Suggested answer for 2023 A-Level Paper 2 Question 3

A firm's decisions and strategies are influenced by the level of competition in the industry. Its decisions and strategies might also be affected by consumers' cognitive biases and concerns about the environment.

(a) Explain why a firm considers the level of competition in the industry when making decisions about the price and output level of its product. [10]

(b) If markets fail due to a lack of competition, discuss whether consumers will be disadvantaged and what might be the most appropriate form of government intervention. [15]

Part (a) - Question Analysis

Approach	**Command Word**	Explain
	Question Type	Cause and effect
	Start point	Level of competition
	End Point	Price and output decisions
Content and Context	**Content**	• Level of competition → market structure → perfect competition, monopolistic competition, oligopoly, monopoly • Price and output decision → marginalist principle
	Context	None

Introduction

State essay approach: A firm will aim to maximize profits when making decisions using the **marginalist principle**, producing at the output where marginal revenue (MR) equals marginal costs (MC). The level of competition determines the market structure the firm is in and the amount of **market power** it has. The market structure also affect whether a firm needs to consider the impact of **rival's reaction** when deciding its pricing and output decision.

Point 1: How high degree of competition affect pricing and output decision

- A **perfectly competitive (PC)** firm faces high degree of competition as there are many small firms selling homogeneous products in the market due to the lack of barriers to entry.
- As such, a PC firm has **no market power** and is **a price taker** due to its small market share. It follows the market price, P which is determined by the market demand and supply and faces a **perfectly price elastic demand curve** as shown in figure 1. Any attempt to increase price will result in quantity demanded falling to zero as consumers will switch to the many substitutes available. The firm has also no incentive to lower price as it can sell as much as it wants at the existing price.
- At P, the PC firm will **produce at Qfirm** where **MR = MC** to maximise its profits.
  - If the firm were to produce Q1 unit, the MR (the extra revenue from selling one more unit) is greater than the MC (the extra cost of producing that additional unit). Producing this additional unit will benefit the firm as the extra unit will add to its total profits.
  - By producing an output greater than Qe output level (e.g., Q2,), the MC (the extra cost of producing one more unit) is greater than the MR (the extra revenue from selling that

additional unit. Hence, doing so will not benefit the firm and in fact will lead to lower profits.

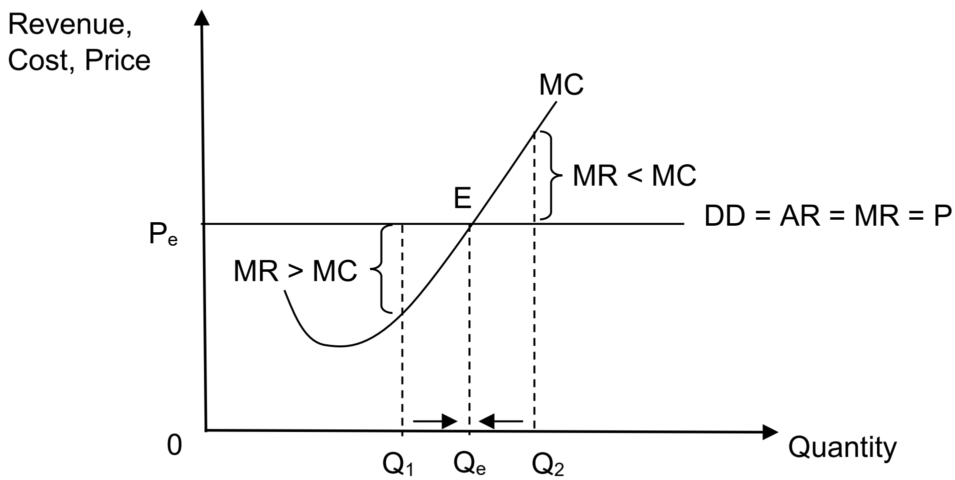

Figure 1: Price and Output of a PC Firm

Point 2: How low degree of competition affect pricing and output decision

- On the other hand, a **monopolist** faces low degree of competition as there are strong barriers to entry to prevent new firms from entering. For example, patent allows pharmaceutical companies such as Pfizer to be the sole producer for new drugs that they have created.
- A monopolist thus faces a **downward-sloping demand curve** as shown in figure 2 due to its high market share and **demand is relatively price inelastic** due to a lack of strong substitutes.

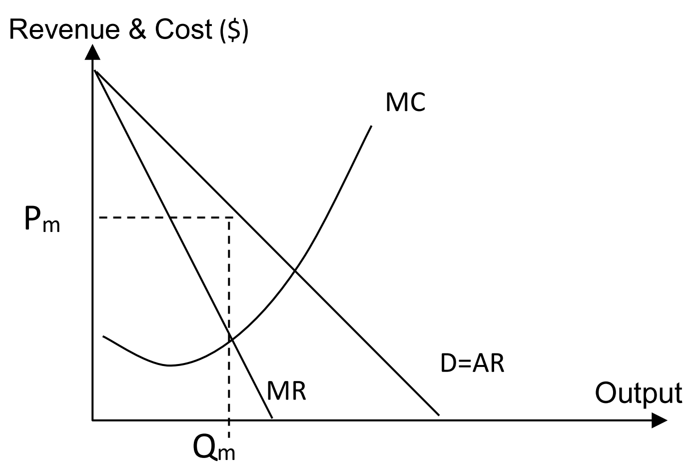

Figure 2: Price and Output of a Monopolist

- To maximise profits, the monopolist will produce at **Qm where MR = MC** and **set a price of Pm**.
- An **oligopoly** is another market structure faced with low level of competition. It is characterized by a few dominant firms, each holding significant market share due to strong barrier of entry. For example, Singapore's telecommunications (telco) market is dominated by four firms - SingTel, Starhub, M1 and MyRepublic.

- As such, oligopolistic firms are **mutually interdependent**. This means that one firm's behaviour greatly affects its rivals. Consequently**, the rival firms are likely to react to any action by the oligopolistic firm, and the oligopolistic firm must consider those reactions every time it makes a decision**. Oligopolistic firms hence must make decisions carefully in anticipation of what rivals could do.
- For example, in a competitive oligopoly, **price rigidity** occurs due to **high rival consciousness**. This means prices of goods and services are often observed to remain relatively stable as rival firms will match each other's price reductions but not price increases.
  - If SingTel decides to lower its prices below existing market price, this will increase their quantity demanded (sales volume). However, Starhub would react and likely match SingTel's price reduction to retain their significant market share. Therefore, it is unlikely SingTel would reduce price due to Starhub's reaction and start a price war.
  - If SingTel decides to increase its price, the quantity demanded will decline. Starhub has no incentive to match the price increase as their market share would increase at the expense of SingTel as Singtel's customer switch to a cheaper alternative. Therefore, it is unlikely that SingTel would increase price to earn high profits.
- On the other hand, a **monopolistic competitive** firm such as Koi, which sells bubble tea, can make pricing and output decision **independently**. This is because there are many small firms in monopolistic competition selling slightly differentiated products due to weak barriers of entry. Hence each monopolistic competitive firm holds an insignificant market share and the **price and output decision of one firm is unlikely to have a significant effect on the price and output decisions of other firms within the market.**

Conclusion

In conclusion, the level of competition ultimately affects the ability of a firm to set price independently through affecting its market share and market power. The lower the level of competition, the more market power it has and the higher the ability to set higher prices as demand is more price inelastic.

Mark Scheme

Level	Knowledge, Understanding, Application, Analysis	Marks
L3	Full display of AO1, AO2 and AO3 skills: For an answer that shows well-developed explanation of why a firm considers the level of competition in the industry when making decisions about the price and output level of its product • clear and accurate explanation of price and output decision of firms in different market structure with appropriate diagrams • supported with relevant examples	8-10
L2	Uneven display of AO1, AO2 and AO3 skills: For an answer that shows under-developed explanation of why a firm considers the level of competition in the industry when making decisions about the price and output level of its product • lacks depth of analysis (i.e., limited effective use of relevant economic analysis such as the different market structure or gaps in diagrammatic analysis such as using a single profit-maximising diagram to explain the price and output decision for firms regardless of the level of competition) • lacks scope (i.e only explain pricing decision) • lacks relevant examples	5-7

L1	Limited display of AO1 and AO2 skills: For an answer that shows limited knowledge of why a firm considers the level of competition in the industry when making decisions about the price and output level of its product • listing of points, unexplained statements, or descriptive response • many conceptual errors (i.e., using total benefit/costs instead or marginal costs/benefit when explaining output and pricing decision, confusion between the market structure, using DD/SS instead of a firm’s diagram) • irrelevant response such as limit or predatory pricing • smattering of points	1-4

Part (b) - Question Analysis

Approach	**Command Word**	Discuss → balanced answer + evaluation
	Question Type	a) Cause (low level of competition) and effect (consumer welfare) b) most appropriate form of government intervention → policy comparison and evaluation
	Start point	low level of competition
	End Point	Consumer welfare
Content and Context	**Content**	Market dominance, consumer surplus, policies to address market dominance
	Context	None

Introduction

State essay approach: With low level of competition in the industry, a monopolist or oligopolist could abuse their high market power by restricting output and increasing price to increase revenue. Hence market dominance would result in market failure as there is under production. Whether consumers would be disadvantaged depends on how the consumer welfare in term of **consumer surplus, choice, and quality** of product/service are affected. Government might then intervene in the form of **pricing regulation** or **increasing competition level to** protect consumers.

Body Point 1: Market dominance might lead to a fall in consumer welfare

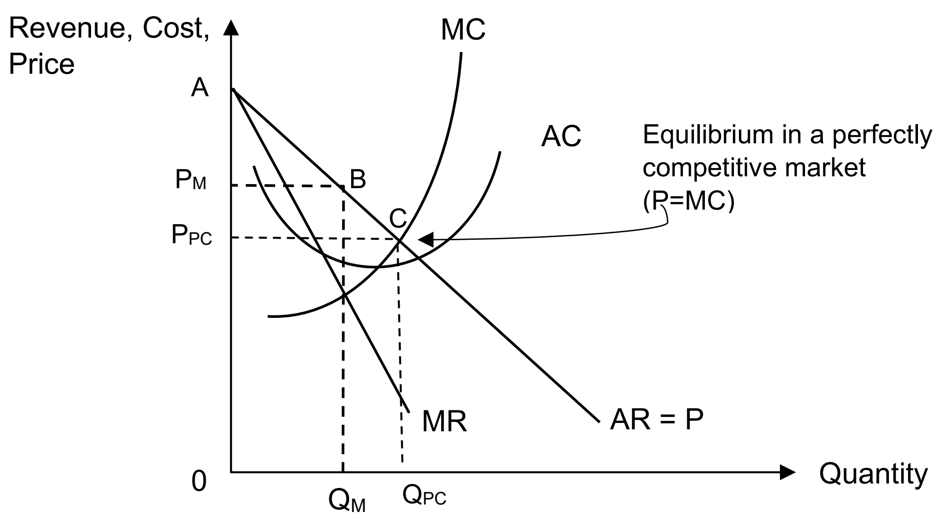

Figure 3: Consumer surplus under a monopoly (compared to a perfectly competitive market)

- In a **perfectly competitive market**, the market equilibrium occurs at point C where demand (AR) intersects with supply (MC). The **equilibrium output level is Qpc** and the **equilibrium price is Ppc**. **Consumer surplus** is **area ACPpc**.
- If the market operates under a **monopoly** market structure, the monopolist will restrict **equilibrium output to Qm** where **MR = MC** to maximise profits and set a **price of Pm**. **Consumer surplus is area ABPm**.

- Since **area ABPm is smaller than area ACPpc**, **consumer surplus is smaller** when there is lower level of competition and thus consumers will be disadvantaged when market fails due to market dominance.
- Due to a lack of competition, firms in monopoly and oligopoly market structure might **lacks the incentive to engage in product innovation**, resulting in **a lack of improvement in product quality and choices**.

<u>Body Point 2: Market dominance might instead lead to higher consumer welfare</u>

- Due to strong barriers to entry, a monopolist or oligopolist can earn **supernormal profits in the long run**. These profits could be used in **product innovation** to create **better quality products** and result in **greater variety** for consumers. For example, Apple created the Apple Vision Pro which allows consumers to watch immersive 3D movies at home, resulting in greater utility as compared to watching the same movie in 2D format.

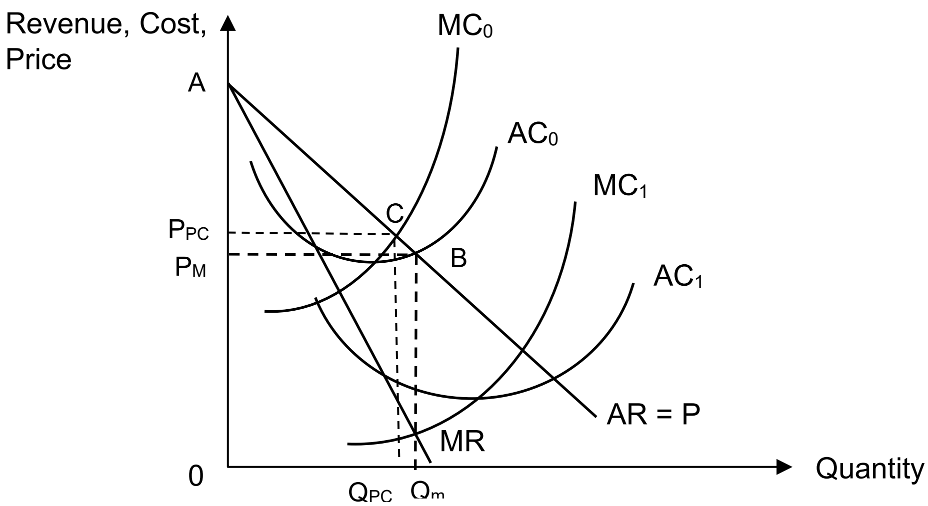

Figure 4: Process innovation

- These profits could also be used for **process innovation** that can reduce average costs of production. For example, the use of self-ordering kiosk in Macdonald helps **improve productivity** as employees can be better specialized in cooking and preparing the orders. This can result in a **downward shift of both its marginal costs and average cost curves** as shown in figure 4, leading to a **lower price from Ppc to Pm** and **higher quantity from Qpc to Qm** than what could have been enjoyed in a perfectly competitive market. This would then result in the **consumer surplus being larger** under a monopoly than in a perfectively competitive market as **area ABPm is larger than area ACPpc**.

[Alternative point]

- In addition, firms facing lower level of competition are able to produce on a **larger scale**, enjoying **internal economies of scale** such as marketing EOS through bulk purchase to reap costs savings. These **cost savings** could be passed onto the consumers in terms of **lower prices** and result in **higher consumer surplus**.

<u>Body Point 3: Government could impose MC pricing to protect consumers</u>

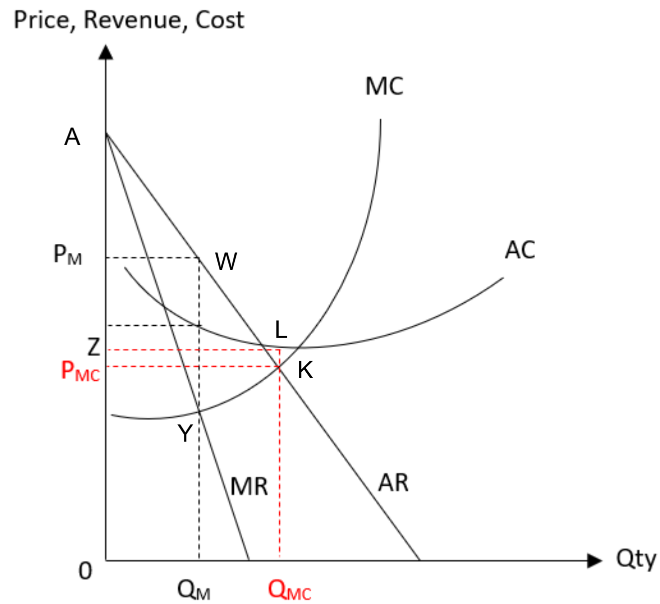

Figure 5: MC pricing

- In the free market, the monopoly will produce output Qm, charge a price of Pm and make supernormal profits equal to the area PmABC. There will be a deadweight loss of area WYZ.
- One possible government intervention is **MC pricing**, where government imposed a **price that is set equal to the marginal cost of producing the last unit of the output (i.e., P = MC)**. This is at the intersection point between the DD (AR curve) and MC curves, seen in Figure 5. The regulated firm now has no choice but to charge the price of Pmc for each unit produced. In so doing, **allocative efficiency is attained** since the correct amount of resources are used to produce the correct amount of goods and **consumer surplus increased from AWPm to AKPmc**.

<u>Intermediate EV – limitations of MC pricing</u>

- Under MC pricing, the firm might be earning **subnormal profit of area ZLKPmc** and had to **shut down**. This would result in **non-provision** and consumer suffers instead, especially if the firm is producing essential goods and services such as electricity or clean water.

Body Point 4: Government could increase competition level to protect consumers

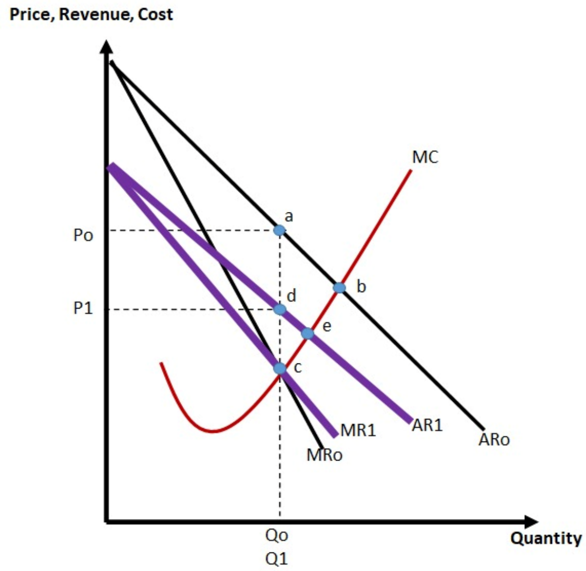

Figure 5: Increasing competition level

- Government could **increase competition level by lowering barriers to entry** to makes it easier for potential entrants to enter the market to compete with incumbent. For example, the Singapore government granted a new license for a new firm to enter the Singapore's Telco market.
- With reference to figure 5, initially at AR_0 and MR_0 before entry of more competitors, the deadweight loss area is abc. With government's policy of lowering barriers to entry, more firms enter the market, resulting in the incumbent firm's **AR (due to fall in demand) and MR to fall from AR_0 to AR_1 and MR_0 to MR_1** respectively. reducing its market power to abuse its market dominance position by raising price and restricting output. With more competition, the dominant firm will compete by **reducing price towards MC** and consumers get to enjoy **lower prices (P1)** and **greater variety** of goods and services. Deadweight loss area is also reduced as the gap between P and MC is reduced.

Intermediate EV – limitations of increasing competition level

- Increasing competition level **reduces the scale of production** of the firm, allowing it to enjoy **less internal economies of scale**. As a result, **average costs increases** and consumers might pay **higher prices** instead.
- With lower market share and market power, firms would now enjoy **lower supernormal profits** and thus are **less able to innovate** to benefit the consumers.

Summative Evaluation

- Whether consumers would be disadvantaged by low level of competition depends on the **nature of the industry**. In the case of a **natural monopoly** such as Public Utilities Board (PUB), there are extensive internal EOS to be enjoyed as the **marginal efficiency scale (MES)** occurred at a very large output. Hence consumers will be less disadvantaged by the low level of competition as they could possibility enjoy lower prices as compared to when there is higher level of competition.

- Increasing competition level tackles the **root cause** of market dominance, whereas MC pricing only reduces the negative impacts of market dominance. Hence increasing level of competition via lowering BTEs might be considered the most appropriate form of government intervention, especially in an **small and open economy such as Singapore** whom relies on foreign direct investment to drive its economy (**positive unintended consequence**). This would also ensure markets remain **contestable** and any dominant firms are less likely to abuse their market power.

Mark Scheme

Level	Knowledge, Understanding, Application, Analysis	Marks
L3	Full display of AO1, AO2 and AO3 skills: For an answer that shows well-developed explanation of how consumers would be disadvantaged by low competition level and two policies to address market dominance • well-supported with diagrammatic analysis • well-supported with relevant examples	8-10
L2	Uneven display of AO1, AO2 and AO3 skills: For an answer that shows under-developed explanation of how consumers would be disadvantaged by low competition level and possible policies to address market dominance • lacks depth of analysis (i.e. limited effective use of relevant economic analysis or gaps in diagrammatic analysis) • lacks scope in explanation policies • lacks appropriate examples	5-7
L1	Limited display of AO1 and AO2 skills: For an answer that shows limited knowledge of how consumers would be disadvantaged by low competition level and possible policies to address market dominance • with listing of points, unexplained statements, or descriptive response • many conceptual errors • Smattering of points	1-4

	Evaluation	Marks
E3	For an answer that builds on appropriate analysis to evaluate and synthesizes economic arguments to arrive at well-reasoned judgements on whether consumers would be disadvantaged by low level of competition and the most appropriate form of government intervention.	5
E2	For an answer that makes some attempt at evaluation or a conclusion on whether consumers would be disadvantaged by low level of competition or the most appropriate form of government intervention but does not explain the judgement or base it on analysis.	3-4
E1	For an answer that gives superficial evaluative statement(s) without supporting analysis and elaboration on whether consumers would be disadvantaged by low level of competition and the most appropriate form of government intervention.	1-2