THE INSTITUTE OF EDUCATION

# Economics

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6TH YEAR

HIGHER LEVEL

2020-21

## *PERFECT COMPETITION*

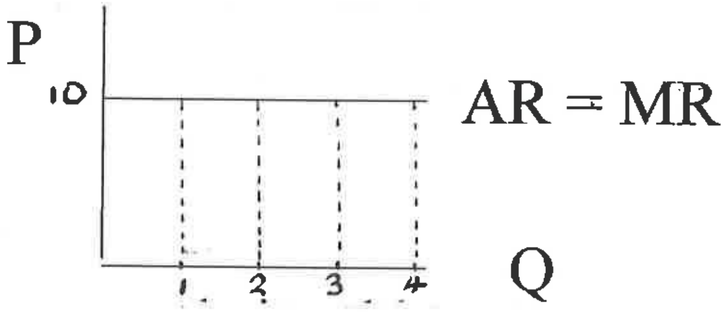
# Perfect Competition – Main Topics

# Perfect Competition

## Assumptions

1. There are a huge number of small sellers and buyers. Each firm is a **price taker** i.e. it must accept the going market price. The individual firm can sell all that it wants at the going market price.

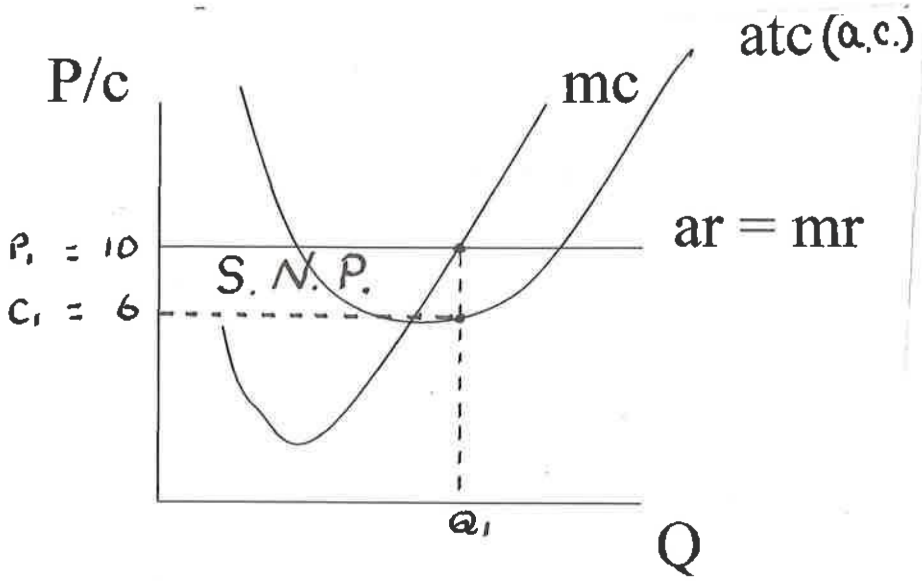
| Output | Price | Total Revenue. | Average Revenue. | Marginal Revenue. |
|---|---|---|---|---|
| 1 | 10 | 10 | 10 | 10 |
| 2 | 10 | 20 | 10 | 10 |
| 3 | 10 | 30 | 10 | 10 |
| 4 | 10 | 40 | 10 | 10 |




The firm faces a horizontal demand curve.

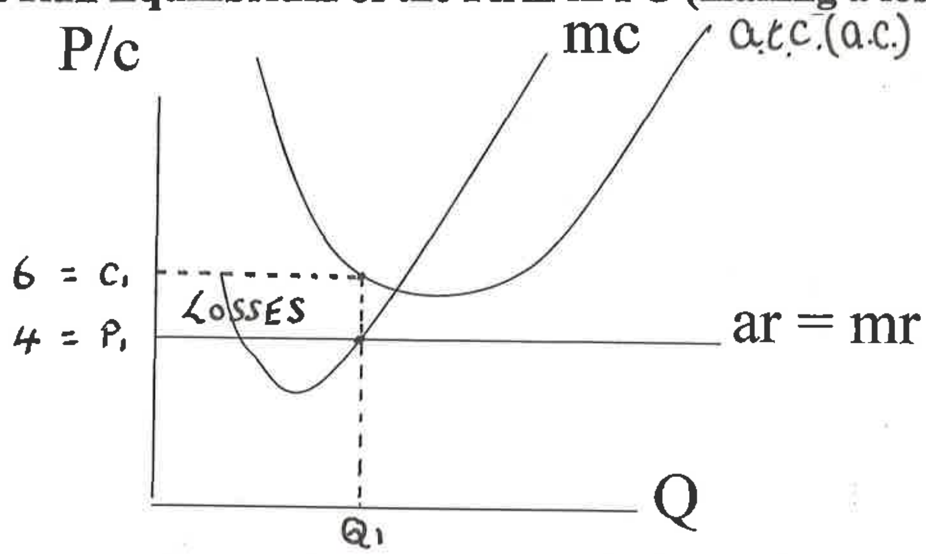
2. All firms produce **homogeneous** goods i.e. identical goods and there is no need for competitive advertising.
3. There is **perfect knowledge** as regards the profits being earned in an industry……...
4. There is **freedom of entry** to and exit from an industry. There are no barriers to entry……..
5. Individual firms are **profit maximisers** producing the level of output where **marginal cost = marginal revenue,** beyond that point **marginal cost** must be higher than **marginal revenue,** and in the short run the firm will continue to produce goods if its **revenue exceeds its variable costs** and makes a contribution to its fixed costs. In the long run the **revenue must at least equal total cost** which includes normal profit.

**Short Run Equilibrium of the Firm in PC (earning SNP)**



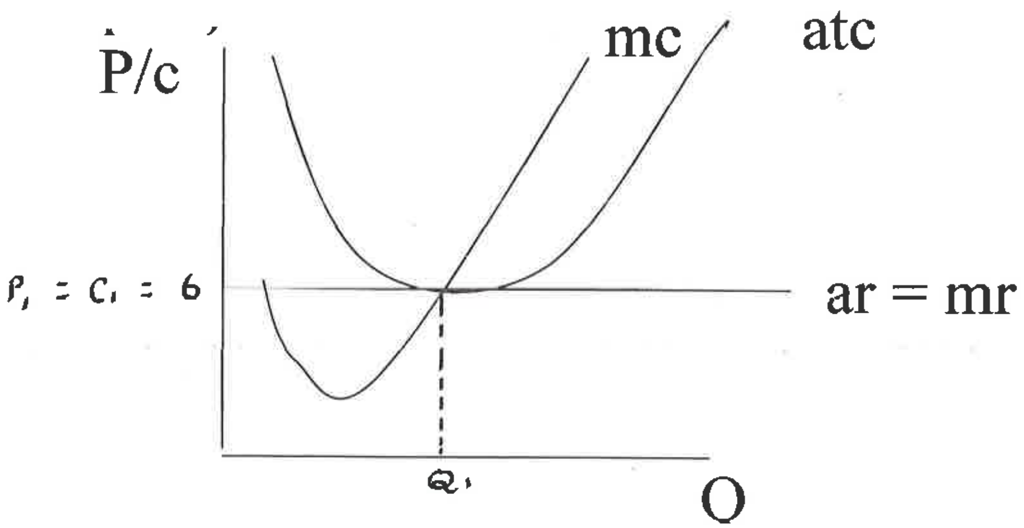

The firm is a **price taker** and sells all that it wishes at the going market price of €10. The **average revenue** is €10 and this is the same as the **marginal revenue** because the firm does not have to cut its price to sell extra units.
In order to **maximise profits** the firm produces at the point where **marginal cost = marginal revenue,** producing the level of output Q1. Each of these units at Q1 will be sold for a price of €10, which is P1 or average revenue, and each unit costs €6 to produce which is the average cost.
The firm is making **supernormal profits** of €4 per unit because average revenue of €10 is greater than the average cost of €6 and this €6 includes normal profit.
Due to the assumptions of **perfect knowledge** as to profits and **freedom of entry** these supernormal profits attract new firms into the industry and total supply increases driving down market price. Price of course equals average revenue. The individual firm has to accept the new price because it has no control over the market price being a price taker.
**Show an overall market supply and demand curves as part of your answer.**

**Short Run Equilibrium of the Firm in PC (making a loss)**




The firm **maximises profit** by producing the level of output Q1 where MC = MR. Too many firms have come into the industry driving down the market price too far. Each of these units will be sold at a price of P1 = €4 and costs C1 = €6 to produce. The firm is making a **loss** because AR of €4 is less than AC of €6. **Firms leave the industry** due to losses being made, supply falls and the price AR begins to rise again. Again show an overall market demand and supply curves at this point.

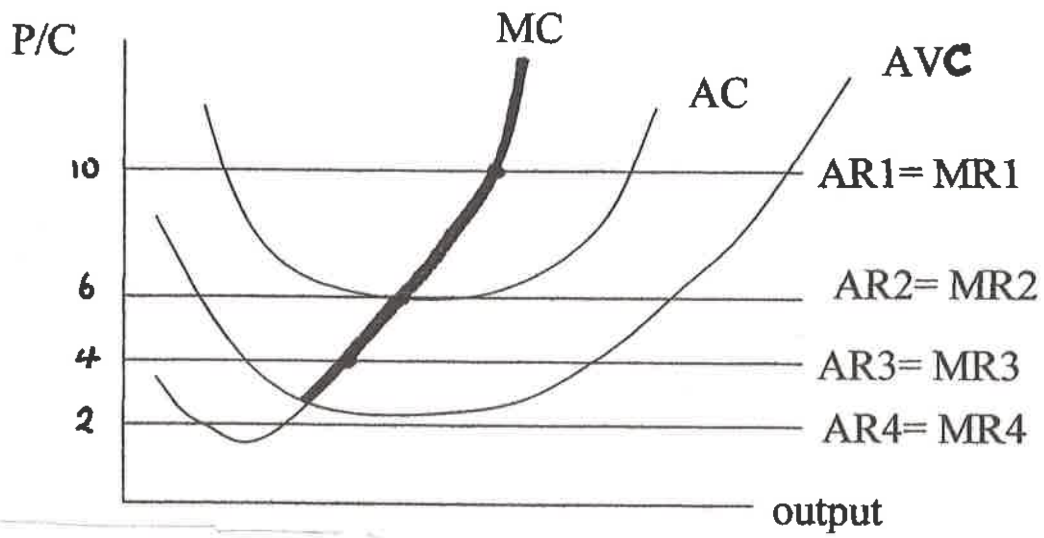
**The Long Run Equilibrium of the Firm in PC (earning normal profit)**



In order to **maximise profit** the firm produces the level of output where MC = MR, producing Q1.
Each of these units will be sold at price of P1 €6 and cost C1 €6 to produce. The firm is making **normal profit** because AR = AC.
The firm is also an **efficient producer** because it is producing at the lowest point on the average cost curve. There is no money wasted because if a firm has no control over the price the only way it can survive is by keeping costs such as wages to an absolute minimum. No money is wasted on competitive advertising due to the goods being homogeneous.

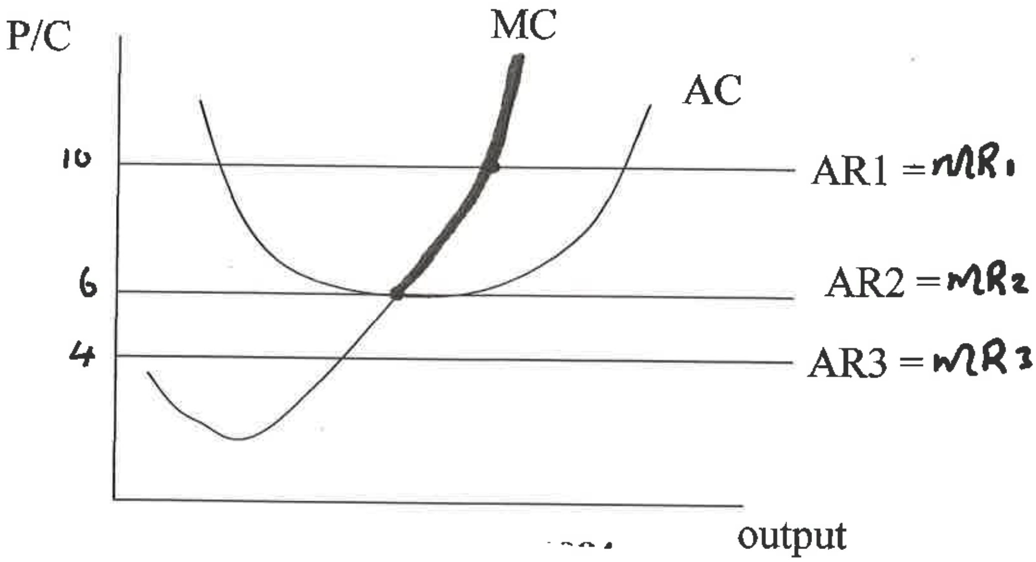
## Short Run Supply Curve of the Firm in PC

It is **that part of the marginal cost curve that lies above the average variable cost curve.** This is because the firm always produces at the point where marginal cost = marginal revenue and it will continue to produce goods as long as its revenue exceeds its variable costs and makes a contribution to its fixed costs.




## The Long Run Supply Curve of the Firm in PC

It is **that part of the marginal cost curve that lies equal to or above average total cost.** This is because the firm always produces where marginal cost = marginal revenue and it will only produce goods in the long run if its revenue at least equals total cost including normal profit.




## Leaving Certificate 1984

**Derive the short run and the long run supply curve of the firm in perfect competition.**

**Solution** – Refer to page 5.

## Leaving Certificate 1997

**a) Explain, with the aid of a diagram, the long run position of a firm in Perfect Competition.**
**b) Outline the assumptions governing Perfect Competition.**
**c) (i) Why does Perfect Competition benefit the consumer?**
**(ii) Why does Perfect Competition benefit the economy?**
**(iii) A firm in Perfect Competition is said to be a price taker. Explain.**

**Solution –**

a) Refer to page 4.
b) Refer to page 2.
c) (i) Perfect Competition benefits the consumer because goods are produced at the lowest possible cost and therefore the consumer due to competition will be charged the lowest possible price.
(ii) Perfect Competition benefits the economy because it makes the best use of scarce resources with goods being produced at the lowest possible cost. The firm has no control over the price so for it to survive it must keep its costs to a minimum.

(iii)The firm is a **price taker** because any one firm produces a very small fraction of total supply and is thus unable to influence price. It can sell all that it wants at the going market price.

## Leaving Certificate 2002

**a) Outline the assumptions underlying the theory of Perfect Competition.**
**b) Explain with the aid of a diagram how a firm in Perfect Competition achieves equilibrium in the short run. Derive and explain the short run supply curve of this firm.**
**c) Discuss, with the aid of diagrams, the impact that the entry of new firms would have on the short run equilibrium of existing firms in Perfect Competition earning supernormal profits.**
**d) Firms in Perfect Competition tend not to engage in advertising. Give 2 reasons why.**
**Solution –**

a) For the answer refer to page 2.
b) Refer to pages 3, 4 and 5 for the answer.
c) For the solution refer to pages 3 and 4.
d) Firms in PC have no need to engage in competitive advertising because the product produced by each firm is homogeneous and because each firm is a price taker it can sell all that it wishes at the going market price.

## Leaving Certificate 2007

**a) (i) A firm operating under conditions of perfect competition is a price taker. Explain this concept of being a price taker.**
**(ii) Explain with the aid of a labelled diagram, the equilibrium position of a firm in short run perfect competition.**

**b) With the aid of labelled diagrams, explain the impact which the entry of new firms would have on the market and on the equilibrium position of this firm.**

**(i) Explain the affect of product differentiation on the AR and MR curves of a firm that previously operated under conditions of perfect competition.**

a) Covered in pages 2 and 3.
b) Covered in page 4.
c) (i) Product differentiation means that consumers consider goods to be very close substitutes but not identical.
This is achieved by establishing different and distinctive brand names for products such as Nike. It is also achieved through competitive advertising thereby establishing in the minds of the consumer that products are different such as Weetabix versus Kellogs. It is also achieved through product innovation so that the product becomes more advanced than the competition e.g. Lyons pyramid tea bags.

(ii) A firm's average revenue will be downward sloping from left to right. As the products are close substitutes the firm will sell more at lower prices because as it lowers its price it can expect to attract some but not all customers from other firms and vice versa.
If average revenue is falling then marginal revenue is also falling and lies below average revenue. To increase sales the firm must reduce the price. Therefore the average revenue curve slopes down from left to right. The revenue from increased sales will be reduced by the falling revenue on each unit previously sold at a higher price, but now at a reduced price.

## Leaving Certificate 2012

**a) (i) Explain the reason for the shape of the demand curve of an individual firm in perfect competition.**
**(ii) Outline 2 advantages of perfect competition. (20 marks)**

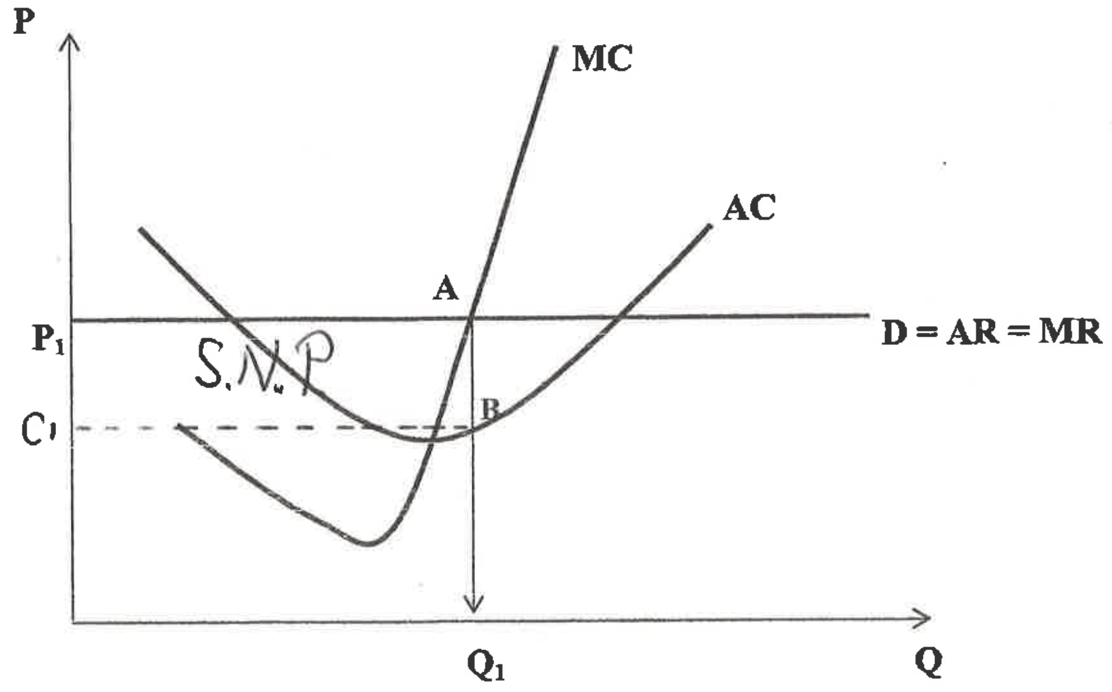
**b) (i) Explain, with the aid of a labelled diagram, the equilibrium position of a firm in short run perfect competition.**
**(ii) With the aid of labelled diagrams, explain the impact which the entry of new firms would have on the market and on the equilibrium position of the firm. (35 marks)**

**c) Contrast the characteristics of perfect competition with monopoly under the following headings:**
**1 Barriers to entry; 2 Profits in the long run; 3 Economies of scale; 4 Price Discrimination. (20 marks)**

**Solution –**
a) (i) The firm in perfect competition is a **price taker** i.e. it accepts the going market price. The single firm by its own actions cannot influence the market price because the single firm represents such a small proportion of the total supply.
If a firm increases price quantity demanded falls to zero as consumers switch to the cheaper identical goods available. The single firm faces a perfectly elastic demand curve.

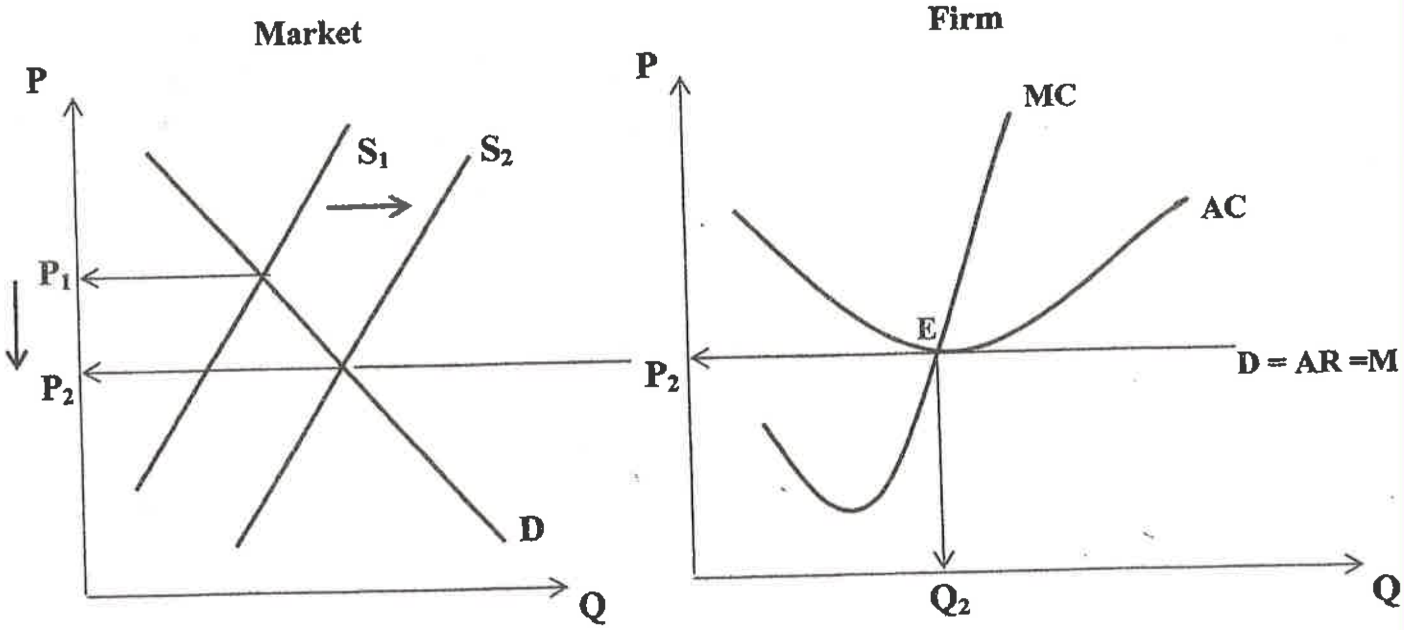
(ii) **1 Low prices** – The firm sells its products at the lowest possible prices.
**2 Efficient** – The firm produces at the lowest point on the average cost curve so there is no waste of scarce resources.
**3 Normal profits earned** – Because of freedom of entry no firm will continue to earn SNPs in the long run, as new firms will enter to ensure no exploitation of the consumer.
**4 No advertising** – As goods are homogeneous there is no need for money to be spent on wasteful advertising ensuring costs are kept to a minimum.

b) (i) **Short-Run Equilibrium of the firm in Perfect Comp.**




Equilibrium occurs at point A where marginal cost equals marginal revenue and marginal cost cuts marginal revenue from below. This means the firm produces the level of output Q1 in order to maximise profit. The firm will sell this output at a price of P1 and the cost to produce it is at point B giving a cost per unit of C1. The firm is earning SNP because average revenue (P1) is greater than average cost (C1) which includes normal profit.

(ii)




New firms will enter the market causing supply to increase and the supply curve will shift to the right to S2. This results in a new market equilibrium giving a lower price P2. Because the firm in perfect competition is a price taker it must accept this lower price so its average revenue/marginal revenue line shifts down to a new equilibrium point E where marginal revenue equals marginal cost. SNPs are eliminated because it is now earning normal profit where average revenue equals average cost. The firm will also be producing a lower quantity Q2.

(iii)

**Barriers to entry** –Perfect Competition has no barriers to entry, there is free entry to and exit from the industry. In Monopoly however there are barriers such as government regulations or cost barriers which prohibit free entry.

**Profits in the long run** – Firms in Perfect Competition only earn **normal profit** in the long run due to free entry, new firms will always come into the market place and erode the SNPs, average revenue equals average cost. In Monopoly new firms cannot enter so the firm can continue to **earn SNP** and average revenue exceeds average cost.

**Economies of scale** – Firms in PC tend not to benefit from economies of scale because each one only produces a small fraction of total output. In Monopoly however as there is only one firm in the industry they can expand and may benefit from economies of scale driving down their cost per unit.

**Price discrimination** – Firms in PC cannot practise price discrimination because the firm is a price taker and cannot control the price it charges. In Monopoly the firm could practise price discrimination because it has control over the price charged so it can charge different prices to different producers for the same good.

**Leaving Certificate 2017**

**(a) (i) Show, by means of two separate labelled diagrams, the short run and the long run equilibrium positions of a profit maximising firm in perfect competition.**
**(ii) Compare the short run equilibrium position with the long run equilibrium position of a perfectly competitive firm under the following headings:**

**1 Price and Output; 2 Profits; 3 Efficiency.** **(35)**

**(b) The table below shows data for a perfectly competitive firm in equilibrium.**

| Average Revenue | Average Variable Cost | Average Total Cost |
|---|---|---|
| €50 | €40 | €60 |

**(i) Using your knowledge of perfect competition, what is the marginal revenue earned by this firm.**
**(ii) Should the firm continue in business? Explain your answer.** **(20)**

**(c) Bord Bia reported the total value of the Artisan Food market to be growing strongly, leading to more firms entering the industry. (Bord Bia defines Artisan Food as being "high-quality, distinctive and produced in small quantities", e.g. farmhouse cheeses, breads etc.)**

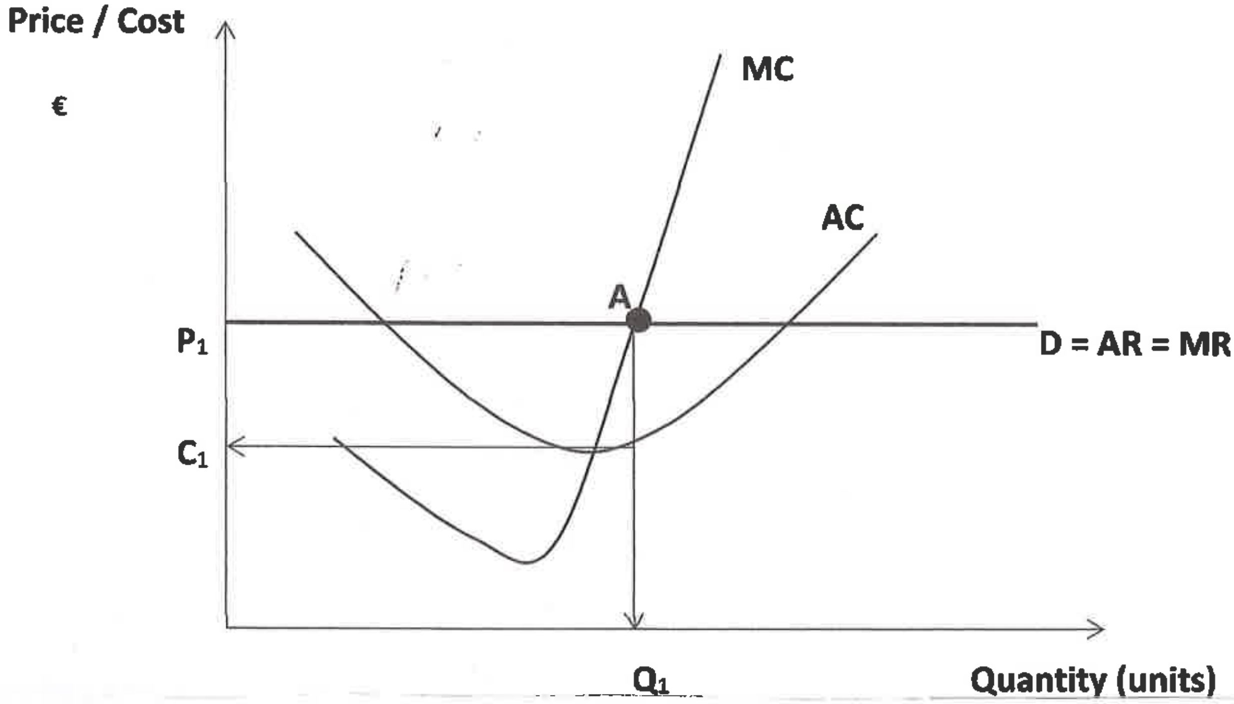
**(i) State a market structure which most closely reflects this situation, giving reasons for your answer.**

**(ii) Explain the shape of the demand curve of a firm in this market structure. (20)**

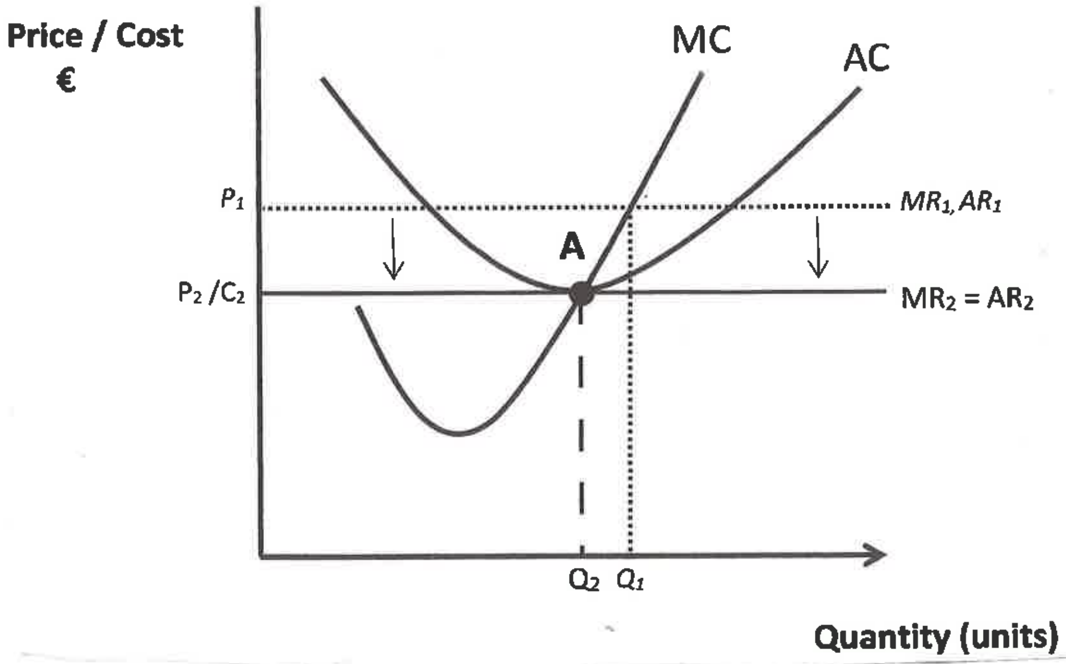
**Solution –**

(a) (i)

Short run




Long Run



(ii) **Price and Output** – When new firms enter the industry the market price falls and the firm being a price taker must accept the going market price. The price in the long run is lower than in the short run. The firm's output in the long run is lower than in the short run.
As new firms enter the industry each firm will supply a smaller fraction of the total output.

**Profits** – In the short run the firm earns supernormal profits because average revenue is greater than average cost. In the long run new firms entering the market compete away (drive down the price) these supernormal profits so only normal profit is earned where average revenue equals average cost.

**Efficiency** – In the short run, as firms are earning supernormal profits, there is no incentive to be efficient and these firms do not produce at the lowest point on the average cost curve. In the long run, as firms have no control over price, only firms that are efficient and produce at the lowest point on the average cost curve will survive.

(b) (i) Marginal Revenue is €50 because in Perfect Competition average revenue = marginal revenue.
In perfect competition each firm is a price taker each additional good is sold at the original market price. The demand curve is horizontal because the AR and MR are equal and constant.

(ii) The firm should continue in business in the short run even though it is losing €10. The firm's revenue of €50 is covering its variable cost of €40 and making a €10 contribution to its fixed cost.
The firm should continue in business in the short run and absorb the loss and endeavour to adjust its cost or production levels so that it can cover all of its costs in the long run.

(c) (i) The Artisan Food market is **imperfectly** competitive (**monopolistically competitive**) because-
1 There are many firms in the industry with a relatively small market share. Each artisan producer is too small to influence the overall market.
2 There is freedom of entry to and from the industry as there are no barriers to entry.
3 Product differentiation exists. The goods are differentiated which gives each firm some power over price but as close substitutes are available they take into account the effect on demand if they change their price.

(ii) An imperfectly competitive firm faces a downward sloping demand curve. This is due to the fact that it sells a differentiated product and therefore has some power over price ad it can decide what price to charge. Each firm has a product that consumers view as somewhat distinct from the products of competing firms. If the firm increases the product price there will be a reduction in demand as some consumers will switch to the products of competing firms which have become relatively cheaper.

## Perfect Competition (New Course)

Adam Smith said that **"Perfect(Pure) Competition is an efficient resource allocation system"**

**Assumptions –** As in the **notes on page 2,** but including the following- 1 Many buyers; 2 No collusion between firms; 3 Firms face a perfectly elastic supply of factors of production (meaning that if a firm wishes to increase production it can easily access the necessary factors of production at the existing price).

**Examples of Perfect Competition –** PC doesn't exist anymore in its purest form but some industries exhibit features of this form of competition such as –

1 Fruit and Vegetable markets like Moore St. in Dublin.
2 Global currencies and stock markets.
3 Agricultural markets;
4 Commodity markets like coffee.

**In PC firms tend not to engage in Advertising –**

1 Their products are homogeneous (identical).
2 No need to advertise because each firm sells all that it wants at the existing market price i.e. it faces a perfectly elastic demand curve.
3 Advertising will increase the firm's costs and the firm will not receive any additional revenue.
4 Advertising by one firm benefits all the other firms.

**Advantages of Perfect Competition –**

1 Maximises efficiency as production occurs at the lowest point on the average cost curve. Firms in PC tend to pay the minimum wage of €10.10

per hour because in order to survive and having no control over price they endeavour to pay the minimum wage in order to minimise costs.
2 Consumers are not exploited and they are charged the minimum price. This is because only normal profit is earned by firms due to new firms entering the market.
3 No money is wasted on advertising keeping costs to an absolute minimum.

**Disadvantages of Perfect Competition –**
1 Little choice for consumers ….
2 No resources available for research and development due to the absence of supernormal profit.
3 No scope to enjoy economies of scale due to the small size of the typical firm in Perfect Competition.
4 No incentive to develop new technology due to perfect knowledge. This means other firms in the industry would have immediate access to this new technology.