# Economics

## (Micro-economics)

### Chapter 4: THEORY OF THE FIRM UNDER PERFECT COMPETITION

# Important Questions

## Multiple Choice Questions-

Question 1. The concept of supply curve is relevant only for?

(a) Monopoly

(b) Monopolistic competition

(c) Perfect competition

(d) Oligopoly

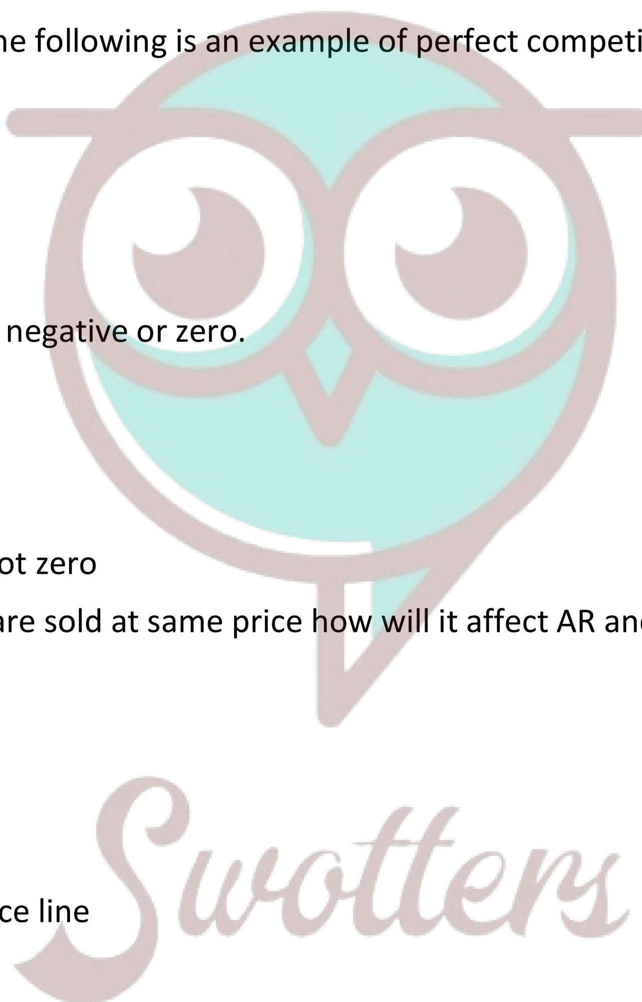
Question 2. Which of the following is an example of perfect competition?

(a) Agriculture

(b) Banking sector

(c) Car manufacturing

(d) Railways



Question 3. Can MR be negative or zero.

(a) Yes

(b) Can't say

(c) No

(d) Only negative but not zero

Question 4. If all units are sold at same price how will it affect AR and MR?

(a) B. AR > MR

(b) A. AR = MR

(c) D. AR + MR = 0

(d) C. AR < MR

Question 5. What is price line

(a) The demand curve

(b) The AR curve

(c) The MR curve

(d) The TR curve

Question 6. Can TR be a horizontal Straight line?

(a) May be

(b) Can't say

(c) Yes

(d) No

Question 7. The revenue of a firm per unit sold is its

(a) MR

(b) AR

(c) TR

(d) TC

Question 8. The product of AR and price at every unit sold is the firm's

(a) TR

(b) TVC

(c) MR

(d) AR

Question 9. In perfect competition, in the long run, ______________?

(a) There are large profits for the firm

(b) There is no profit and no loss for the firm

(c) There are negligible profits for the firm

(d) There are large losses for the firm

Question 10. In perfect competition, when the marginal revenue and marginal cost are equal, profit is?

(a) Maximum

(b) Zero

(c) Negative

(d) Average

Question 11. In perfect competition, a firm earns profit when __________ exceeds the _____________?

(a) Total revenue, total fixed cost

(b) Marginal cost, marginal revenue

(c) Average revenue, average cost

(d) Total cost, total revenue

Question 12. In the perfectly competitive market, in the long run, competitive prices equal the minimum possible ________ cost of good?

(a) Average

(b) Total

(c) Variable

(d) Marginal

Question 13. In perfect competition, in the long run, if a new firm enters the industry the

supply curve shifts to the right resulting in_________?

(a) Reduction in supply

(b) No change in price

(c) Fall in price

(d) Rise in price

Question 14. Which of the following type of competition is just a theoretical economic concept, not a realistic case where actual competition and trade take place?

(a) Monopolistic competition

(b) Monopoly

(c) Oligopoly

(d) Perfect competition

Question 15. In perfect competition, which of the following curves generally lies below the demand curve and slopes downward?

(a) Average revenue

(b) Average cost

(c) Marginal revenue

(d) Marginal cost

## Very Short :

1. Define perfect competition.
2. Define Monopoly.
3. What is oligopoly?
4. What is product differentiation?
5. What is the shape of marginal revenue curve under monopoly?
6. What is break – even price?
7. What is the normal profit?
8. What is a patent right?
9. What is a price taker company?
10. What is a price maker company?

## Short Questions :

**1.** A market for a good is in equilibrium. Demand for good 'increases'. Explain the chain effects of this change.

**2.** Why is the demand curve in monopolistically competitive firms likely to be very elastic?

**3.** Explain the implication of free entry and free exit of a firm in a perfect competitive market?

**4.** With the help of the diagram, show the effect on equilibrium price and quantity when supply is perfectly inelastic and demand increases & decreases.

**5.** Which features of monopolistic competition are monopolistic in nature?

**6.** When will the equilibrium price not change even if demand and supply increases?

## Long Question :

1. Distinguish between change in supply and change in quantity supplied. State two factors responsible for change in supply.

**2.** Explain the conditions of a producer's equilibrium in terms of Marginal Cost and Marginal Revenue. Use a diagram.

**3.** When the price of a commodity rises from Rs. 10 to Rs. 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.

**4.** A firm supplies 500 units of a good at a price of Rs. 5 per unit. The price elasticity of supply of good is 2. At what price will the firm supply 700 units?

## Assertion Reason Question:

1. **Direction:** In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

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

   B. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

   C. Assertion (A) is true, but Reason (R) is false.

   D. Assertion (A) is false, but Reason (R) is true.

**Assertion (A):** There is no restriction on the entry and exit of the firms in the perfect competitive market.

**Reason (R):** The perfect competition market is characterised by the sellers being a price taker and not a price maker.

2. **Direction:** In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Mark the correct choice as:

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

   B. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

   C. Assertion (A) is true, but Reason (R) is false.

D. Assertion (A) is false, but Reason (R) is true.

**Assertion (A):** The vegetable market is a perfect example of perfect competition market.

**Reason (R):** The marketers have no control over the prices of the product.

## MCQ Answers :

1. Answer: (c) Perfect competition
2. Answer: (a) Agriculture
3. Answer: (a) Yes
4. Answer: (b) A. AR = MR
5. Answer: (c) The MR curve
6. Answer: (d) No
7. Answer: (b) AR
8. Answer: (a) TR
9. Answer: (b) There is no profit and no loss for the firm
10. Answer: (a) Maximum
11. Answer: (c) Average revenue, average cost
12. Answer: (a) Average
13. Answer: (c) Fall in price
14. Answer: (d) Perfect competition
15. Answer: (c) Marginal revenue

## Very Short Answers :

1. Ans: A market with perfect competition has a large number of customers and sellers selling the same product at the same price.

2. Ans: A monopoly is a market arrangement in which a single supplier has complete price control.

3. Ans: Oligopoly is defined as a market structure characterized by a small number of significant sellers who sell either homogeneous or differentiated commodities.

4. Ans: It is the practice of differentiating products and services on various basis such as style, looks, label, color, size, packaging, brand name, etc., with an objective to make it more attractive and better than the product or service of the competitors.

5. Ans: In a monopoly market, the marginal revenue curve slopes downhill from left to right and is lower than the average revenue curve.

6. Ans: The break-even price in a completely competitive market is the price at which a firm earns normal profit (Price =AC ). In the long run, the break-even price is the point at which P=AR=MC.

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7. Ans: Normal profit is referred to as the minimum or least amount of profit which is required to keep an organisation engaged in the production process for the long run.

8. Ans: Patent right is an exclusive license or right conferred to an organisation to manufacture particular goods or services under a specific technology.

9. Ans: Price taker companies are those companies that have no option but to accept the price determined by the industry.

10. Ans: A price maker company is that company which can influence the price of a product on its own.

## Short Answers :

**1.** Answer: The chain effects of this change are:

1. When the price is constant, surplus demand emerges
2. This also increases the competition among the buyers insisting them to raise the price
3. A rise in the price of a product cause fall or decrease in the demand and expansion or rise in supply
4. The cost of the product continues to increase until the market is balanced at a greater price

**2.** Ans: The demand curve in monopolistically competitive firms is likely to be very elastic. The reason for this is because the products produced by monopolistically competitive enterprises are nearly identical, and the firms have less control over the price. If the items are close replacements of one another, and the product is not differentiated enough, the elasticity of demand becomes strong, making the firm's demand curve very elastic.

**3.** Ans: If firms can enter and exit freely, no firm can achieve an extraordinary profit in the long run. That is, the corporation earns no extraordinary profit in case of freedom of entry and exit, and hence, each company gets a standard profit. In a perfect competition there are large numbers of buyers and sellers.

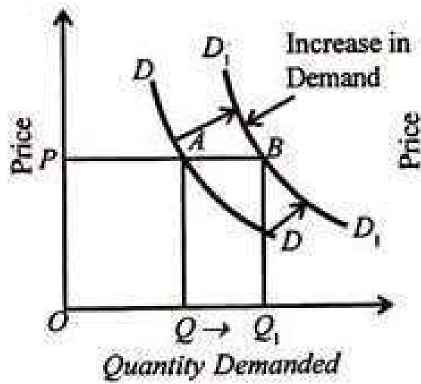
'Free Entry' means that there are no obstacles in the entry of new firms in the market. When the existing businesses are earning abnormal profits, the new firms are influenced due to the profit and they enter the industry. This increases market supply which leads to fall in market price and furthermore profits.

'Freedom to exit' means that there are no obstacles which stop the existing firms from stepping down from the market. The firms attempt to quit when they are dealing with losses. As the firms start to exit, market supply drops, which begins to rise in market price and consequently decreases in losses. The firms do not stop to leave till the losses are eliminated and each remaining firm will be earning just the normal profits.

**4.** Ans: **Rise in Demand**

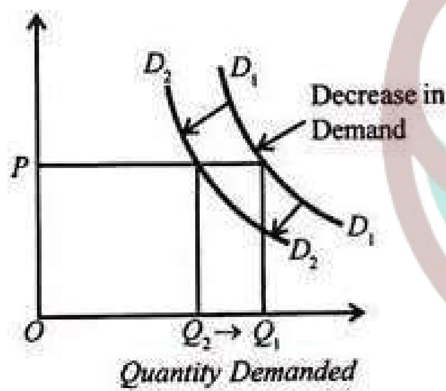
When supply is completely inelastic and demand rises, the demand curve shifts to the right. At point, the new demand curve  intersects the supply curve at point  As a result,

prices rise whereas quantity demand remains unchanged.




**Fall in Demand**

In the diagram shown below, demand curve shifts towards left when demand falls and price decreases from but quantity remains same.



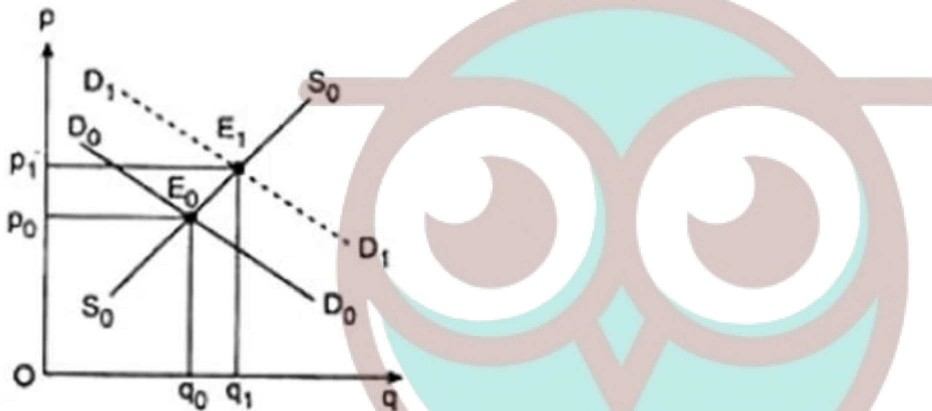

**5.** Ans: Monopolistic competition refers to a market situation in which there are a large number of firms selling products that are closely related but distinct.

- Large number of sellers: There are a large number of businesses selling products that are related but not identical. Each firm operates independently and has a limited market share. As a result, a single firm has only limited control over the market price. The presence of a large number of businesses creates market competition.
- Product Differentiation: Despite the large number of sellers, each firm can exercise some degree of monopoly through product differentiation. Product differentiation is the process of distinguishing products based on their brand, size, color, shape, and so on. A firm's product is a close but not perfect substitute for another firm's product.
- Selling costs: Products are differentiated in monopolistic competition, and these differences are communicated to buyers through selling costs. The expenses incurred on marketing, sales promotion, and product advertisement are referred to as selling costs.
- Freedom of entry and exit: Firms are free to enter or exit the industry at any time under monopolistic competition. It ensures that a firm does not experience abnormal profits or losses in the long run.

- Lack of perfect knowledge: Buyers and sellers do not have a complete understanding of market conditions. Selling costs create an artificial superiority in the minds of consumers, making it difficult for them to evaluate different products on the market. As a result, even if other less expensive products are of equal quality, consumers prefer a specific product (even if it is highly priced).

**6.** Ans: When the proportionate rise in demand is exactly equal to the proportionate increase in supply, the equilibrium price remains constant. It is depicted in the diagram below.

Diagram




In this diagram one can see that when both demand and supply increase at an equal level. The price remains unchanged, even though the quantity changes.

## Long Answers:

$$\Delta P = \frac{2 \times 500}{200 \times 5} = 1$$

Therefore, the new price is calculated as

$$P_1 = P + \Delta P$$

$$= 5 + 1$$

$$= 6 \text{ units}$$

Therefore, the firm will supply 700 units at Rs. 6 per unit.

## Long Answers :

**1.** Ans: The difference between change in supply and change in quantity supplied is as

follows:

| Basis | Change in supply | Change in quantity supplied |
|---|---|---|
| Meaning | Change in supply occurs when the supply of a good changes due to changes in all other factors except the price of the item (i.e. the price of the good remains unchanged). | Change in amount supplied occurs when supply changes only as a result of a change in the price of commodities, assuming all other factors remain constant. |
| Shifts and Movements | It causes a shift in the firm's supply curve, which might be either rightwards or leftwards. | It causes a shift in the firm's supply curve, which can be either upward or downward. |
| Form | Increase and Decrease in supply. | Expansion and contraction of supply. |

**Difference in Diagrams - Change in Supply:**

The change in supply is depicted in the graphic below. We can see an increase in supply due to reasons other than price, shown through rightward movement.

(Image will be Uploaded Soon)

**Difference in Diagrams - Change in Quantity Supplied:**

A change in quantity delivered would be depicted as an upward movement in the supply curve due to an increase in price.

Take note that this is the supply curve that has been separated on the graph. A distinct quantity is delivered at each point on the curve. So, if we shift from p=1 to p=2, the quantity delivered changes by 20 units because we went from q=10 at p=1 to q=30 at p=2.

(Image will be Uploaded Soon)

As a result, changes in supply allow manufacturers to sell more (or less) at a given price. Changes in amount supplied, on the other hand, are induced by price changes, causing manufacturers to sell more (or less) at a different price.

**Factors are responsible for changes in supply:**

- Production costs: Input prices and the consequent production costs are inversely related to supply. Changes in input prices and production costs, in other words, create an opposing shift in supply. For example, as wages or labor expenses rise, the supply of goods falls.
- Technology: Improvements in manufacturing technology change the supply curve. Improvements in technology, in particular, boost supply, resulting in a rightward shift in the supply curve, that is better the technology, higher the supply.

- Other goods prices: Other items' price adjustments are a little more challenging. To begin, in order to influence supply, producers must believe the items are related. What customers believe is unimportant. Ranchers, for example, believe that meat and leather are connected since they both come from a steer.

**2.** Ans: The term "producer's equilibrium" refers to a condition in which a producer produces the amount of output that maximizes earnings. It is a profit-maximizing condition. Under the MR-MC technique, the producer will only reach equilibrium at the level of production if the following conditions are met.

- MR = MC
- After MR = MC, MC must rise.
- At the point of equilibrium, the MC curve must cut the MR curve from below.

The addition to TR from the sale of one additional unit of output is denoted by MR, and the addition to TC is denoted by MC. Firms compare their MR with their MC in order to maximize earnings.

In the diagram, output is indicated on the X axis, while revenue and cost are shown on the Y-axis. The MC curve is U-shaped, and P~MR=AR is a horizontal line parallel to the X-axis.

(Image will be Uploaded Soon)

When output level is more than OQ, MR < MC, which implies that the firm is making a loss on its last unit of output. Hence, so as to maximize profit, a rational producer will keep decreasing its output as long as MC > MR. Thus, the firm moves towards producing OQ units of output.

**3.** Ans: Given:

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P=10

$P_1$=11

$$\Delta Q = 100\text{units}$$

$$E_s = 2$$

$$\Delta P = P_1 - P$$

$$= 11 - 10$$

$$= 1$$

The price elasticity of supply is calculated as

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

Substitute the known values in the above equation,

$$2 = \frac{100}{1} \times \frac{10}{Q}$$

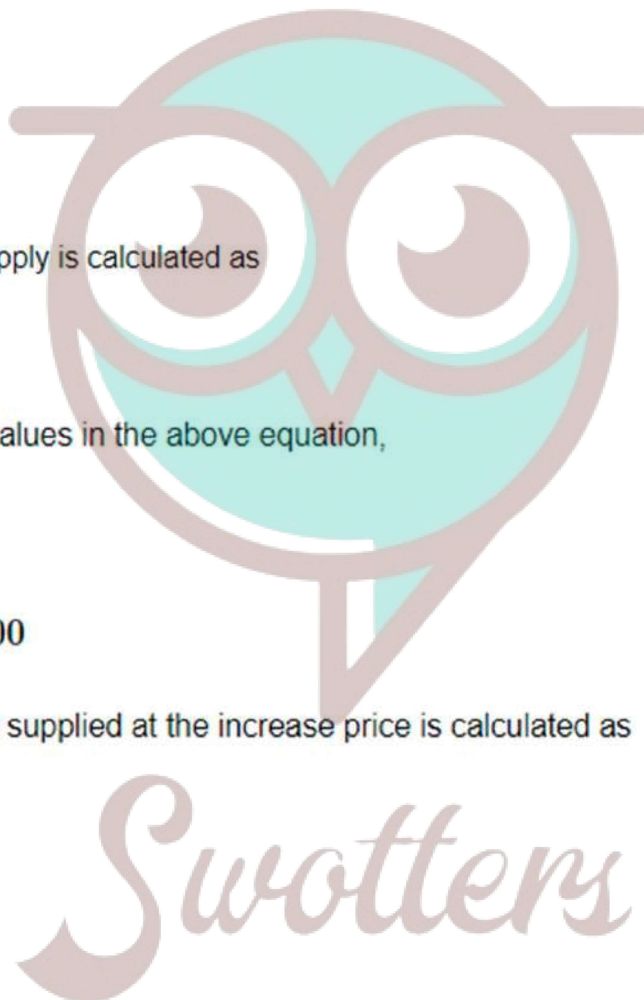
$$Q = \frac{100 \times 10}{2} = 500$$

Therefore, the quantity supplied at the increase price is calculated as

$$Q_1 = Q + \Delta Q$$

$$= 500 + 100$$

$$= 600 \text{ units}$$




**4.** Ans: Given:

$P = 5$

$Q_1 = 700$

$Q = 500$

$E_s = 2$

$\Delta Q = Q_1 - Q$

$= 700 - 500 = 200$

The price elasticity of supply is calculated as

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

Substitute the known values in the above equation,

$$2 = \frac{200}{\Delta P} \times \frac{5}{500}$$

## Assertion Reason Answer:

1. B. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).
2. A. Both Assertion (A) and Reason (R) are true, and Reason (R) is the correct explanation of the Assertion (A).

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