

# Supply and Price Elasticity of Supply

## PART 1

### Objective Questions

#### • Multiple Choice Questions

1. The supply of a commodity implies
- (a) actual product of a good
  - (b) stock available for sale
  - (c) total existing stock of the good
  - (d) the amount of goods offered for sale at a different prices, per unit of time

**Ans.** (d) the amount of goods offered for sale at a different prices, per unit of time

2. Supply of a commodity is ..... concept.
- (a) stock
  - (b) flow
  - (c) Both (a) and (b)
  - (d) wholesale

**Ans.** (b) The quantity of supply changes with time and thus, measured over a period of time. So, it is a flow concept.

3. The supply curve is usually
- (a) upward rising
  - (b) downward sloping
  - (c) nothing definite can be said
  - (d) None of the above

**Ans.** (a) upward rising

4. The claim that other things being equal, the quantity supplied of a good rises when the price of good rises and vice-versa is known as
- (a) Law of Economics
  - (b) Law of Supply
  - (c) Law of Demand
  - (d) All of these

**Ans.** (b) Law of Supply

5. The functional relationship between supply of a commodity and its various determinants is known as
- (a) Supply function
  - (b) Change in supply
  - (c) Change in quantity supplied
  - (d) None of the above

**Ans.** (a) Supply function

6. When supply curve shifts to the right, there is ..... in supply.

- (a) an increase
- (b) expansion
- (c) contraction
- (d) decrease

**Ans.** (a) Rightward shift in supply indicates increase in quantity at the existing price leading to change in other factors known as increase in supply.

7. Increase or decrease in supply means

- (a) change in supply due to change in its own price.
- (b) change in supply due to change in factors other than its own price.
- (c) Both (a) and (b)
- (d) None of the above

**Ans.** (b) change in supply due to change in factors other than its own price.

8. Expansion in supply refers to a situation when the producers are willing to supply a

- (a) larger quantity of the commodity at an increased price.
- (b) larger quantity of the commodity due to increased taxation on that commodity.
- (c) larger quantity of the commodity at the same price.
- (d) larger quantity of the commodity at the decreased price.

**Ans.** (a) larger quantity of the commodity at an increased price.

9. Contraction of supply curve means

- (a) upward movement along the supply curve
- (b) downward movement along the supply curve
- (c) rightward shift in supply curve
- (d) leftward shift in supply curve

**Ans.** (b) downward movement along the supply curve

10. If a firm's supply increases due to application of improved technology, this is known as

- (a) Expansion in supply
- (b) Contraction in supply
- (c) Increase in supply
- (d) Increase in quantity supplied

**Ans.** (c) If the supply of a commodity increases due to other factors than its price, it is called 'increase in supply'. Causes of increase in supply are improvement in technology, increase in price of its complementary goods, decrease in taxation, decrease in price of its substitute goods, etc.

- 11.** Elasticity of supply is defined as a measure of the responsiveness of quantity supplied of a good to change in  
 (a) price of concerned good (b) price of substitute good  
 (c) demand (d) None of these

**Ans.** (a) price of concerned good

- 12.** A horizontal supply curve parallel to the quantity axis implies that the elasticity of supply is  
 (a) zero (b) infinite  
 (c) equal to one (d) greater than zero but less than one

**Ans.** (b) infinite

- 13.** When supply is perfectly inelastic, elasticity of supply is equal to  
 (a) -1 (b) zero  
 (c) 1 (d) infinity

**Ans.** (b) zero

- 14. Statement I** Supply and quantity supplied are one and the same thing.

**Statement II** Change in supply due to price is called as change in quantity supplied.

**Alternatives**

- (a) Statement I is correct and Statement II is incorrect  
 (b) Statement II is correct and Statement I is incorrect  
 (c) Both the statements are correct  
 (d) Both the statements are incorrect

**Ans.** (b) Statement II is correct and Statement I is incorrect

- 15. Statement I** Supply of precious goods is inelastic in nature.

**Statement II** Supply curve starting from Y-axis is elastic in nature.

**Alternatives**

- (a) Statement I is correct and Statement II is incorrect  
 (b) Statement II is correct and Statement I is incorrect  
 (c) Both the statements are correct  
 (d) Both the statements are incorrect

**Ans.** (c) Both the statements are correct

- 16.** Choose the correct pair.

Column I	Column II
A. Improvement in Technology	(i) Upward Movement along Supply Curve
B. Rise in Taxes	(ii) Leftward Shift in Supply
C. Supply Curve Passing through Origin	(iii) Inelastic Supply

**Codes**

- (a) A-(i) (b) B-(ii)  
 (c) C-(iii) (d) All of these

**Ans.** (b) B-(ii)

● **Assertion-Reasoning MCQs**

**Direction** (Q. Nos. 1 to 5). There are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the appropriate option from the options given below

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)  
 (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A)  
 (c) Assertion (A) is true, but Reason (R) is false  
 (d) Both Assertion (A) and Reason (R) are false

- 1. Assertion (A)** According to law of supply, as the cost of production increases producer increase selling price and accordingly supply of the good increases.

**Reason (R)** Increase in price of complementary goods, leads to increase in quantity supply.

**Ans.** (d) According to law of supply, other factors remain constant and thus movement happens along the supply curve only due to price of the commodity.

Price of complementary goods is considered as other factors and thus leads to change in supply and not quantity supplied.

- 2. Assertion (A)** Extension in supply is caused by change in factors other than own price. This leads to movement along the supply curve.

**Reason (R)** Change in quantity supplied is an impact of change in other factors leading to shift in supply curve to the right.

**Ans.** (d) Extension of supply is caused by increase in price keeping other factors constant while change in quantity supplied is caused by change in price keeping other factors constant.

- 3. Assertion (A)** Elasticity of supply curve passing through the origin always has elasticity equal to unity regardless of the angle it makes.

**Reason (R)** Slope of supply curve and elasticity of supply are directly proportional.

**Ans.** (c) Slope of supply curve and elasticity of supply are inversely proportional i.e., as slope increases, elasticity decreases and vice-versa.

- 4. Assertion (A)** Elasticity of supply is higher for flatter curve compared with a steeper supply curve.

**Reason (R)** Percentage change of quantity is greater than that of change in price on a flatter supply curve.

**Ans.** (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

5. **Assertion (A)** Supply of agricultural goods is less elastic in nature.

**Reason (R)** There are many natural constraints in an agricultural produce which restricts its supply.

**Ans.** (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

### • Case Based MCQs

1. **Direction** Read the following case study and answer the question no. (i) to (vi) on the basis of the same.

A tariff is a tax placed on the products of foreign countries sold in the United States. Assume, there is a 10% tax on foreign-made automobiles. Who would bear the incidence of this tax? Assume that a Japanese car and a similar American car each sell in the United States at a price of \$25,000.

With the 10% tax on the Japanese car (\$2,500), the Japanese company would like to raise the price of its car to \$27,500. Whether it can do so or not depends on the price elasticity of demand for Japanese cars. If the demand for Japanese cars is relatively inelastic, the quantity demanded will fall very little at the price of \$27,500. This means that buyers do not find Japanese and American cars to be close substitutes.

The incidence of the tax would be on the car buyers. On the other hand, if the demand for Japanese cars is relatively elastic, the quantity of Japanese cars demanded will fall considerably at the price of \$27,500. This means that buyers will closely substitute between Japanese and American cars. The Japanese company will have to charge a price close to \$25,000 in the United States to be able to compete.

The incidence of the tariff will be on the Japanese automobile companies. In technical language, a tariff on a foreign product that has very elastic demand is called an optimal tariff. The price of the foreign product rises very little in the United States. Most of the tariff is paid by the foreign company as reduced profits. The gain, of course, goes to the United States Government, who collects the money.

- (i) What be the impact of tariff imposed on supply for Japanese cars?  
(a) Supply will remain constant  
(b) Supply will increase  
(c) Supply will decrease (d) None of these

**Ans.** (c) Supply will decrease

- (ii) Impact of tariff will be higher on supply of cars, if demand is .....  
(a) less elastic (b) more elastic  
(c) perfectly elastic (d) perfectly inelastic

**Ans.** (a) Impact of tariff will be higher when the supply is inelastic as in that case, quantity does not change by much even though price changes.

(iii) What will be the impact on the supply for American cars, if tariff is imposed on Japanese cars with low price elasticity of supply?

- (a) Increase (b) Decrease  
(c) Remain constant (d) May or may not increase

**Ans.** (c) Remain constant

(iv) With increase in taxes by the government, supply will fall due to .....

- (a) increase in cost of production  
(b) fall in investments  
(c) Both (a) and (b)  
(d) Neither (a) nor (b)

**Ans.** (a) increase in cost of production

(v) **Assertion (A)** A tariff has a lower impact on supply if the good is inelastic.

**Reason (R)** In case of inelastic supply, quantity doesn't change much due to change in its determinants.

#### Alternatives

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)  
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A)  
(c) Assertion (A) is true, but Reason (R) is false  
(d) Both Assertion (A) and Reason (R) are false

**Ans.** (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(vi) As per the above information, which of the following has an impact on the supply of the cars?

- (a) Tariff  
(b) Consumer's preferences  
(c) Elasticity of supply (d) All of the above

**Ans.** (d) All of the above

2. **Direction** Read the following case study and answer the question no. (i) to (vi) on the basis of the same.

Year 2020 has seen many ups and downs in terms of production activities and demand in the whole country. Not only India, the entire world has suffered in a big way due to the outbreak of Corona Virus Pandemic. Since, this Pandemic started in November 2019 in China till Present time our trading relation with China has also been affected, not only this due to boarder conflict as well.

India is now facing the problem of deflationary gap and heading towards a negative growth rate. Government of India has also announced a relief package to help revive the economic condition of the vulnerable groups.

Slowly and gradually impact has been seen on the market as India's fuel demand is increased during September 2020.

- (i) What was the impact of lockdown in India on supply of essential items?  
 (a) Remain constant  
 (b) Increased  
 (c) Decreased  
 (d) Can't be determined

**Ans.** (b) During the lockdown, government focused upon supplying essential goods to all people leading to rise in supply of goods.

- (ii) What will be impact on supply of fuel if demand increase?  
 (a) Increase (b) Decrease  
 (c) Remain constant  
 (d) Depends upon availability of fuel in the international market.

**Ans.** (d) Depends upon availability of fuel in the international market.

- (iii) With increase in supply of essentials goods, its supply curve will .....  
 (a) shift to the right (b) shift to the left  
 (c) move upward (d) move downward

**Ans.** (a) Increase in supply causes a rightward shift in the supply curve.

- (iv) **Assertion (A)** With the announcement of relief packages by the government, supply of essential commodities will further increase.

**Reason (R)** Essential goods are necessity of life thus given priority by the government.

**Alternatives**

- (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)  
 (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A)  
 (c) Assertion (A) is true, but Reason (R) is false  
 (d) Both Assertion (A) and Reason (R) are false

**Ans.** (b) Relief packages were meant for supplying essentials to all people and thus leads to rise in supply.

- (v) If the fuel prices increase, it will lead to.....in supply of essential goods.  
 (a) increase (b) decrease  
 (c) remain constant (d) Either (a) or (b)

**Ans.** (d) Impact of fuel price is not clear on supply as it depends upon the nature of commodity sold.

- (vi) Elasticity of supply of essential commodities are  
 (a) highly inelastic (b) elastic  
 (c) perfectly inelastic (d) perfectly elastic

**Ans.** (a) highly inelastic

## PART 2

# Subjective Questions

### • Short Answer (SA) Type Questions

1. Explain, how technological progress is a determinant of supply of a good by a firm.

**Ans.** Technological progress tends to lower the Marginal and Average Costs of production, because better technology facilitates higher output with the same inputs.

Accordingly, producers are willing to supply more at the existing price, as a result, supply of producer increases.

2. Explain, how input prices are a determinant of supply of a good by a firm.

**Ans.** In case of increase in input price, cost of production tends to rise. Accordingly, producers will supply less of the commodity at its existing price as there is a decrease in producer's profit.

On the other hand, in case of fall in the prices of inputs, the cost of production tends to fall, leading to an increase in producer's profit. This induces him to increase his supply.

3. Using diagram and schedule, explain the law of supply.

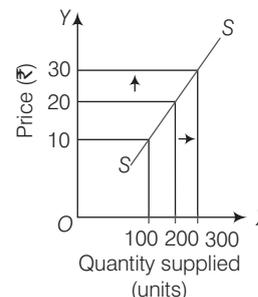
**Ans.** The law of supply states that other things being equal, quantity supplied increases with the increase in price and decreases with the decrease in price of a commodity.

It can be explained with the help of following schedule and diagram

Price (₹)	Quantity Supplied (Units)
10	100
20	200
30	300

The supply schedule shows the positive relationship between price and quantity supplied. This is in accordance with the law of supply.

SS is the supply curve sloping upward. It shows a positive relationship between price and quantity supplied of a commodity. When price increases from ₹ 10 to ₹ 20, quantity supplied increases from 100 to 200 units.



4. (i) Explain the effect of rise in input prices on supply of a commodity.

(ii) Explain the effect of fall in prices of inputs on the supply of a good.

**Ans.** (i) In case of increase in input price, marginal cost tends to rise. Accordingly, producers will supply less of the commodity at its existing price because of a fall in their profits.

(ii) In case of fall in input price, marginal cost will decline. Accordingly, producer will supply more of the commodity at its existing price because of increase in their profits.

5. State any three causes of rightward shift in supply curve.

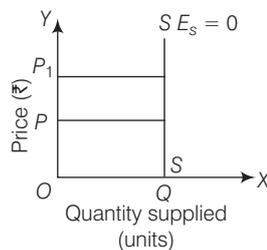
**Ans.** Causes of rightward shift in supply curve are as follows (any three)

- Fall in the price of substitute goods.
- Fall in the price of factors of production.
- Improvement in technology.
- Increase in the number of firms in the market.
- Rise in the price of complementary goods.

6. Explain the situation of zero elasticity of supply with the help of a diagram.

**Ans.** It refers to a vertical straight line supply curve showing constant supply.

It is shown in the given figure



In such a situation, it is assumed that supply is constant, whatever the changes in price.

7. A firm supplies 10 units of a good at a price of ₹ 5 per unit. Price Elasticity of Supply is 1.25. What quantity will the firm supply at a price of ₹ 7 per unit?

**Ans.** Given,  $E_s = 1.25$ ,  $P = ₹ 5$

$$P_1 = ₹ 7, \quad Q = 10$$

$$Q_1 = ?$$

$$\Delta P = P_1 - P = 7 - 5 = 2$$

$$\text{Price Elasticity of Supply } (E_s) = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$1.25 = \frac{\Delta Q}{2} \times \frac{5}{10}, \quad \Delta Q = 1.25 \times 4 = 5$$

$$Q_1 = \text{Actual Quantity} + \text{Change in Quantity} \\ = Q + \Delta Q = 10 + 5$$

$$Q_1 = 15 \text{ units}$$

8. A firm supplies a certain quantity of a good at a price of ₹ 10 per unit. When price changes to ₹ 9 per unit, the firm supplies 10 units less. Price elasticity of supply is 1. What is the quantity supplied before price change?

**Ans.**  $P = ₹ 10$ ,  $P_1 = ₹ 9$

$$\Delta P = 9 - 10 = (-) ₹ 1 \Rightarrow Q = ?, \quad \Delta Q = -10 \Rightarrow E_s = 1$$

$$\text{Now, Price Elasticity of Supply } (E_s) = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$1 = \frac{-10}{-1} \times \frac{10}{Q} \Rightarrow Q = 100$$

$\therefore$  Quantity supplied before price change = 100 units

9. Explain any two factors that cause a shift of supply curve.

**Ans.** Two factors that cause a shift of supply curve are

- Change in Technology** Technological improvement tends to lower the marginal and average costs of production because better technology facilitates higher output with the same inputs. Accordingly, producers are willing to supply more at the existing price. This implies a rightward shift in supply curve and vice-versa.
- Change in Input Price** Input price may increase or decrease. In case of increase in input price, marginal and average costs tend to rise. Accordingly, producers will supply less of the commodity at its existing price. This implies a leftward shift in supply curve and vice-versa.

10. Price of commodity A is ₹ 10 per unit and Total Revenue at this price is ₹ 1,600. When its price rises by 20%, total Revenue increases by ₹ 800. Calculate its price elasticity of supply.

**Ans.** Given,  $P = ₹ 10$ ,

$$P_1 = 10 + 20\% \text{ of } 10$$

$$= 10 + 2 = ₹ 12$$

$$\text{Initial Total Revenue} = ₹ 1,600$$

$$\text{New Total Revenue} = 1,600 + 800 = ₹ 2,400$$

$$\text{When, } P = ₹ 10, \quad Q = 1,600 \div 10 = 160$$

$$\text{When, } P_1 = ₹ 12, \quad Q_1 = 2,400 \div 12 = 200$$

$$\text{Now, } P = ₹ 10, \quad P_1 = ₹ 12$$

$$\Delta P = 12 - 10 = ₹ 2,$$

$$Q = 160, \quad Q_1 = 200$$

$$\Delta Q = 200 - 160 = 40$$

$$\text{Price Elasticity of Supply } (E_s) = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$$

$$= \frac{40}{2} \times \frac{10}{160}$$

$$= \frac{5}{4} = 1.25$$

$\therefore$  Price Elasticity of Supply

$$(E_s) = 1.25 \text{ (more than unit elastic)}$$

11. When the price of a good rises from ₹ 20 per unit to ₹ 30 per unit, the revenue of the firm producing this good rises from ₹ 100 to ₹ 300. Calculate price elasticity of supply.

Ans. Given,

Price (₹)	Total Revenue (TR) (₹)
20	100
30	300

$$\text{Quantity Supplied (Q)} = \frac{\text{TR}}{\text{P}} = \frac{100}{20} = 5$$

$$Q_1 = \frac{300}{30} = 10$$

So,

$$P = 20$$

$$Q = 5$$

$$P_1 = 30$$

$$Q_1 = 10$$

$$\Delta P = P_1 - P = 30 - 20 = 10$$

$$\Delta Q = Q_1 - Q = 10 - 5 = 5$$

$$\text{Price Elasticity of Supply (E}_s\text{)} = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} = \frac{5}{10} \times \frac{20}{5}$$

$$E_s = 2 \text{ (more than unit elastic)}$$

12. At a price of ₹ 5 per unit of a commodity A, total revenue is ₹ 800. When its price rises by 20%, total revenue increases by ₹ 400. Calculate its price elasticity of supply.

Ans. Given,  $P = ₹ 5$ , Initial Total Revenue = ₹ 800

$$P_1 = 5 + 20\% \text{ of } 5 = 5 + 1 = ₹ 6$$

$$\text{New Total Revenue} = 800 + 400 = ₹ 1,200$$

$$Q = 800 \div 5 = 160$$

$$Q_1 = 1,200 \div 6 = 200$$

$$\Delta Q = Q_1 - Q = 200 - 160 = 40$$

$$\Delta P = P_1 - P = 6 - 5 = ₹ 1$$

$$\begin{aligned} \text{Price Elasticity of Supply (E}_s\text{)} &= \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} \\ &= \frac{40}{1} \times \frac{5}{160} = \frac{5}{4} = 1.25 \end{aligned}$$

∴  $E_s = 1.25$  (more than unit elastic)

13. Commodities X and Y have equal Price Elasticity of Supply. The supply of X rises from 400 units to 500 units due to a 20% rise in its price. Calculate the percentage fall in supply of Y if its price falls by 8%.

Ans. Given,  $E_s$  of X =  $E_s$  of Y

$$Q_X = 400, Q'_X = 500$$

$$\text{Percentage change in price of X} = 20\%$$

$$\text{Percentage change in price of Y} = 8\%$$

$$\Delta Q_X = Q'_X - Q_X$$

$$= 500 - 400 = 100 \text{ units}$$

Price Elasticity of Supply of X

$$(E_s)_X = \frac{\text{Percentage Change in Quantity Supplied}}{\text{Percentage Change in Price}}$$

$$= \frac{\frac{\Delta Q_X}{Q_X} \times 100}{\frac{100}{400} \times 100} = \frac{\frac{100}{400} \times 100}{25} = 1.25$$

Price Elasticity of Supply of Y

$$(E_s)_Y = \frac{\text{Percentage Change in Quantity Supplied}}{\text{Percentage Change in Price}}$$

$$1.25 = \frac{\text{Percentage Change in Quantity Supplied}}{8}$$

[∵  $E_s$  of X =  $E_s$  of Y]

$$\begin{aligned} \therefore \text{Percentage fall in quantity supplied of Y} \\ = 1.25 \times 8 = 10\% \end{aligned}$$

14. When the price of a commodity rises from ₹ 10 to ₹ 11 per unit, its quantity supplied rises by 100 units. Its price elasticity of supply is 2. Calculate its quantity supplied at the increased price.

Ans. Given,  $P = ₹ 10$

$$P_1 = ₹ 11$$

$$\Delta P = 11 - 10 = ₹ 1$$

$$Q = ?$$

$$\Delta Q = 100 \text{ units, } E_s = 2$$

Price Elasticity of Supply

$$(E_s) = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q} \text{ or } 2 = \frac{100}{1} \times \frac{10}{Q}$$

$$Q = \frac{100 \times 10}{2} = 500$$

∴ Quantity supplied at the increased price

$$(Q_1) = Q + \Delta Q = 500 + 100 = 600 \text{ units}$$

15. Consider a market with two firms. The following table shows the supply schedules of the two firms. The  $SS_1$  column gives the supply schedule of firm 1 and the  $SS_2$  column gives the supply schedule of firm 2. Compute the market supply schedule.

(NCERT)

Price (₹)	$SS_1$ (Units)	$SS_2$ (Units)
0	0	0
1	0	0
2	0	0
3	1	1
4	2	2
5	3	3
6	4	4

**Ans. Market Supply Schedule**

Price (₹)	SS <sub>1</sub> (Units)	SS <sub>2</sub> (Units)	Market Supply = SS <sub>1</sub> + SS <sub>2</sub> (Units)
0	0	0	0
1	0	0	0
2	0	0	0
3	1	1	2
4	2	2	4
5	3	3	6
6	4	4	8

16. Consider a market with two firms. In the following table, columns labelled as SS<sub>1</sub> and SS<sub>2</sub> give the supply schedules of firm 1 and firm 2, respectively. Compute the market supply schedule. (NCERT)

Price (₹)	SS <sub>1</sub> (kg)	SS <sub>2</sub> (kg)
0	0	0
1	0	0
2	0	0
3	1	0
4	2	0.5
5	3	1
6	4	1.5
7	5	2
8	6	2.5

**Ans. Market Supply Schedule**

Price (₹)	SS <sub>1</sub> (kg)	SS <sub>2</sub> (kg)	Market Supply = SS <sub>1</sub> + SS <sub>2</sub> (kg)
0	0	0	0
1	0	0	0
2	0	0	0
3	1	0	1
4	2	0.5	2.5
5	3	1	4
6	4	1.5	5.5
7	5	2	7
8	6	2.5	8.5

**• Long Answer (LA) Type Questions**

1. Explain how changes in prices of other products influence the supply of a given product.

**Ans.** As resources have alternative uses, the quantity supplied of a commodity depends not only on its price, but also on the prices of other commodities.

Increase in the prices of substitute goods makes them more profitable in comparison to the given commodity.

As a result, the firm shifts its limited resources from production of the given commodity to production of other goods. e.g. increase in the price of wheat will induce the farmer to use land for cultivation of wheat in place of rice.

Decrease in price of substitute good will shift the supply curve to the right and vice-versa.

In case of complementary goods, if price of one good increases, then supply of its complementary good also increases, conveying a direct relationship. So, rise in the price of car, will cause the supply of petrol to also rise and the supply curve shifts to the rightward and vice-versa.

2. Explain the meaning of increase in supply and increase in quantity supplied with the help of a schedule.

**Ans. Increase in Supply** When supply of a commodity increases due to favourable changes in factors other than price, it is called increase in supply.

In this situation, supply curve shifts to the right side. It can be explained with the help of an imaginary schedule

Price (₹)	Quantity Supplied (Units)
10	100
10	200
10	300
10	400

As, it is clear from the above schedule that supply is increasing at constant prices.

**Increase in Quantity Supplied** When supply of a commodity increases due to increase in price of a commodity and other factors remaining constant, it is called increase in quantity supplied. In this situation, supply curve moves upward. It can be explained with the help of an imaginary schedule

Price (₹)	Quantity Supplied (Units)
10	100
20	200
30	300
40	400

Here, we can see that quantity supplied is rising with rise in prices.

3. (i) Distinguish between change in supply and change in quantity supplied. Which of these causes a shift of supply curve?  
 (ii) Distinguish between movement along the supply curve and shift in the supply curve with the help of a suitable diagram.

Ans. (i) Difference between change in supply and change in quantity supplied

Basis	Change in Supply	Change in Quantity Supplied
Reason	It is caused by change in determinants other than own price of the commodity.	It is caused only by change in own price of the commodity, other determinants remaining constant.
Determinants	These include price of related goods, number of firms in the industry, goal of the firm, price of factors of production, state of technology, business confidence, government's policy.	Change in own price of the commodity is the only cause.
Representation	Diagrammatically, it is shown as a rightward and leftward shift in supply curve.	Diagrammatically, it is shown as a downward and upward movement on the same supply curve.

- (ii) Difference between movement along the supply curve and shift in the supply curve

Basis	Movement Along the Supply Curve	Shift in the Supply Curve
Movement	It represents expansion and contraction of supply due to change in the price of a concerned commodity.	It occurs due to factors other than price of a concerned commodity.
Effect	When price increases, there is an upward movement (a → b) along the supply curve showing increase in quantity supplied and when price decreases, there is a downward movement (b → a) along the supply curve showing decrease in quantity supplied as shown in figure A.	When other factors change in a positive direction, the supply curve shifts to the right, (a → b) showing increase in supply and when changes occur in the negative direction, the supply curve shifts to the left (a → c) showing a decrease in supply, as shown in figure B.

Graph

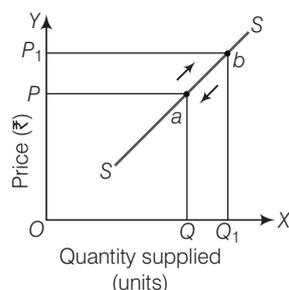


Figure A

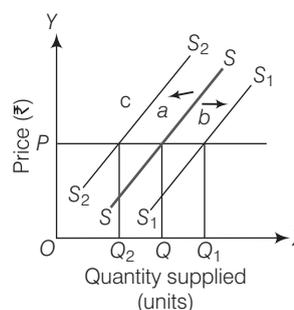
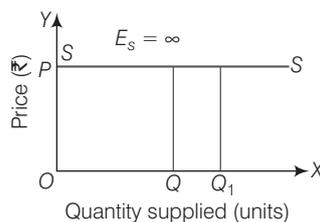


Figure B

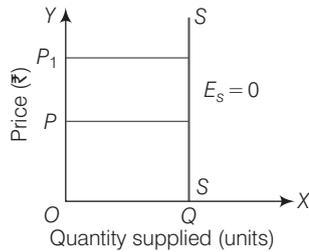
4. Using diagrams, explain various degrees of price elasticity of supply.

Ans. The various degrees of price elasticity of supply are given below

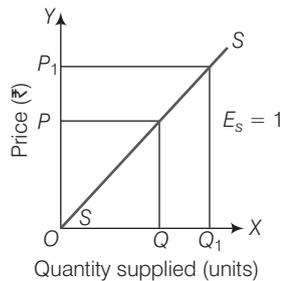
- (i) **Perfectly Elastic Supply** In this case, a slight change in price causes infinite change in quantity supplied. The supply curve SS is parallel to X-axis and  $E_s = \infty$ , as shown in the figure



- (ii) **Perfectly Inelastic Supply** It is a situation where the quantity supplied remains unchanged, whatever be the changes in price. Hence, the supply curve is parallel to Y-axis and  $E_s = 0$ , as shown in the figure

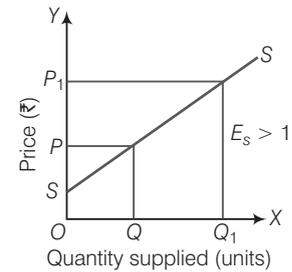


- (iii) **Unitary Elastic Supply** In this case, percentage change in quantity supplied is exactly equal to percentage change in price. Hence, the supply curve is a straight line originating from the origin and sloping upward and  $E_s = 1$ , as shown in the figure

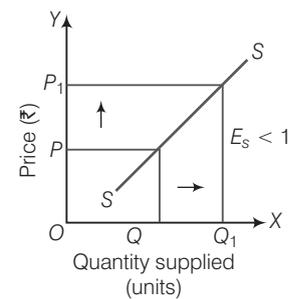


- (iv) **More than Unitary Elastic Supply** In this situation, percentage change in quantity supplied is greater than the percentage change in price.

An upward sloping straight line supply curve originates from Y-axis and  $E_s > 1$ , as shown in the figure



- (v) **Less than Unitary Elastic Supply** In this situation, percentage change in quantity supplied is less than percentage change in price. An upward sloping straight line supply curve originates from X-axis and  $E_s < 1$ , as shown in the figure



# Chapter Test

## Multiple Choice Questions

1. Supply schedule shows ..... relationship between price and quantity supplied of a commodity.  
(a) positive (b) inverse (c) negative (d) opposite
2. Which the following shows relationship between the price of a commodity and quantity supplied graphically?  
(a) Supply statement (b) Supply schedule (c) Supply curve (d) All of these
3. A firm will supply more quantity of a commodity at same price or even at a reduced price, if the firm wants to  
(a) maximise profit (b) maximise social welfare (c) maximise sales (d) maximise wealth
4. A supply curve will shift leftward due to  
(a) increase in supply (b) increase in quantity supplied (c) decrease in supply (d) decrease in quantity supplied

## Short Answer (SA) Type Questions

1. 'Developing countries have constraints'. Do you agree?
2. A new technique of production reduces the marginal cost of producing stainless steel. How will this affect the supply curve of stainless steel utensils?
3. 'A loss-making firm has inelastic supply'. Do you agree? If yes, why?
4. Total Revenue at a price of ₹ 4 per unit of a commodity is ₹ 480. Total Revenue increases by ₹ 240 when its price rises by 25%. Calculate its price elasticity of supply.
5. Total Revenue is ₹ 400 when the price of the commodity is ₹ 2 per unit. When price rises to ₹ 3 per unit, the quantity supplied is 300 units. Calculate the price elasticity of supply.

## Long Answer (LA) Type Questions

1. (i) There are three identical firms in a market. The following table shows the supply schedule of firm. Compute the market supply schedule.

Price (₹)	SS <sub>1</sub> (Units)
0	0
1	0
2	2
3	4
4	6
5	8
6	10
7	12
8	14

- (ii) A firm earns a revenue of ₹ 50 when the market price of a good is ₹ 10. The market price increases to ₹ 15 and the firm now earns a revenue of ₹ 150. What is the price elasticity of the firm's supply curve?
2. (i) The market price of a good changes from ₹ 5 to ₹ 20. As a result, the quantity supplied by a firm increases by 15 units. The price elasticity of the firm's supply curve is 0.5. Find the initial and final output levels of the firm.  
(ii) At the market price of ₹ 10, a firm supplies 4 units of output. The market price increases to ₹ 30. The price elasticity of the firm's supply is 1.25. What quantity will the firm supply at the new price?

## Answers

### Multiple Choice Questions

1. (a) 2. (c) 3. (c) 4. (c)