Question 2

a) Explain how the level of competition influences firms' price and output decisions. 10m
b) Assess whether a firm's behaviour is always dependent on the actions of its rivals. 15m

a) Explain how the level of competition influences firms' price and output decisions.

1. Intro : Level of Competition and Market Structure

Level of competition is determined by the presence of barriers to entry - Barriers to entry refer to any impediment that prevents new firms from competing on an equal basis with existing firms in an industry. Identify PC as a market structure that has no BTE and hence high level of competition.
The higher the barriers the lower the level of competition faced by the firms. Barriers to entry determine the degree of competition faced by firms in an industry and hence the degree to which they can influence price and output decisions. Identify monopoly as a market structure that has high BTE and hence low levels of competition.
Assume that firms operate under profit maximisation motive.

2. Explain how high levels of competition affects firms' pricing and output decisions

In a perfectly competitive market - no barriers to entry - existing firms are unable to stop new firms from entering the market - no restrictions on existing firms leaving the market - no single firm has the market power to influence the market price of the product –product is identical - each firm is a price taker eg shares of listed companies in the stock markets…..

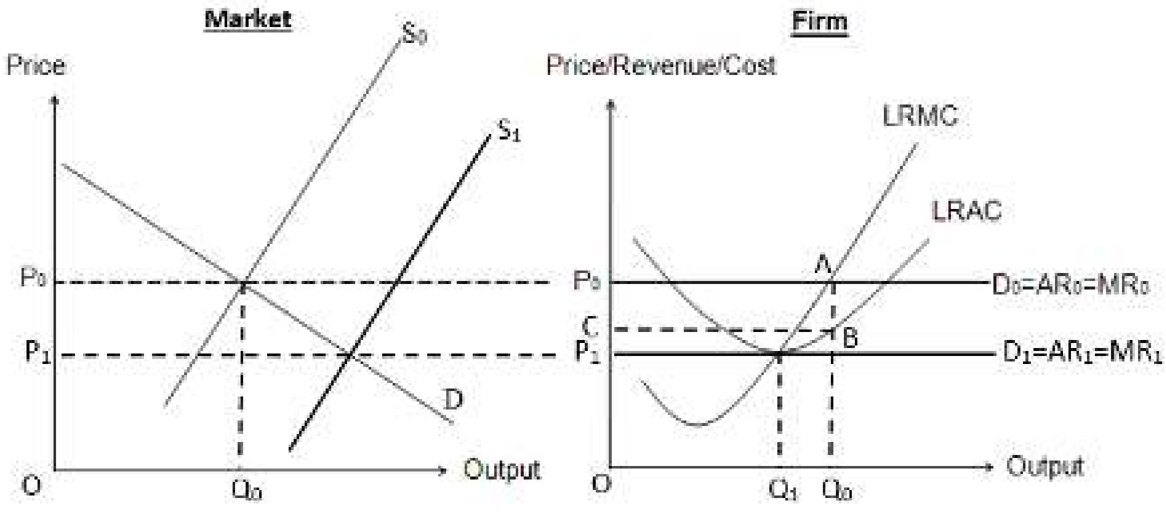


Figure 1a: PC Market Figure 1b: PC Firm

Figure 1a above, shows how the intersection between the market demand and supply curves of a perfectly competitive market determines the equilibrium price P_0, and output Q_0. Each firm in the perfectly competitive market will then take the market price P_0, as each firm in the perfectly competitive market is a price taker. The demand curve faced by each firm is thus perfectly price elastic (see Figure 1b). Each firm will then produce at its profit-maximising output, Q_2, where marginal revenue (MR_0) cuts the marginal cost (MC) curves.
Here, the perfectly competitive firm is initially earning supernormal profits ,area P_0ABC. High competition, no barriers to entry, potential profits entice new entrants into the industry leading to a shift in the market supply curve to its right, lowering its market price as a result.

The price of the perfectly competitive firm will thus follow the price determined by the market. The output however will be determined by the individual firm depending on its cost curves set. The firm will eventually earn normal profits.

2: Explain how no competition affect firms' pricing and output decisions

On the other end of the spectrum, where there is no competition due to high barriers to entry a monopoly will develop. A monopoly is one in which there exists only a single firm in the market. There is no competition as a result of the high barriers that can be classified into two categories, namely natural barriers to entry and artificial barriers to entry. The greater the natural barriers present the greater the firm's ability to set a higher price.

As the monopolist is the only producer it is the industry. The monopolist's demand curve is also the market demand curve and is relatively price inelastic since it is the sole seller of a good with no close substitutes.

To maximise profit or minimise losses, the monopolist will produce at an output where MR = MC. In the short run, the monopolist can be in equilibrium earning supernormal profits, normal profits or subnormal profits. Figure 2 shows a monopolist making supernormal profits where he will produce at the profit-maximising output, MR=MC, such that output is at Q_e and price is at P_e. The supernormal profit is indicated by area P_eABC.

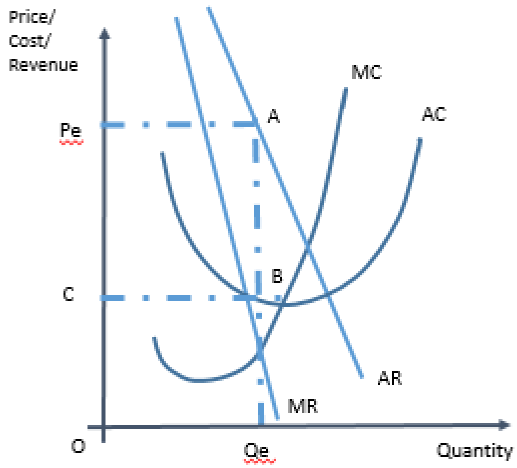


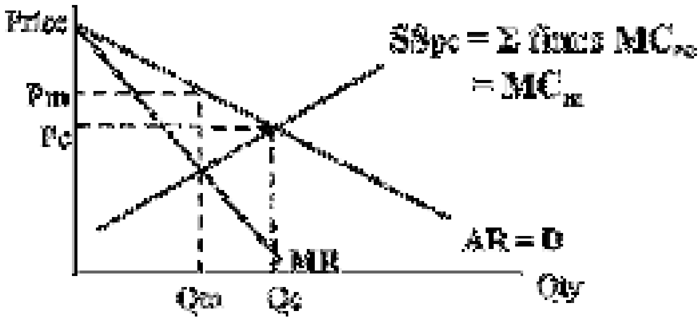
Figure 2 : Monopolist earning supernormal profits

Since there are high barriers to entry for new firms, a monopolist's short-run profits will not be competed away in the long run. Unlike the perfectly competitive firm, the monopolist can continue to sell Q_e at price P_e and continue to earn supernormal profits even in the long run. The monopolist can price his product higher and continue to earn supernormal profits for a longer period of time if his barriers to entry are natural ones than if they are artificially put up.

3. **Compare the price and output determination in a market structure with different levels of competition**

Assuming that there are identical cost structure, markets with different levels of competition would have different price and output levels.

A monopolist would have a higher price and a lower output as compared to a PC market. (Draw the diagram).



- However it is not always true that low levels of competition enables firms to dictate its price and output. In the case of Oligopoly, under the non-collusive model, firms tend not to change their price due to the characteristics of mutual interdependence (briefly explain). Similarly under the price leadership model, firms do not independently determine their prices as well as their output levels (briefly explain).

Conclusion

Barriers to entry is a key determinant to pricing and output decisions, as seen in the need for firms in perfect competition and monopolistic competition to price their product to maximise profits, so as to achieve normal profits in the long run in order to survive in the industry, but there is no need to do so for monopoly and oligopoly. High natural barriers to entry allow the monopolist to maintain its price and output so as to continue earning supernormal profits. However, firms under the perfectly competitive market that are earning supernormal profits will face a lower price and a smaller output as more firms join the market due to the presence of high competition and freedom of entry and exit.

Level	Descriptors	Marks
L3	Developed explanation of how barriers to entry can cause firms to make differing pricing and output decisions for different market structure types.	8-10
L2	Under-developed explanation of how barriers to entry can cause firms to make differing pricing and output decisions of at least 2 types of market structure types.	5-7
L1	A general discussion of only one type of market structure and its determination of price and output decision	1-4

b) Assess whether a firm's behaviour is always dependent on the actions of its rivals.

Rivals can be defined as a person, thing or firm competing with another for the same objective or for superiority in the same field of activity. Firms (including businesses and corporations) exist and make decisions to maximize profits. Firms interact with the market to determine pricing and demand and then allocate resources according to models that look to maximize net profits.
In an oligopoly, the firm exhibit mutual interdependence which means that one firm's action will have a significant impact on the other firms and the other firms will respond accordingly.
Assuming that the firms are profit-maximising, their behavior may be influenced by their rivals' actions and other factors. The extent to which the behaviour of firms depend in reality on the actions of their rivals can be discussed with reference to the concepts of market structure, strategic interdependence, government intervention/regulation and the alternative objectives of firms.

1: The behaviour of firms depends, in reality, closely, on the actions of their rivals

This is true for an oligopolistic industry whereby firms exhibit mutual interdependence where a few firms account for a large market share, with strong barriers to entry and producing homogeneous or differentiated good or service, firms are mutually interdependent. This means that the main dominant firms have a very high degree of rival consciousness. Firms will consider the reactions of other firms before making its decisions. With this interdependence, firms may find their pricing decisions resulting in price rigidity in the market. This can be represented with the kinked demand curve model.

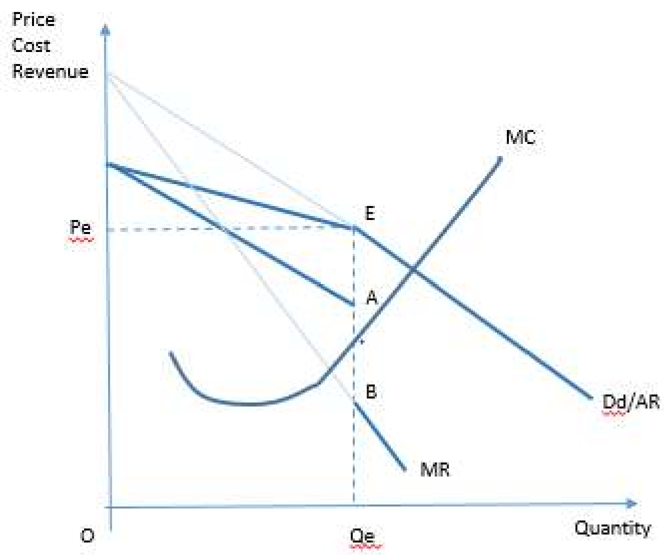


Figure 1: Kinked Demand Curve

Assuming an initial market equilibrium price is Pe, if a firm raises its price above Pe, rival firms will not follow as customers will now increase demand for their goods since they have become relatively cheaper. This firm will lose substantial amount in sales and experience a fall in its revenue. Its demand curve is thus price elastic above Pe.

If a firm lowers price below Pe, rival firms would quickly follow the price cut as they would want to prevent loss of sales and protect their market share. Unable to lure customers away from rivals, this firm would experience changes in its sales. Its demand curve would thus be price inelastic below Pe, experiencing a fall in revenue with a reduction in price.

As both unilateral raising and lowering of price leads to losses in revenue, an oligopolist would avoid price changes as it takes into account its rivals' likely responses. There is thus generally price stability (or price rigidity) at the prevailing price Pe.

Oligopolistic firms however, tend to compete on the basis of non-price competition like advertising, promotions and innovation given their ability to do so due to the large supernormal profits earned. Even so, firms would be responsive to such actions by their rivals as it would negatively impact the firm's demand eg, in a typical petrol-retailing industry in S'pore, where non-price competition prevails. Non-price competition can even be in the form of product innovation or even R&D eg, each petrol company has claimed that their fuel is unique - Shell claims to offer more mileage, while Caltex claims that its fuel keeps engines very clean, etc.

Even collusion sees mutual interdependence as the key to its success eg, SingTel being most established may be able to predict global market trends better than StarHub or M1. If SingTel decides to go beyond 5G technology, Star hub and M1 would follow suit even if they still lack info regarding the future trends but take the cue from SingTel. A form of tacit collusion, where SingTel acts and others follow, also known as the barometric firm leading the market.

Mergers and acquisitions may also sometimes be used as a strategy to expand market share by gaining an edge over rival firms such as through reaping economies of scale.

2: The behaviour of firms does not always depend on the actions of their rivals

However, not all firms' react based on their competitors' actions eg, under monopolistic competition, each firm is able to set pricing and output decision without regard to its competitors' actions. Monopolistic competition, due to the large number of small firms and hence the small market share of each firm, the actions of one firm do not affect and are not affected by the actions of the other firms in the market, and this means that there is no strategic interdependence. When the firm changes its price, it will not have any significant effect on the other firms in the market. The rival firms will hence not react by changing their prices. Therefore, it need not take into consideration the reactions of the other firms in the market and does not depend on the behaviour of competitors. For example, if a chicken rice stall reduces the price of its dishes, the reduction in the price will not have any significant effect on other stalls which will not prompt them to react. Therefore, the stall does not need to consider the reactions of other stalls. However, in reality, a monopolistically competitive firm may have the incentive to be aware of its rivals' actions eg, if the outlet's proximity are close enough with a rival's and are substitutable, then one's behaviours will tend to depend on the other's actions. This is because each firm has its own demand curve, and the products and services are differentiated from one another.

3: Government intervention

Firms may also be subjected to government intervention measures in the industry. Their behaviour may be affected by government regulations rather than as a responds action to their rivals' actions eg, the governments may apply anti-trust laws to disallow mergers and acquisitions that firms may wish to undertake to reduce the concentration of market power. Alternatively, governments may choose to nationalise firms so as to take over production directly. The government would thus set the price and output behaviour of the firm, which may deviate from the profit-maximising levels to welfare maximizing levels. Such government intervention may be carried out with the aims of improving allocative efficiency or equity.

Body 4: The behavior of firms does not dependent on rival's actions but on other factors

a. Alternative objectives of the firms – firms having objectives of output maximization (AR=AC), revenue maximization (MR=0), welfare maximization (P=MC), growth maximisation…would not be affected or bothered by the actions of their rivals as achieving their objective takes greater priority.
b. Price discrimination – can only take place under specific conditions and the firm has a high degree of monopoly power thus its actions will not be affected by rivals in any way as the product involved is distinct and unique with no substitutes.
c. Changes in market demand – firms facing changes in market demand would be more concerned with their individual firm's ability to cope with the changes rather than with their rivals' actions. They would however want to look at their rivals' actions after they have made their necessary adjustments.
d. Entry deterrence – the larger the amount spent by the firm on entry deterrence, the lower the dependence on rival actions. When rivals are deterred entry, there would not be a need for the firm to bother about rivals' actions as there would be no rivals.

<u>Conclusion</u>

The actions of their rivals would likely be the main factor affecting the behavior of firms. This is because the degree of rivalry if likely to be high, given the close substitutability of the goods or services provided by the different firms as perceived by its consumers.

Furthermore, there is a low likelihood of potential entrants overcoming the high barriers to entry for the industry if it has high start-up costs. The likelihood of government intervention in a market is low, when the market appears to be sufficiently competitive between the major players and the nature of the service does not warrant strong equity considerations.

Level	**Descriptors**	**Marks**
L3	Developed explanation with examples of how firms under different market structures may or may not react to their rivals' decisions.	8-10
L2	Undeveloped explanation that compares different market structure's reaction to rivals.	5-7
L1	A general discussion of the behaviour of firms to their rival's actions.	1-4
E3	A detailed analysis of the determination of factors of firms behaviour with a ranking of the determinants	4 - 5
E2	A detailed judgement made with sound analysis and real world behaviour of firms.	2 - 3
E1	A judgement that is not substantiated by analysis	1