11

DETERMINATION OF PRICE AND QUANTITY

In lesson 9 you have studied how changes in price of a commodity affects its demand. In lesson 10, the same type of study was done about the supply of a commodity. In fact, both demand and supply of a commodity are affected by change in price of the commodity. But the interesting point to be noted is that the change in both demand and supply of a commodity also influences the price of the commodity. But the question arises how is the price of a commodity determined in the market. What factors influence the price of a commodity? How changes in demand and supply of a commodity influence its price, is the subject matter of this lesson.

OBJECTIVES

After completing this lesson, you will be able to:

- *understand what is meant by determination of price;*
- *explain price determination with the help of demand and supply schedule;*
- *understand the equilibrium with the help of schedule;*
- *understand the effects of changes in demand and supply on price and quantity of a commodity.*

11.1 MEANING OF PRICE

When a seller sells a commodity, he exchanges it for money. The buyer pays money to the seller in exchange of goods and services. The amount of money which a buyer pays for one unit of a good or service to the seller, is called the price of the good or service. For example a buyer pays Rs 36 to buy one litre of full cream milk, the price of full cream milk will be Rs 36 per litre.

Normally, the main aim of the seller is to earn profit. Profit is the difference between total revenue and total cost. Total revenue means total money receipts of the producer from the sale of given volume of output. Total cost means total expenditure incurred by a seller in the production of that output.

The seller fixes the price of the commodity supplied by him. The market price of a commodity is the price at which it is sold in the market. While fixing the price of a commodity the seller keeps in mind many factors besides earning maximum profit. Some of the important factors which influence the decision of a seller in fixing the price of a commodity are given below.

(i) **Cost of production**: A seller fixes the market price of his commodity which is more than the per unit cost of production of commodity. The difference between the per unit price and per unit cost of production of the commodity is profit per unit. Thus, higher the difference between price and per unit cost of production greater will be the margin of profit. So per unit cost of production is of great importance in fixing the price of the commodity by a seller.

(ii) **Price fixed by other sellers**: While fixing the price of his commodity, the seller also considers the price of commodity fixed by the other sellers of similar commodity. If a seller fixes the price of his commodity which is much higher than the price fixed by other sellers of similar commodity, he may not be able to sell more quantity of the commodity. So in order to increase his sales he will have to decrease the price of his commodity. Thus, it is also very important for the seller of a commodity to fix the price of his commodity which is comparable to the price of other sellers in order to earn maximum profit.

(iii) **Expected sales at different prices**: The seller also considers the quantity of the commodity he will be able to sell at different prices. So, the price of the commodity fixed by him must be such that the total quantity of the commodity sold by him gives him maximum total profit.

INTEXT QUESTIONS 11.1

1. Suppose you are a seller of tomatoes in the market. Name the factors you will consider while fixing the price of tomatoes sold by you.
2. What will be the effect on price of tomatoes fixed by you if the cost of transportation increases due to increase in price of diesel.

11.2 MEANING AND DETERMINATION OF PRICE

If the seller fixes a higher price of the commodity, the quantity supplied of the commodity may be more than the quantity demanded and if he fixes the lower price of the commodity, the quantity demanded of the commodity may be more than its quantity supplied. You have already learnt that according to the law of demand the buyer of a commodity buys more of a commodity at a lower price and less of it at a higher price when all other factors determining demand remain constant. According to the law of supply, the sellers of a commodity are willing to sell more of it at a higher price and less of it at a lower price, other factors determining supply remaining constant. The aim of buyer is to get maximum satisfaction by spending minimum and the aim of the seller is to get maximum profit. If at a price both quantity demanded and quantity supplied of a commodity are equal that is called equilibrium price of the commodity. In this way, the price of a commodity is determined by the forces of demand and supply in the market. But in case of some commodities, the price is determined by the government to protect the interest of consumers or producers. In this lesson, we will discuss how the price of a commodity is determined by the forces of demand and supply.

11.3 MEANING OF EQUILIBRIUM PRICE

Equilibrium literally means a state of balance from where there is no tendency to change. In other words equilibrium is a situation where the forces determining equilibrium are in balance or are equal to each other. Here the forces determining equilibrium price are quantity demanded and quantity supplied of the commodity. The price at which quantity demanded of a commodity is equal to its quantity supplied is called the equilibrium price.

At equilibrium price quantity demanded and quantity supplied of a commodity are equal. This quantity is called the equilibrium quantity of the commodity.

11.4 DETERMINATION OF EQUILIBRIUM PRICE

In practical life, the price at which the seller/firm wants to sell a commodity, its quantity supplied may be greater or lesser than its quantity demanded. So this price is not the equilibrium price of the commodity. Now the question arises as to how will equilibrium be reached?

Consider the market demand and market supply schedule of tomatoes at different prices as given in table 11.1. You have alreadey read about market demand and supply schedules of a commodity in lesson 9 and 10 respectively.

Table 11.1 Quantity demanded and supplied of tomatoes

Price of tomatoes (Rs per kg)	Quantity demanded per day (kgs)	Quantity supplied per day (kgs)
20	100	300
18	150	250
16	**200**	**200**
14	250	150
12	300	100

In table 11.1, it is observed that when the price of tomatoes is Rs 20 per kg, the seller offers 300 kg of tomatoes for sale but the buyers are willing to buy only 100 kg of tomatoes. If the price falls to Rs 18 per kg, the quantity demanded rises to 150 kg but the quantity supplied falls to 250 kg of tomatoes. In both the cases, the quantity supplied of tomatoes is more than its quantity demanded showing excess supply of tomatoes. This will result in further fall in price of tomatoes.

Now due to excess supply, the price of tomatoes falls to Rs 16 per kg. At this price buyers are willing to buy 200 kg of tomatoes and the sellers are also willing to sell the same quantity of tomatoes i.e. 200 kg of tomatoes. This is how equilibrium price in reached. Thus Rs 16 per kg is the equilibrium price of tomatoes at which quantity demanded of tomatoes is equal to quantity supplied at 200 kg of tomatoes.

11.5 DISEQUILIBRIUM SITUATIONS AND ADJUSTMENT TO EQUILIBRIUM POSITION

In the table 11.1 see that at prices Rs 12 and 14 (less than equilibrium price) quantity demanded and supplied are not equal. Similarly at prices Rs 20 and 18 (more than equilibrium price) quantity demanded and supplied are also not equal. These two situations are disequilibrium situtations. Let us explain them.

Consider the situation in which the market price of tomatoes is Rs 12 per kg. At this price the buyers are willing to buy 300 kg of tomatoes where as the sellers are willing to sell only 100 kg of tomatoes. Similarly when the price of tomatoes is Rs 14 per kg the quantity demanded of tomatoes falls to 250 kg and quantity supplied rises to 150 kg. Both these case show **excess demand** of tomatoes in the market. This will lead to further rise in price of tomatoes. The price of tomatoes will continue to rise till a price is reached at which quantity demanded of tomatoes equals their quantity supplied. Thus equilibrium price of tomatoes will be reached at Rs 16 per kg at which both quantity demanded and quantity supplied of tomatoes are equal at 200 kg.

On the other hand, when the price of tomatoes rises to Rs 18 per kg, quantity demanded is 150 kg and quantity supplied is 250 kg i.e. quantity supplied of tomatoes is more than their quantity demanded. This is situation of **excess supply** of tomatoes. This will lead to fall in price and price will continue to fall till it reaches equilibrium price Rs 16 per kg at which quantity demanded and supplied of tomatoes are equal i.e. 200 kg.

INTEXT QUESTIONS 11.2

1. Suppose you are a seller of tomatoes and you have 100 kg of tomatoes for sale. The market price is Rs 20 per kg. At this price the demand for tomatoes is only 60 kg. How will it affect the price of tomatoes fixed by you?

2. As in Question No. 1, if at price Rs 20 per kg the demand for tomatoes is 150 kg. How will this affect the price of tomatoes fixed by you?

3. Tick mark (√) the correct answer

   Excess demand is a situation where:

   (a) Quantity demanded of a commodity equals its quantity supplied

   (b) Quantity demanded of a commodity is more than its quantity supplied.

   (c) Quantity supplied of a commodity is more than its quantity demanded

4. Thick mark (√) the correct answer

   Excess supply is a situation where:

   (a) Quantity supplied of a commodity is more than its quantity demanded

   (b) Quantity supplied of a commodity equals its quantity demanded

   (c) Quantity supplied of a commodity is less than its quantity demanded.

5. Tick mark (√) the correct answer:

   If at a given price of a commodity quantity demanded of a commodity is more than its quantity supplied:

   (a) Price of the commodity does not change

   (b) Price starts falling

   (c) Price starts rising

6. If at a given price quantity supplied of a commodity is greater than its quantity demanded:

   (a) Price starts falling

   (b) Price remains the same

   (c) Price starts rising

11.6 EFFECT OF CHANGE IN DEMAND ON EQUILIBRIUM PRICE AND QUANTITY

You have studied that equilibrium price of a commodity is the price at which quantity demanded of the commodity is equal to its quantity supplied. But what happens when the demand for commodity increases but its supply remains the same. An increase in the demand of the commodity will lead to increase in equilibrium price and quantity demanded and supplied of the commodity. On the other hand, if demand for the commodity decreases but its supply remains the same, it will lead to decrease in equilibrium price and quantity demanded and supplied of the commodity.

11.7 EFFECT OF CHANGE IN SUPPLY ON EQUILIBRIUM PRICE AND QUANTITY

When the supply of a commodity increases but its demand remains the same, equilibrium price will decrease but equilibrium quantity demanded and supplied will increase. On the other hand when the supply of a commodity decreases but its demand remains the same, its equilibrium price will increase but equilibrium quantity demanded and supplied will decrease.

INTEXT QUESTIONS 11.3

1. What happens to the equilibrium price of a commodity when

   (a) its demand increases and supply remains the same

   (b) its supply increases and demand remains the same

   (c) its demand decreases but supply remains the same

   (d) it supply decreases but demand remains the same

2. How is equilibrium quantity demanded and supplied of a commodity affected when

   (a) its demand increases but supply remains the same

(b) its supply increases but demand remains the same

(c) its demand decreases but supply remains the same

(d) its supply decreases but demand remains the same.

WHAT YOU HAVE LEARNT

- The amount of money given by a buyer to a seller in exchange of a unit of a goods or service is treated as price of that good or service.
- Equilibrium price is the price at which both quantity demanded and supplied of a commodity are equal.
- Equilibrium price is determined by the market forces of demand and supply of a commodity.
- Excess demand is a situation when at a given price quantity demanded of a commodity is greater than its quantity supplied.
- Excess supply is a situation when at a given price quantity supplied of a commodity is greater than its quantity demanded.
- When there is excess demand of the commodity the price starts rising and it continues to rise till equilibrium price is reached.
- When there is excess supply of the commodity its price starts falling and continues to fall till equilibrium price is reached.
- When demand for a commodity increases but its supply remains the same, both equilibrium price and quantity demanded and supplied will increase.
- When demand for a commodity decreases but its supply remains the same both equilibrium price and equilibrium quantity demanded and supplied will decrease.
- When supply of a commodity increases and its demand remains the same, equilibrium price will decrease and equilibrium quantity demanded and supplied will increase.
- When supply of a commodity decreases but its demand remains the same equilibrium price will increase but equilibrium quantity demanded and supplied will decrease.

TERMINAL EXERCISE

1. What is meant by price?
2. What is meant by equilibrium price?
3. What is meant by equilibrium quantity?
4. How is equilibrium price of a commodity determined?
5. What happens to the price of a commodity when at a given price:
   (a) Quantity demanded of a commodity is greater than its quantity supplied
   (b) Quantity supplied of a commodity is greater than its quantity demanded
   (c) quantity demanded of a commodity is equal to its quantity supplied
6. How is equilibrium price of a commodity affected when demand increases but supply remains the same.
7. Explain the effect of decrease in supply of a commodity on its equilibrium price and equilibrium quantity demanded and supplied when its demand remains the same.

ANSWERS TO INTEXT QUESTIONS

Intext Questions 11.1

1. (i) cost of production

   (ii) price fixed by other seller of similar commodity

   (iii) expected sales at different prices.
2. Price of tomatoes will increase.

Intext Questions 11.2

1. The price of tomatoes will decrease
2. The price of tomatoes will increase
3. (b)

4. (a)
5. (c)
6. (a)

Intext Questions 11.3

1. (a) Equilibrium price will increase

   (b) Equilibrium price will decrease

   (c) Equilibrium price will decrease

   (d) Equilibrium price will increase

2. (a) will increase

   (b) will increase

   (c) will decrease

   (d) will decrease