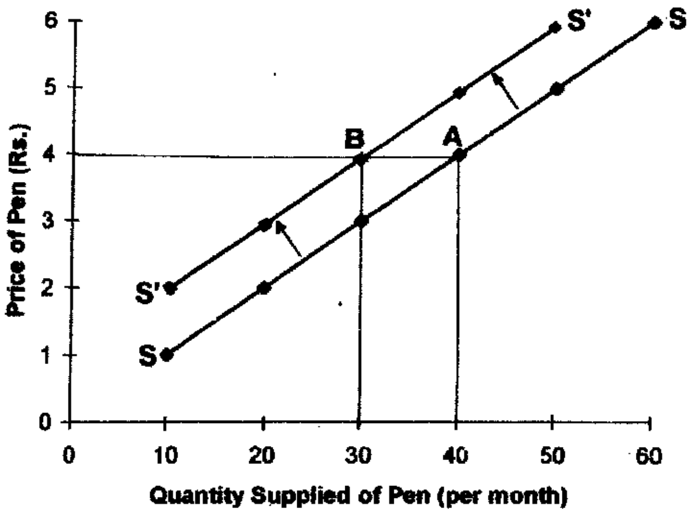

Fig. 16.6 : Decrease in Supply

SS is the original supply curve and supply curve S^1S^1 shows the decreased supply (as given in column (3) of table 16.4). Notice that the supply curve has shifted leftward. So a decrease in supply results in a leftward shift of the supply curve. It shows that at each price of the commodity the supply has decreased. At a price of Rs. 4 per pen the original supply was 40 pens and due to changes in other factors the supply now is 30 pens.

Thus a contraction of supply of a commodity means a fall in supply due to a fall in its price whereas a decrease in supply of a commodity means a fall in supply at the same price. It means the decrease in supply takes place due to changes in other factors affecting supply. Contraction of supply results in a downward movement along the same supply curve, but a decrease in supply results in a leftward shift of the supply curve.

POINTS TO REMEMBER

- When quantity supplied of a commodity falls due to a fall in its price, other things remaining the same, it is called contraction of supply.
- Contraction of supply results in a downward movement along the same supply curve.
- When supply of a commodity falls at the same price, it is called decrease in supply.
- Decrease in supply results in a leftward shift of the supply curve.

INTEXT QUESTIONS 16.5

State whether the following statements are true or false:

(i) A fall in supply of a commodity due to an increase in the prices of other commodities is called contraction of supply.

(ii) When at the same price of the commodity its supply falls it is called contraction of supply.

(iii) Effect of a fall in the price of a commodity on its quantity supplied can be shown by a shift in the supply curve.

(iv) A leftward shift of the supply curve shows a fall in supply of a commodity due to a fall in its price.

TERMINAL EXERCISE

1. What is meant by the term 'supply'?
2. Explain briefly the various factors which influence the supply of a commodity.
3. Explain how the price of a commodity influences its supply.
4. Explain the law of supply and point out the main assumptions behind the law.
5. Distinguish between market supply schedule and market supply curve.
6. How is it possible that a producer is prepared to supply more of a commodity even when its price has not changed?
7. Distinguish between expansion of supply and increase in supply of a commodity.
8. Distinguish between contraction of supply and decrease in supply of a commodity.
9. Distinguish between 'shift in supply curve' and 'movement along the supply curve'.

ANSWERS

Intext Questions 16.1
(i) given, time period (ii) total/sum (iii) price

Intext Questions 16.2
(i) False (ii) False (iii) True (iv) True (v) False (vi) True

Intext Questions 16.3
(i) decrease (ii) supply (iii) cost (iv) supply

Intext Questions 16.4
(i) same (ii) higher (iii) Increase in (iv) increase in

Intext Questions 16.5
(i) False (ii) False (iii) False (iv) False

Terminal Exercise
1. Read section 16.3
2. Read section 16.5
3. Read section 16.6
4. Read section 16.7
5. Read section 16.6 (c&d)
6. Read section 16.8 (iii)
7. Read section 16.9
8. Read section 16.10
9. Read section 16.9 & 16.10