**Chapter 5 Market Structure**

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**Chapter 5 Market Structure**

**1. Perfect Competition**

**1.1 Definition and Characteristics**

In the perfect market structure, there is perfect market information, market price and cost of production and mobility of factors of production, in terms of occupation and geography. There are many firms and the product is homogeneous. The firms are also price-takers as no firms can control the production level and thus cannot set the price level.

Under this market structure, the marginal and average revenue is horizontal and constant as output increases, which means that the demand curve (AR) is perfectly elastic implying that the firms in this market structure are price-takers, abiding to the price level set by the industry as there is perfect information about the price level while the marginal cost will rise as there is over-utilization of fixed capacity of production in short run. As a profit-maximizing firm, the production level is at the level where the marginal cost is equal to the marginal revenue. As the marginal revenue is perfectly elastic, the firm is able to attain production efficiency and allocative efficiency in the long run. Since the average cost can be at the lowest level and price is equal to MC. (SR/LR)

Profit maximising rule

· MR>MC → additional net profit

o ↑Qty

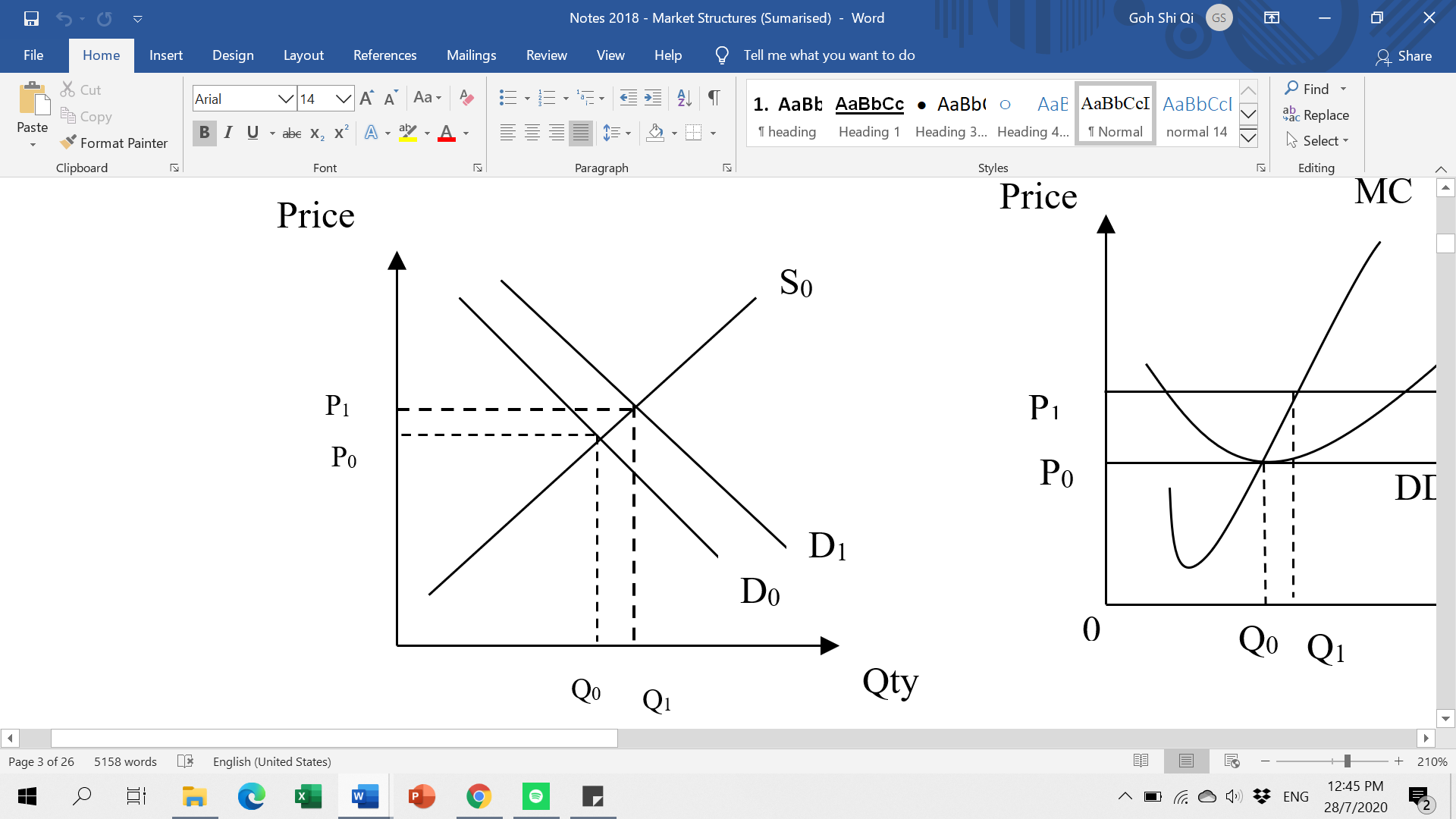
· MR<MC → additional net loss

o ↓Qty

· Production equilibrium

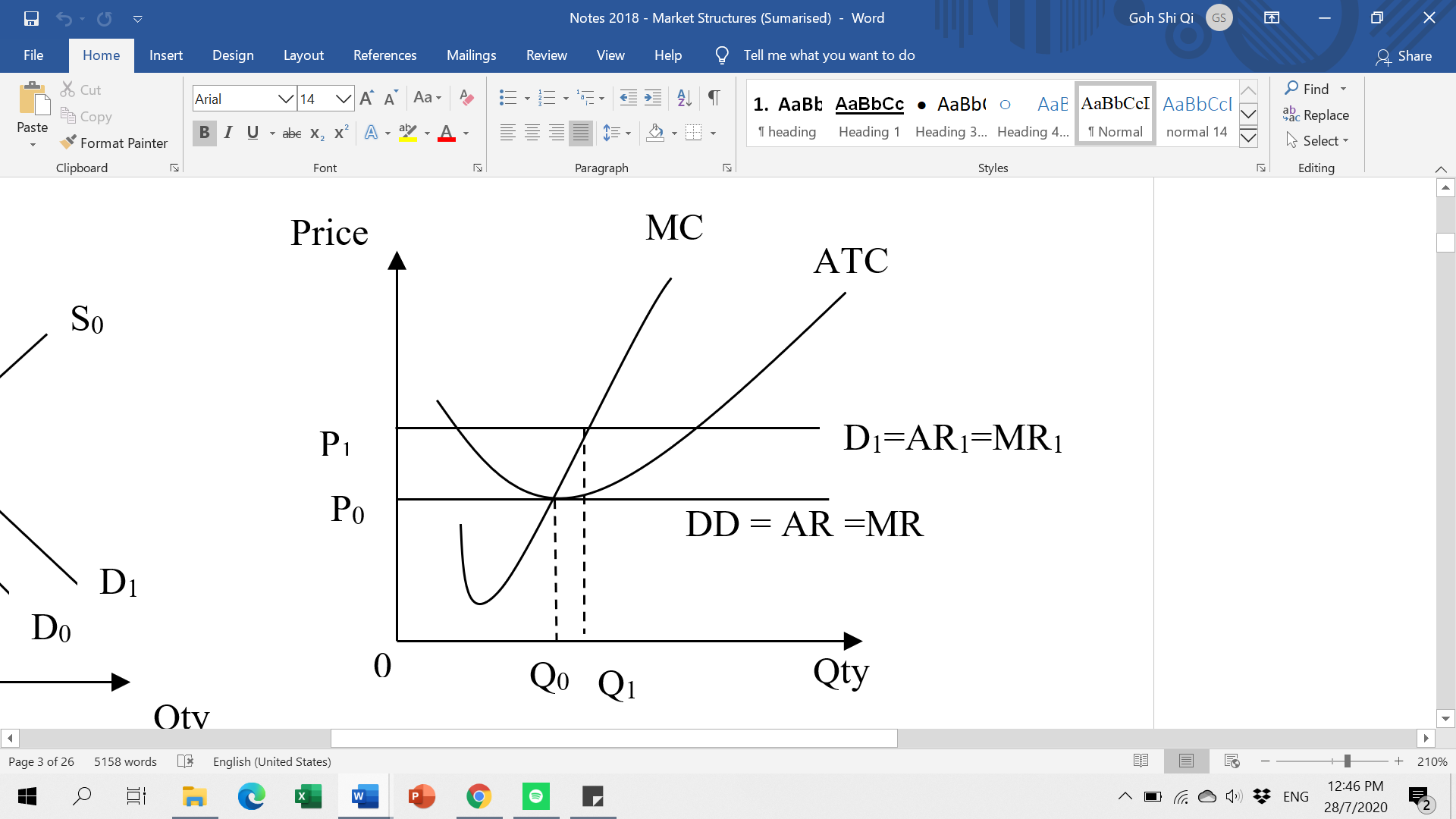
o MR = MC

**1.2 Diagram for Perfect Market Condition (Normal/ Subnormal/ Supernormal in the short-run)**



Industry

-Market Equilibriumdd/ss



Firms

-Production Equilibrium MC=MR

- Price is set by the industry if output is set by the firm base on profit-maximising rule

Profit Level

• At QM,

o AR>AC → supernormal

o AR<AC → subnormal

o AR = AC → normal

• Shutdown equilibrium, where AR = AVC

**1.3 The notion of Profit Maximization**

Firms in the perfect or imperfect market structure abide by the notion of profit maximization to set their price and output decisions. At the level where, marginal revenue (MR) is equal to marginal cost (MC). When MR > MC, the firms will experience additional net profit and thus, it is rational to increase production level. When MR < MC, the firms will experience additional net loss, and thus, the firm will reduce output. Thus, the production equilibrium based on a profit maximization will be at MR = MC.

**1.3.1 Allocative Efficiency**

Allocative efficiency refers to the condition where the industry is able to attain maximization of welfare seen in terms of the consumer and producer welfare. When the firm attains allocative efficiency, the production level is set at the level where price is equal marginal cost. When the price charged by the producer is equal to marginal cost, the consumer will not be charged excessively and his consumer surplus will be maximized, implying that the industry has maximized consumer welfare.

**1.3.2 Production Efficiency**

Production efficiency refers to the condition where the firm sets the output level at the minimum average cost and this will enable the firm to lower price and raise consumer welfare. In the short run, firms in the imperfect market structure will not produce at the excess capacity where the average cost is not minimum and thus, the society will not be able to attain lower price levels. However, in the long run, all firms will attain production efficiency as they are able to attain the lowest average cost at the respective level of output.

**1.3.3 Capacity of Economies of Scale**

All firms will be able to reap internal and external economies of scale (EOS) and incur diseconomies of scale (DEOS) in the long run. However, the smaller firms in the perfect market structure and monopolistic competitive are unable to achieve economies of scale as they cannot expand their production. As for the larger firms in oligopolistic market structure and the monopoly, it is easy to experience EOS but they are also easily subjected to DEOS too.

**2. Monopoly**

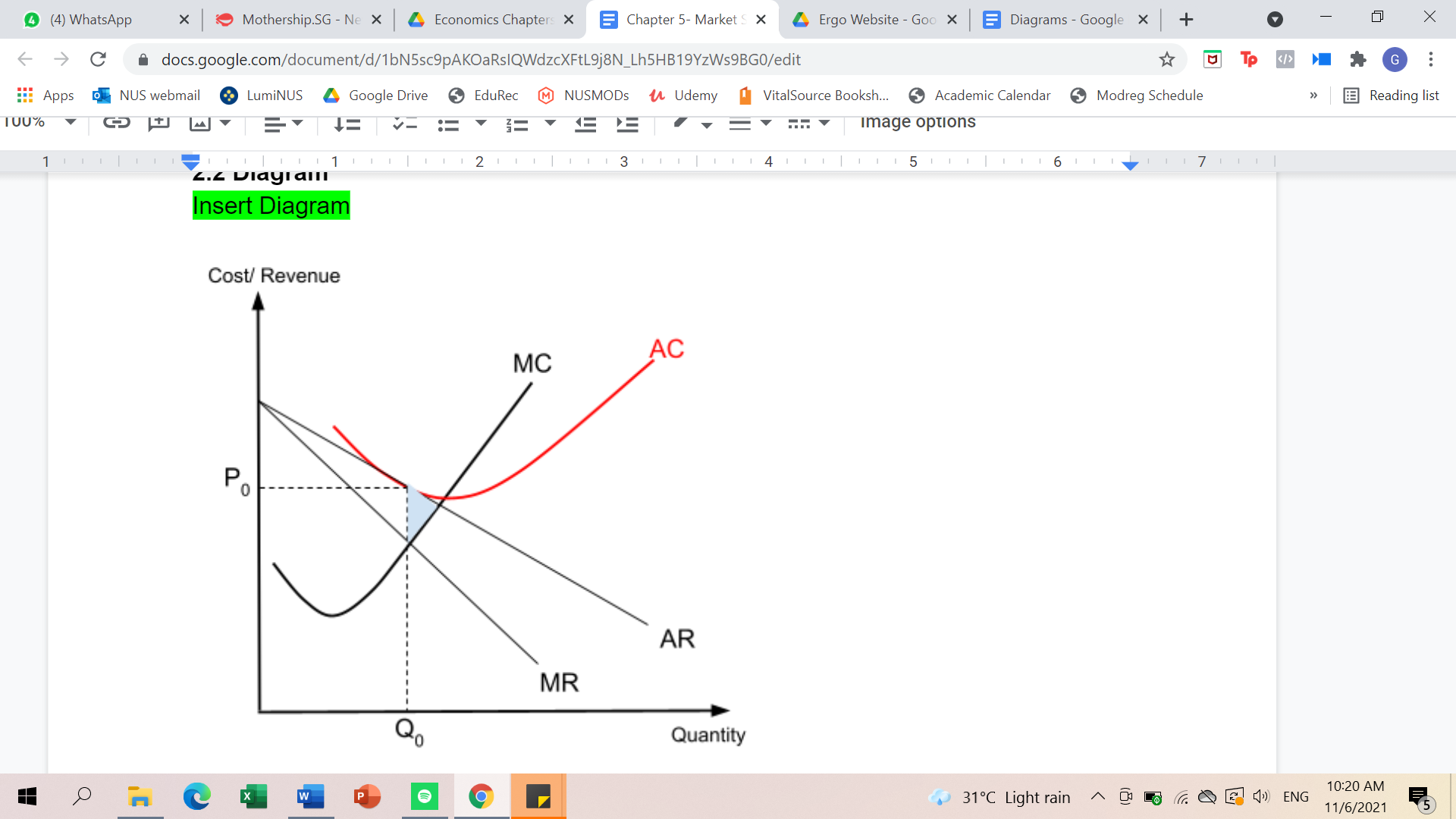
**2.1 Definition and Characteristics**

In the monopoly form of market structure, there is imperfect market information and immobility of factors of production. There is only one firm and the product is unique. The firm has strong market control as it can impose strong barriers to entry, either naturally or artificial. The firm in this industry is price-setter whereby the firm can set the price or the quantity level.

Under this market structure, the marginal revenue and average revenue is downward sloping from left to the right due to the market power and thus, allowing it to exercise as a price setter while the marginal cost will rise as there is over-utilization of fixed capacity of production. As a profit maximizing firm, it will produce at the level of output where the marginal revenue is equal to the marginal curve. However, the firm is unable to attain production efficiency and allocative efficiency since the market equilibrium level of production at MC = MR does not equal the production efficiency level where output level is at min AC or P = MC, as the firm is producing at excess capacity of production (SR).

**2.2 Diagram**

Insert Diagram



As seen from the diagram, the marginal and average revenue is downward-sloping from left to right due to high degree of market power while the marginal cost is upward-sloping as there is over-utilization of resources. The production equilibrium is at Q¬M where the firm (monopoly) abides to the profit-maximising rule, setting the quantity based on MC=MR. At this level of output at QM, the firm is making normal profit as AR=AC.

At Q0,

• MC = MR

• AR = AC → normal profit

• P ≠ MC → P > MC

• Output ≠ minimum AC

• No allocative or production efficiency

AR < AC1 → Subnormal profit

AR > AC2 → Supernormal profit

**2.3 Barriers to Entry**

Barriers to entry are restrictions imposed by the firms/monopoly to block entrance of new firms to prevent competition. There are two types of barriers to entry, natural and artificial

**2.3.1 Types of barriers to entry**

A. Legal barriers

- created by the presence of patent rights and intellectual property rights

B. Technical barriers (Economies of Scale)

– the firm is able to gain advantage in the technological advancement to lower cost of production to a level where other firms cannot attain and thus, prevent the other firms from joining this industry

C. Ownership of or control over key factors of production

– the monopoly can control certain essential resources which are critical in the production of the goods and thus, making it impossible for other firms to enter the industry.

- Existence of high transport costs and tariffs – it will raise the price of the goods sold by the foreign companies and thus, enabling the local firm to develop itself as the sole firm which can supply the good at the lower price level.

D. Lower costs for an established firm

– this is attained by economies of scale which will enable to lower the cost of production and thus, selling at a lower price to force out competition.

E. Product differentiation and brand loyalty

– the product can be differentiated and make it most favoured by consumers and thus, cultivating the brand loyalty which will create market power for the firm.

F. Contrived barriers (Deliberate restrictive practices)

– this is achieved when the firms or the firm in the industry creates certain professional requirement and condition of business which will allow the firm the exclusive control of the market

**2.4 Price Discrimination**

**2.4.1 Conditions for Price Discrimination**

- Two or more prices being charged

- The good in all situation must be exactly the same good

- Price differences must not arise out of cost differences

- The seller must be able to control the supply of the good and thus prevent the resale of the good from one market to another

- Ability of the monopolist to separate markets:

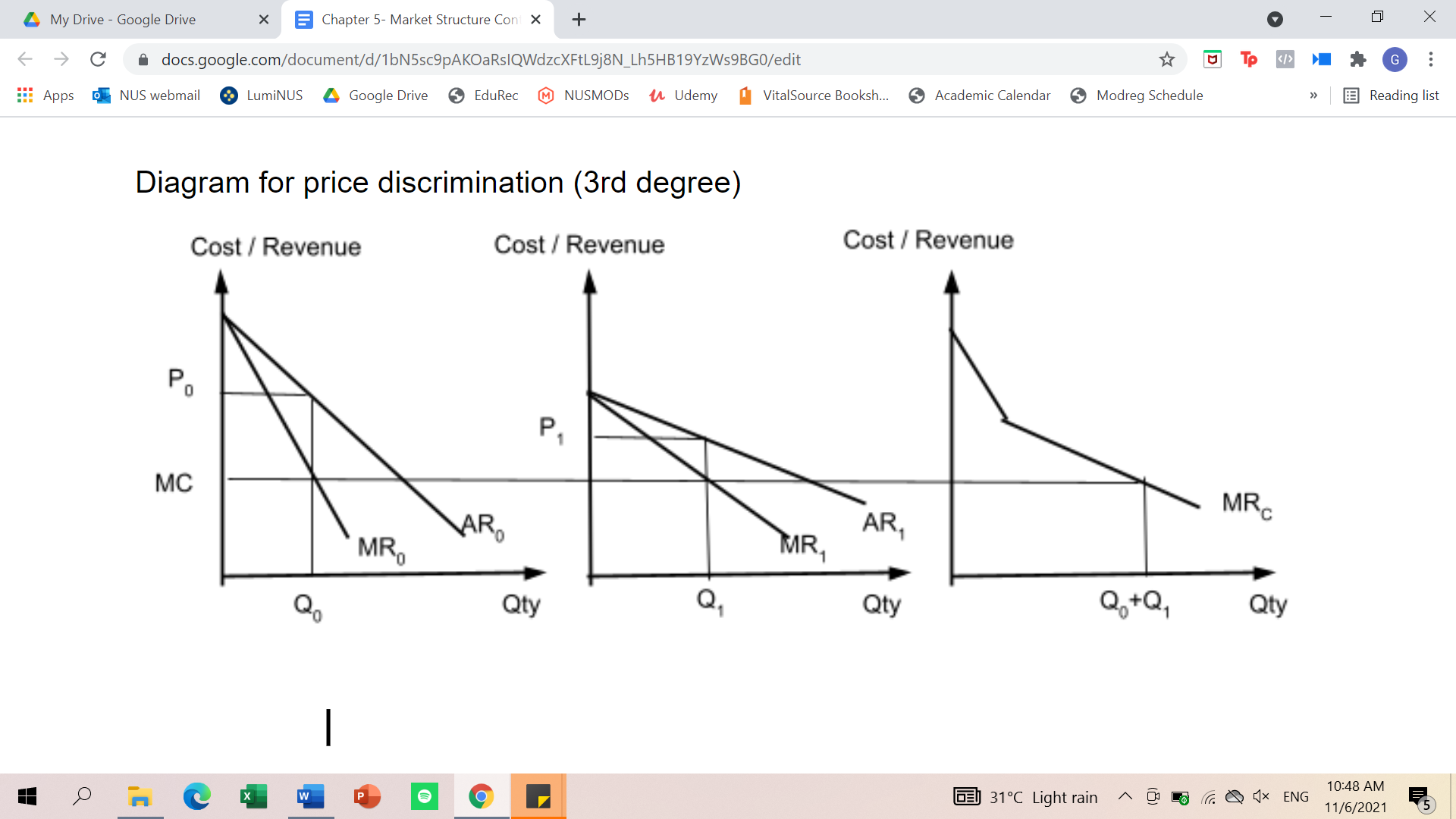
* Geographically
* Type of demand
* Time
* Nature of product (Different value of PED)

- Basis of assessment for discussion on whether price-setting is an act of price-discrimination

* Examples – Weekend/Weekdays: Cinema tickets, Cruise tickets
* Other examples: Photocopying, Auction

Advantages and disadvantages of price discrimination

Diagram for price discrimination (3rd degree)



**3. Oligopoly**

**3.1 Definition and Characteristics**

In the oligopolistic form of market structure, there is imperfect market information and immobility of factors of production. There are a few firms and the product is differentiated or homogeneous. The firms have strong market power as they can create barriers-to-entry but the firms are mutually interdependent. The firm in this industry is price-setter whereby the firm can set the price or the quantity level.

Under this collusive oligopolistic market structure, the marginal revenue and average revenue is downward sloping from left to the right as it can exercise as a price setter due to the market power while the marginal cost is rising due to over-utilization of fixed capacity of production in the short run. As a profit maximizing firm, it will produce at the level of output where the marginal revenue is equal to the marginal cost. However, the firm is unable to attain production efficiency and allocative efficiency since the market equilibrium level of production at MC = MR does not equal the production efficiency level where output level is at min AC or P = MC. (production is at excess capacity)

The firms in the oligopolistic market structure compete differently based on the nature of competition. It may collude as a cartel whereby the firms establish a virtual monopoly by agreeing upon one common uniform price in the market.

**3.2 Conditions necessary for successful collusion (feasibility of cartel)**

* The fewer the number of sellers – easier to agree on terms
* The more identical their products i.e. standardized products – less controversy
* The more nearly identical their costs of production – easier to set price
* The more certain firms can be that their rivals will adhere to the agreed-upon tactic of avoiding price competition – efficient monitoring system

They may also compete under different price leadership whereby the firms in the industry tend to set their prices according to that charged by a firm called the price leader. The firms may operate under such situations:

A. Dominant firm: This is where firms (the followers) choose the same price as that set by the dominant (largest) firm in the industry, without the consultation of other firms. (E.g. iPod)

B. Barometric price leader: The firm makes price changes more quickly and successfully than its rivals in response to changing costs and demand conditions. The other firms watch it and emulate its decision. Barometric price leadership is indicated by a number of market characteristics, for example, occasional switching between firms in the role of price leader. (E.g. Computer chips/Hard disk)

C. Low-cost price leader: The firm with insignificant cost has an advantage over its rivals and sets the price. (E.g. Seagate)

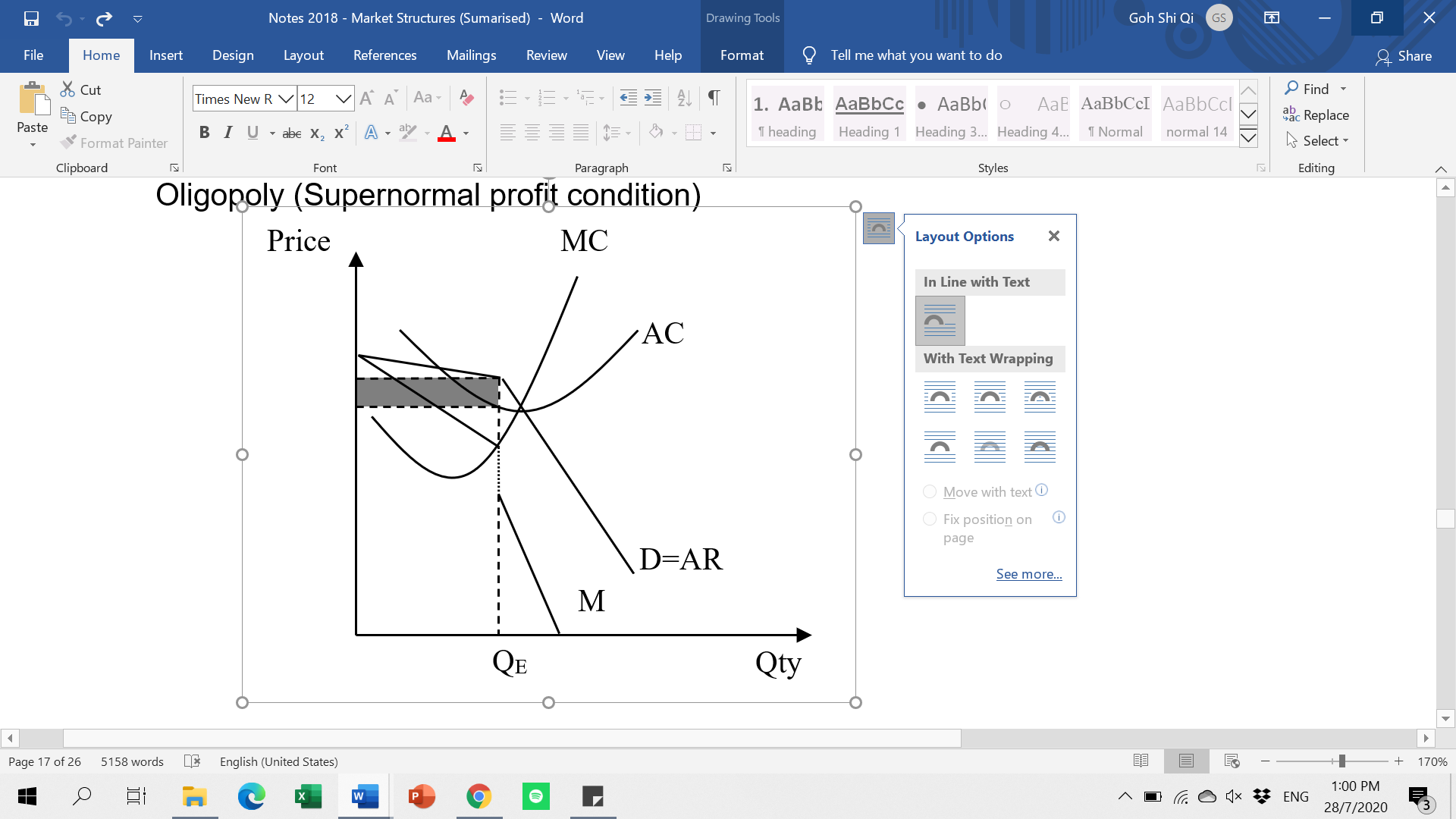
The firm may also engage in non-collusive market competition whereby there is NON-collusive conduct.

**3.3 Kinked-Demand Curve Model**

This model explains why once a price-output combination has been decided upon and the oligopolistic firms will not want to experiment with further price changes.

When the firm increases price, the rival firm will not increase price as the rival firm can gain as the customers will switch the consumption from the firm to the rival firm. This will lead to a large reduction in quantity demanded since the degree of substitution is large, contributing to the demand curve for this portion to be price-elastic. However, when the firm decreases the price, the rival firms will follow suit as they will lose out if the customers of the rival firms may switch the demand to the firm. This means a smaller degree of substitution which will lead to a less than proportional increase in quantity demanded, contributing to the demand curve for this portion to be price-inelastic. It also implies that there is price rigidity as the firm is unlikely to change price as there is little to gain from price changes unless there is large percentage change in cost condition. This reflects that there is a high degree of mutual interdependence which contributes to the condition of price rigidity, thus the development of a kinked demand curve.

Oligopoly (Supernormal profit condition)



As seen from the diagram, the MR and AR is kinked with the portion being price-elastic when price and the portion being price-inelastic when price . The MC is upward-sloping when the MC rises, and thus production equilibrium is set at MC=MR, where profit maximization condition is attained.

**4. Monopolistic Competition**

**4.1 Definition and Characteristics**

In the monopolistic form of market structure, there is imperfect market information and immobility of factors of production. There are many firms and the product is highly differentiated. The firm also possesses slight market power as it can create its own market share through product differentiation but the control of the market is limited. The firm in this industry is price-setter whereby the firm can set the price or the quantity level but has a high degree of substitution, contributing to the presence of a price-elastic demand curve.

Under this market structure, the marginal revenue and average revenue is downward sloping from left to the right as it can exercise as a price setter due to the market power while the marginal cost rises due to over-utilization of fixed capacity of production in short run. As a profit maximizing firm, it will produce at the level of output where the marginal revenue is equal to the marginal curve. However, the firm is unable to attain production efficiency and allocative efficiency since the market equilibrium level of production at MC = MR does not equal the production efficiency level where output level is at min AC or P = MC.

As there are no barriers to entry and the impact of profit conditions in the short run, the firm will make only normal profit in the long run. When the firms are making losses in the short-run, there will be firms which exit from the industry. This will contribute to the increase in market demand for the remaining firms and the demand curve will become more price-inelastic as there is lower degree of substitution until the cost and revenue condition adjust to the normal profit level. On the other hand, when the firms make supernormal profit, there will be the entrance of more firms as they are attracted by the profit level. This will contribute to the fall in the market demand for the firms and the demand curve will become more price-elastic as there is higher degree of substitution until the cost and revenue condition adjust to the normal profit level.

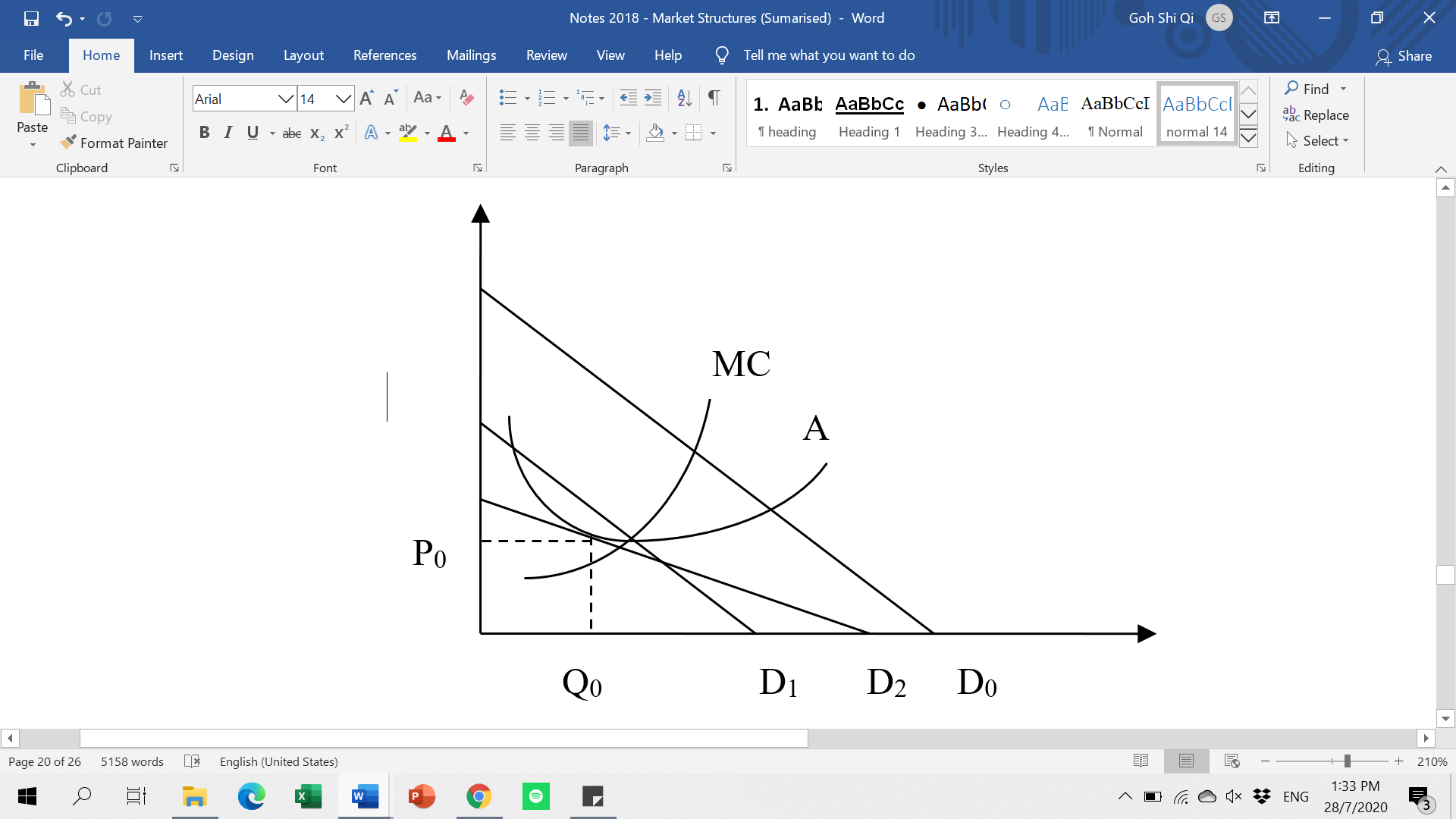
**4.2 How the firm will adjust to normal profit in the long run when they make super-normal profit in the short run**

- Firms make normal in the MC in LR

* Different profit condition in SR
* Ease of entry and exit – low barriers to entry

- SR – Supernormal condition – Entrance of new firms

* in market demand for the firm in industry (D0 to D1)
* Demand becomes price-elastic because of high degree of substitute (D1 to D2)
* Adjust until firms make normal profit where production is at profit-maximizing level, where MC=MR



**Qn. 4.3 How the firm adjust to normal profit in the long run when they make sub-normal profit in the short run.**

**5. Intellectual property rights**

Analyze how the introduction of intellectual property rights will affect the price and output decision of the firm in the imperfect market (production equilibrium). [15 marks]

5.1 Introduction

- Definition

- Economic principles/requirement of question

* Relate intellectual property rights to barriers to entry
* State how this price and output decision is based on profit maximizing and the concept of the determinants of PED.

5.2 Main Body

1) Why intellectual property rights will contribute to rise in market power in terms of setting barriers to entry

2) How the above will affect MR/AR and profit maximizing rule in affecting price and output decision of firms

• MR>MC

• MR<MC

• MR=MC

• How are these affected by the value of PED?

3) Draw diagram and description of diagram

4) Analysis

• Value of PED

• Steepness of slope → level of price

5.3 Conclusion

Use the concept of PED to explain the influence of barriers to entry → based on profit maximization in determining price and output of firms

**6. What is the impact of large firms like Monopoly and Oligopoly on society?**

Disadvantages of a large firm to the society

* Consumer exploitation – charge higher price and produce at lower output as the firm has market control and domination
* Incur increasing COP efficiency as the firm fails to gain production at production efficiency (Production = min AC)
* Fail to produce at allocative efficiency. As a result, the firm will incur deadweight loss leading to loss of consumer surplus and welfare
* Lack of competition will impede the organization from the pursuit of innovation, degrade the quality of product and reduce product variety and consequently, decrease consumer satisfaction
* Negative effects of price discrimination – higher price

Advantages of a large firm to the society

* May pass the cost saving to the consumer in the form of lower price
* Provide greater assurance of product quality as the firm have better machinery and technology
* Positive effects of price discrimination — able to produce goods that are not possible to produce under single pricing when the firm exert monopoly power and conduct price discrimination
* Greater stability for the economy as the company has the resources to withstand economic downturns and will not likely to fail, leading to massive unemployment.
* Ensure the supply of critical resources for the economy to ensure the smooth and efficient production and distribution of goods and services. This will lead to a higher level of economic growth and standard of living as seen in turn of the supply of infrastructural development.