TOPIC 1.3

Different Market Structures
Growth and Survival of Firms
Differing Objectives of a Firm

MCQ Section

1. The table shows some of the assumptions of perfect competition and monopolistic competition.

Which pairing is correct?

	perfect competition	monopolistic competition
A	barriers to entry	small number of firms
B	differentiated products	large number of firms
C	freedom of entry and exit	differentiated products
D	large number of firms	barriers to entry

[J08/P3/Q9]

2. A perfectly competitive industry becomes a profit-maximising monopoly.

The marginal cost curve of the monopolist is identical to the supply curve of the perfectly competitive industry.

How will output and price be affected?

	output	price
A	increases	increases
B	increases	decreases
C	decreases	decreases
D	decreases	increases

[J08/P3/Q10]

3. Why might a firm introduce a policy of price discrimination?

A to achieve allocative efficiency

B to achieve productive efficiency

C to avoid diseconomies of scale

D to turn consumer surplus into producer surplus

[J08/P3/Q11]

4. Which feature does a contestable market share with a perfectly competitive market?

A Firms must be price takers.

B Firms must operate on a small scale.

C There must be freedom of entry to and exit from the industry.

D There must be many firms in the industry.

[N08/P3/Q9]

5. Which characteristic would make it easier for firms in an industry to collude?

A low barriers to entry

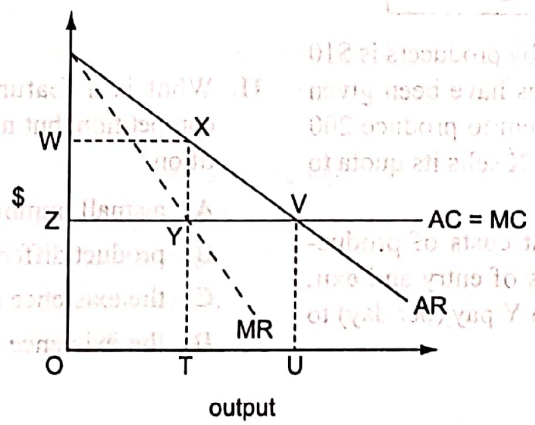
B a large number of firms

C rapid technological-change

D product homogeneity

[N08/P3/Q10]

6. The diagram shows the cost and revenue curves of a profit-maximising monopolist. The monopolist's average cost curve is identical to the long-run supply curve which would exist if the industry was perfectly competitive.



HELPS to MCQ

1. **C** Basic assumptions

2. **D** Monopolist charges higher price and sells lower quantity than perfectly competitive market.

3. **D** By charging higher price from specific group of customers firms appropriate consumer surplus.

4. **C** Both perfectly competitive market and contestable market share the feature of free entry and exit. Options **A** and **D** are true in perfect competition but not required in a contestable market. Option **B** is irrelevant.

5. **D** Options **A**, **B** and **C** would make it difficult for firms to collude.

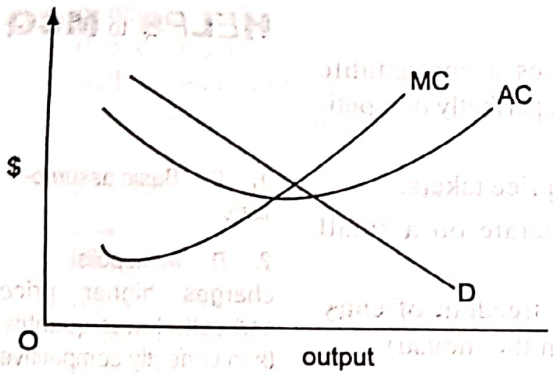
6. **C** In this case deadweight loss is the waste of consumer surplus i.e. triangle XYV. This is so because monopolist charges a higher price (0W) and sells lower quantity (OT).

Which area shows the deadweight loss resulting from this monopoly situation?

A WXYZ B WXVZ
C XVY D XVUT

[N08/P3/Q11]

7. The diagram shows the demand and cost curves of a monopolist who initially produces at the profit-maximising level of output.



The monopolist is required by the government to adopt marginal cost pricing.
What will be the effect on the price charged and the output produced?

	price	output
A	increase	increase
B	increase	decrease
C	decrease	increase
D	decrease	decrease

[N08/P3/Q12]

8. The table shows the costs of two milk producers.

	costs per litre
firm X	$9
firm Y	$7

The price received by producers is $10 per litre. Both firms have been given quotas allowing them to produce 200 litres per day. Firm X sells its quota to firm Y.

Assuming constant costs of production and zero costs of entry and exit, what price did firm Y pay (per day) to buy X's quota?

A $200
B $600
C $700
D between $200 and $600

[N08/P3/Q13]

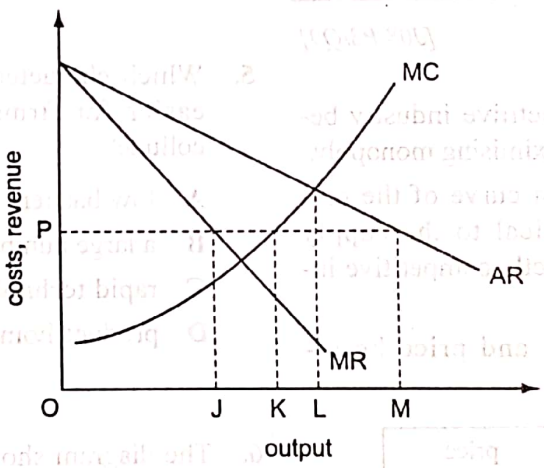
9. A firm estimates that, all else remaining unchanged, an increase in its output will result in an equal proportionate increase in its **revenue**.

What can be deduced from this about the price elasticity of demand for the firm's product?

A It is –1.
B It is +1.
C It is perfectly inelastic.
D It is perfectly elastic.

[J09/P3/Q7]

10. The diagram shows the initial cost and revenue curves of a profit-maximising monopolist.



What output will the firm produce if the government fixes the price at OP?

A OJ B OK
C OL D OM

[J09/P3/Q8]

11. What is a feature of monopolistic competition, but **not** of perfect competition?

A a small number of buyers
B product differentiation
C the existence of abnormal profits
D the existence of barriers to entry

[J09/P3/Q9]

HELPS to MCQ

7. **C** Marginal cost pricing is where P = MC, Profit maximizing output is where MC = MR.
We need to draw MR and then locate the two equations and identify the resulting changes in both price and output.

8. **D** Profit earned by firm X from selling quota in the market is $200, ($1 X 200 = 200). The firm will be tempted to sell its quota if it is offered a greater amount than what it expects to earn from the market i.e, > 200. Firm Y will be able to add profits if it buys firm X's quota for < $600.

9. **D** Equal proportionate increase in TR suggests that the firm is price taker and faces a perfectly elastic demand curve.

10. **B** Price fixed by the government at OP changes firm's MR. In order to derive new MR curve we draw a horizontal line from the price up to the AR curve and locate the profit maximizing output on x-axis from the point where MC = MR.

11. **B** Product homogeneity is an essential feature of a perfectly competitive market.
Options **A** and **D** relate none of the two markets, whereas option **C** is true for both types of markets in the short run.

12. Which assumption is essential for a market to be contestable?

A The market is supplied by a large number of firms.

B Firms are free to enter and leave the market.

C Firms cannot earn abnormal profits in the short run.

D Firms produce differentiated goods.

[J09/P3/Q10]

13. In which circumstance will a firm cease production in the short run?

A It makes a profit that is less than its total variable costs.

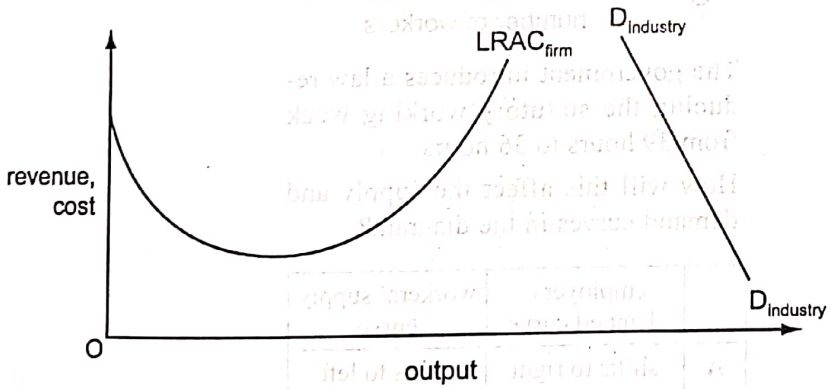
B It makes a profit that is less than its total fixed costs.

C Its average revenue is less than its average cost.

D Its average revenue is less than its average variable cost.

[J09/P3/Q12]

14. The diagram shows the long-run average cost curve of a typical firm in an industry and the demand curve for the industry's product.



Which market structure is most likely to occur in this industry?

A monopolistic competition

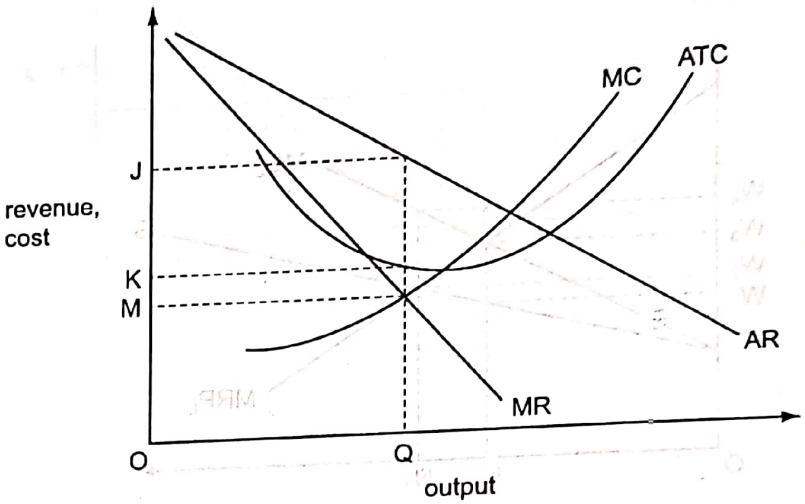
B monopoly

C oligopoly

D perfect competition

[J09/P3/Q11]

15. The diagram shows the cost and revenue curves of a profit-maximising monopolist.



What measures the monopoly profit per unit of output made by the firm?

A JM

B JK

C JM × OQ

D JK × OQ

[J09/P3/Q13]

16. What could cause a perfectly competitive firm's marginal revenue product of labour curve to shift to the right?

A an increase in wages

B a higher rate of sales tax

C an increase in labour supply

D a rise in the price of the final product

[N09/P3/Q4]

12. B A contestable market is characterized by 'costless entry and exit'. Options **A**, **C** and **D** are not required for a market to become contestable.

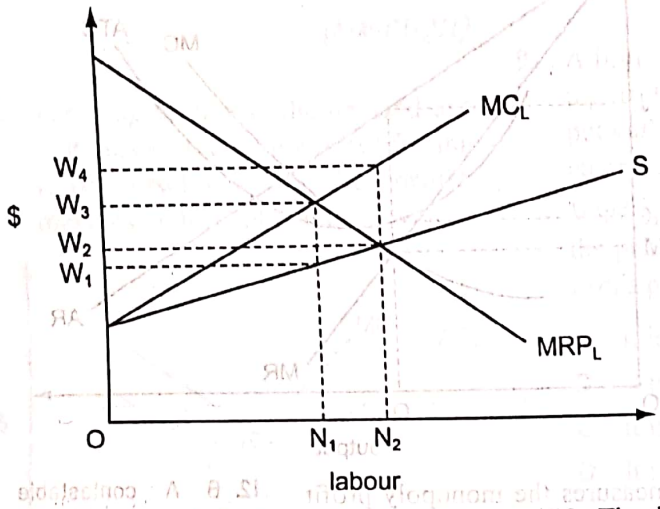
13. D In the short run a profit maximizing firm continues to produce as long as AR>AVC and ceases production only when it incurs loss on variable cost (AR<AVC).

14. C The graph indicates that the firm in question is large relative to the size of industry but there is room for other firms too.

15. B At profit maximising output OQ, the difference between ATC and AR is the profit per unit.

16. D MRPL = MPPL × MR. An increase in either marginal physical product of labour or marginal revenue of the product would shift MRP of labour curve to the right. Options **A** and **C** result in a movement along the MRPL curve, whereas option **B** is likely to shift MRPL curve to the left.

17. In the diagram, MRP_L is a firm's marginal revenue product of labour curve, S is its supply of labour curve, and MC_L its marginal cost of labour curve.



Assuming profit maximisation, how many workers will the firm employ and what wage will it pay?

	number employed	wage
A	N_1	W_3
B	N_1	W_1
C	N_2	W_2
D	N_2	W_4

[N09/P3/Q5]

18. What is an example of a wage differential that compensates for the disadvantages associated with particular jobs?

A male workers earning more than female workers in the same job

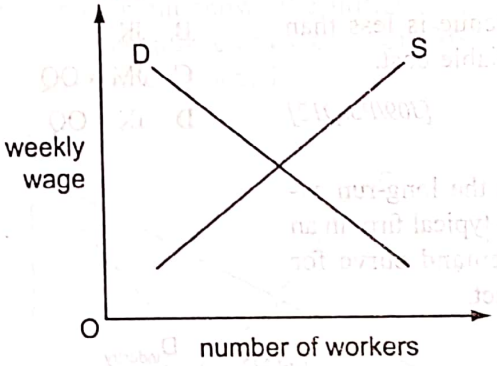
B the tendency for wage rates negotiated by trade unions to exceed those for non-unionised labour

C labourers on off-shore oil rigs earning more than those employed on-shore

D government office workers being paid more than private sector office workers

[N09/P3/Q6]

19. The diagram shows the initial position of a labour market.



The government introduces a law reducing the statutory working week from 39 hours to 36 hours.

How will this affect the supply and demand curves in the diagram?

	employers' demand curve	workers' supply curve
A	shifts to right	shifts to left
B	shifts to right	shifts to right
C	shifts to left	shifts to left
D	shifts to left	shifts to right

[N09/P3/Q7]

HELPS to MCQ

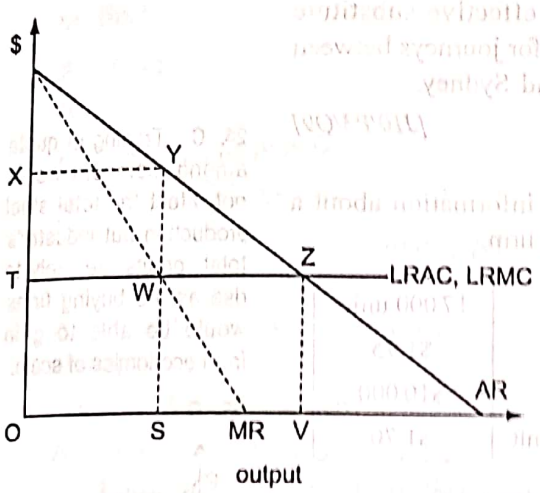
17. B A profit maximizing firm employs workers where MRPL = MCL, and the wage rate for workers employed is indicated by the supply curve.

18. C Labourers on off-shore oil rigs earning more due to the disadvantage associated with the job. In other options wage differential is not associated with the job.

19. D A reduction in the statutory working week is likely to decrease MPPL thus decreases MRPL and demand for labour. Less number of working hours will encourage more workers to seek work hence increases supply of labour.

HELPS to MCQ

20. The diagram shows an industry producing under conditions of constant average costs.



Under perfect competition, the industry produces output OV.

Which area measures the loss in consumer surplus if it were to become a monopoly?

A YWZ
B XYWT
C XYZT
D SYZV

[N09/P3/Q9]

21. The price elasticity of demand for a firm's product is zero.

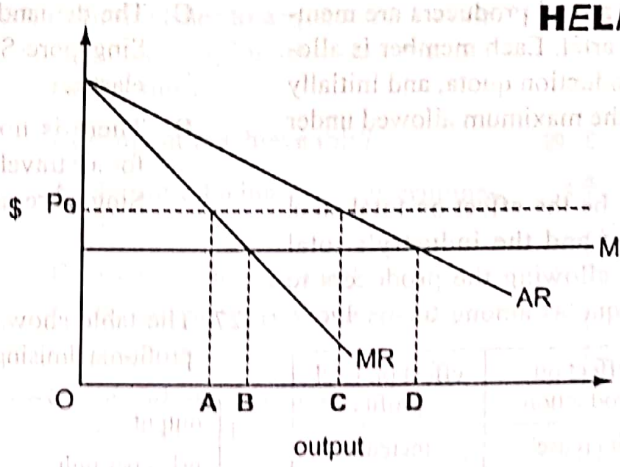
What will be the effect on the firm's revenue if it increases its price by 5 %?

A Its revenue will be unchanged.
B Its revenue will increase by 5 %.
C Its revenue will decrease by 5 %.
D Its revenue will fall to zero.

[N09/P3/Q10]

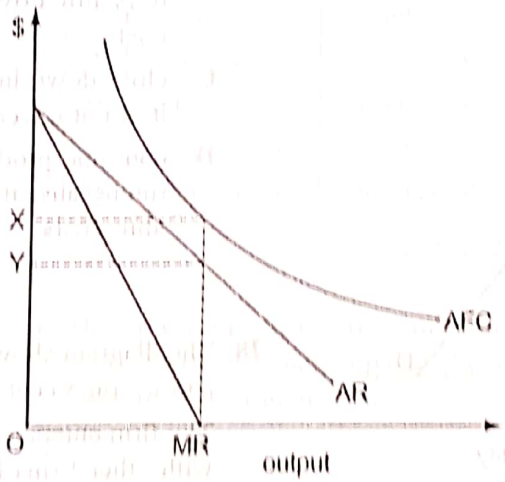
22. The diagram shows the short-run position of a monopolist who believes that, in the long run, excessive profits might attract new entrants to the industry.

If the monopolist believes that at prices above Pe new competitors would enter, which output would he choose to protect his long-run profits?



[N09/P3/Q11]

23. The diagram shows the cost and revenue curves of a monopoly producer whose only cost of production is a fixed cost.



What will such a monopolist do?

A set a price of OX in the short run and the long run
B set a price of OY in the short run and the long run
C set a price of OX in the short run, but discontinue production in the long run
D set a price of OY in the short run, but discontinue production in the long run

[N09/P3/Q12]

20. C Profit maximizing monopolist would produce OS output and would sell this at OX. As a result consumer surplus falls by XYZT.

21. B TR = P X Q, thus a 5% increase in price with Q remaining unchanged will lead to 5% increase in TR.

22. C At price Pe the monopolist would be able to sell OC output.

23. D The monopolist incurs loss at all output levels, but in the short run, at least, he would be prepared to produce the level of output that minimizes loss i.e. where MR = 0, however loss cannot be incurred in the long run therefore he would discontinue production.

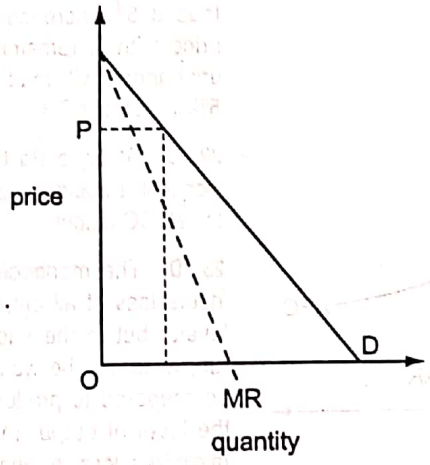
24. A country's steel producers are members of a cartel. Each member is allocated a production quota, and initially produces the maximum allowed under its quota.

What will be the effect on total steel production and the industry's total profits of allowing the producers to trade the quotas among themselves?

	effect on production	effect on total profits
A	increase	increase
B	increase	no change
C	no change	increase
D	no change	no change

[N09/P3/Q13]

25. The diagram shows a firm's demand curve and its marginal revenue curve.



What is the approximate price elasticity of demand at price OP?

A 0.25 B 0.5
C 1 D 2

[J10/P3/Q8]

26. In the absence of regulation, why is it likely that the market for air travel on the Singapore-Sydney route would be highly contestable?

A An airline entering the market would lose little if it later exited that market.

B The airline industry's capacity to expand its operations in the short-run is limited.

C The demand for air travel on the Singapore-Sydney route is price-elastic.

D There is no effective substitute for air travel for journeys between Singapore and Sydney.

[J10/P3/Q9]

27. The table shows information about a profit-maximising firm.

output	17 000 units
price per unit	$1.75
fixed costs	$10 000
variable costs per unit	$1.70

What should the firm do?

A close down immediately because it is not covering its fixed costs

B close down immediately because it is not covering its average costs

C close down immediately because it is not covering its total costs

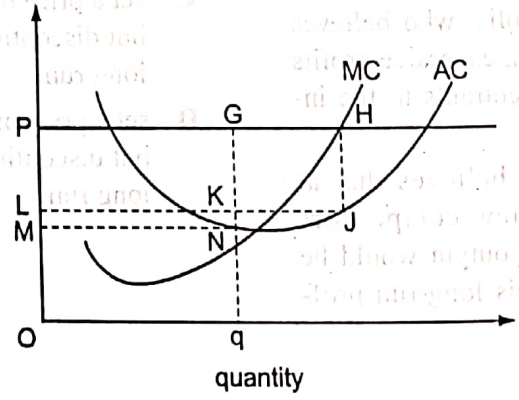
D continue production in the short run because it is covering its variable costs

[J10/P3/Q10]

28. The diagram shows a firm's marginal and average cost curves.

The firm enters a collusive agreement with other firms in the industry. It is agreed that each firm will charge a common price, OP, and will restrict the level of its output to a production quota set by the industry cartel.

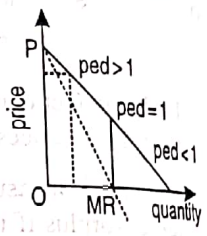
The firm is allocated a production quota, Oq.



HELPS to MCQ

24. C Trading of quota among members would not affect the total steel production but industry's total profits are likely to rise as the buying firms would be able to gain from economies of scale.

25. D



26. A Ease of exit is a distinguishing feature of a contestable market.

27. D Price per unit < ATC, but the price per unit > AVC, thus firm must continue production in the short run.

28. C Profit maximizing level of output is where firm's MC = MR. (in this case P = MR). Total profit at output where MC = MR is PHJL. Total profit at output Oq is PGNM.

The firm decides to cheat in order to maximise its profits.

What is its short-run increase in profits?

A PGKL
B PHJL
C PHJL minus PGNM
D PGKL minus LKNM

[J10/P3/Q11]

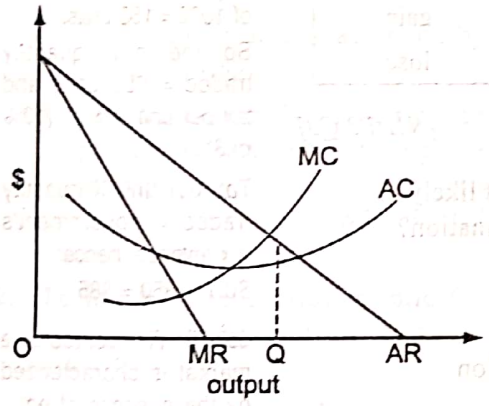
29. A competitive market becomes a monopoly.

What is likely to happen?

A Consumer surplus will be reduced by the amount of the deadweight loss.
B Producer surplus will be reduced by the amount of the deadweight loss.
C The loss in consumer surplus will be balanced by the increase in producer surplus.
D There will be a transfer of surplus from consumer to producer.

[J10/P3/Q12]

30. The diagram shows a firm's cost and revenue curves.



What could explain why the firm produces output OQ?

A It is operating in a contestable market.
B It is operating in a perfectly competitive market.
C It is seeking to maximise profits.
D It is seeking to maximise sales revenue.

[N10/P3/Q9]

31. A firm wishes to acquire some of the consumer surplus its customers currently enjoy.

How might it achieve this?

A by introducing price discrimination
B by reducing operating costs
C by setting a price that maximises revenue
D by taking advantage of economies of scale

[N10/P3/Q10]

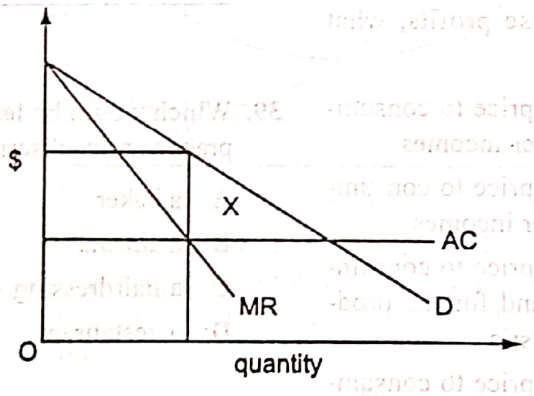
32. A perfectly competitive firm finds that at its current level of output, marginal revenue is $2.00 and marginal cost is $2.50.

If the firm is a profit maximiser, what will happen to its price and output?

	price	output
A	increases	decreases
B	increases	unchanged
C	unchanged	decreases
D	unchanged	unchanged

[N10/P3/Q11]

33. The diagram shows the outcome when a perfectly competitive market is taken over by a monopoly.



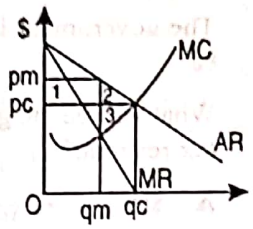
What does area X represent?

A monopoly profit
B the reduction in consumer surplus
C the resulting deadweight loss
D transfer earnings

[N10/P3/Q12]

HELPS to MCQ

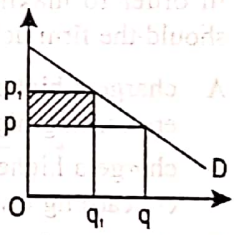
29. D



Price of the product is likely to increase from pc to pm resulting in a fall in consumer surplus by the area 1 & 2. Rectangle 1 shows transfer of consumer surplus to producers, while triangle 2 is part of deadweight loss, hence options A, B & C are incorrect.

30. A A perfectly competitive firm faces infinite elastic demand curve hence option B is incorrect. Also the output is higher than the profit or revenue maximizing output hence C and D are incorrect. In a contestable market the existing firm earns just enough profit that deters the entry of new firms.

31. A



Firm can acquire consumer surplus measured by the shaded area by selling its output at two different prices to different groups of consumers.

34. A product with infinite elasticity of supply has sales of 1000 units a week at a price of $1 per unit. Price elasticity of demand is 1.5 over the relevant range.

The government imposes a tax of 10 %.

What will be the government's weekly tax revenue?

A $15 **B** $85
C $100 **D** $150

[J11/P3/Q7]

35. What is the likely outcome for producers and consumers when a market moves from being non-contestable to being a contestable market?

	producers	consumers
A	gain from higher prices	gain from a wider choice of products
B	gain from likely higher profits	lose from likely higher prices
C	lose from likely lower output	lose from a reduced choice of products
D	lose from likely lower profits	gain from likely lower prices

[J11/P3/Q8]

36. A firm is engaging in price discrimination.

In order to maximise profits, what should the firm do?

A charge a higher price to consumers earning higher incomes
B charge a higher price to consumers earning lower incomes
C charge a higher price to consumers whose demand for the product is price inelastic
D charge a higher price to consumers whose demand for the product is price elastic

[J11/P3/Q9]

37. A government imposes a maximum price for electricity.

Which statement justifying this measure might be considered valid on economic grounds?

A It will encourage electricity suppliers to invest in additional capacity.
B It will increase the incentive for consumers to conserve energy.
C It will prevent the monopolistic exploitation of consumers.
D It will prevent the rationing of electricity through power cuts.

[J11/P3/Q11]

38. To prevent a surplus of milk, each milk producer is given a production quota which specifies the volume of milk he is allowed to supply.

Initially the quotas are not tradable, but then trade in quotas is allowed.

Who would gain or lose when trade in quotas takes place?

	purchasers of quotas	sellers of quotas
A	gain	gain
B	gain	lose
C	lose	gain
D	lose	lose

[N11/P3/Q3]

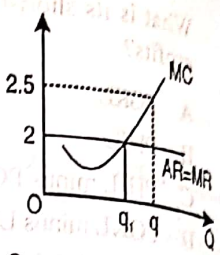
39. Which would be **least** likely to practise price discrimination?

A a baker
B a cinema
C a hairdressing salon
D a restaurant

[N11/P3/Q10]

HELPS to MCQ

32. C



Currently firm's MC>MR whereas profit is maximized at MC = MR. Thus output must decrease. A perfectly competitive firm is price taker hence cannot change the price.

33. C Area X in the graph represents waste of consumer surplus due to a fall in output.

34. B A 10% tax will increase the price by 10% because when supply is infinite elastic price rises by the amount of tax.

$$PED = \frac{\%\text{ change in QD}}{\%\text{ change in price}}$$

$$\text{So, } -1.5 = \frac{X\%}{10\%}$$

Thus X = 15% i.e. QD falls by 15%. And 15% of 1000 = 150 units.

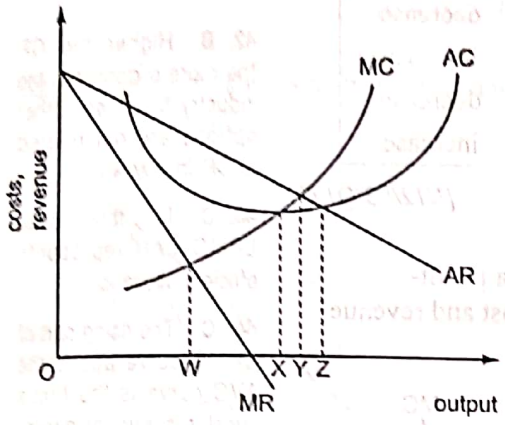
So the new quantity traded = 850 units and tax per unit is $0.1 (10% of $1)

Tax per unit X quantity traded = government's tax revenue, hence:

$0.1 × 850 = $85

35. D A contestable market is characterized by the absence of entry & exit barriers. Therefore, producers are likely to lose because they will have to reduce their prices to deter other firms from entering the industry making consumers to gain.

40. The diagram shows the cost and revenue curves of a monopoly.



Which movement between levels of output would indicate a wish to change from unit cost minimisation to earning a normal profit?

A W to Y
B W to Z
C X to W
D X to Z

[N11/P3/Q11]

41. What will increase the likelihood that the firms in an industry will collude to maximise their joint profits?

A The industry consists of a large number of producers.
B The industry has many differentiated products.
C The industry is characterised by rapid technological change.
D There are significant barriers to prevent new firms entering the industry.

[N11/P3/Q12]

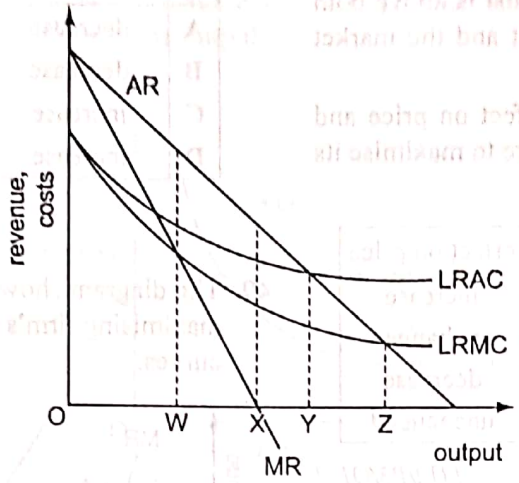
42. The five firm concentration ratio for an industry changes from 50 % to 60%.

Which statement about the industry is correct?

A Each firm has become more efficient.
B The industry has become more oligopolistic.
C The industry has benefited from external economies of scale.
D The industry now has fewer barriers to entry.

[J12/P3/Q10]

43. The diagram shows the long-run cost and revenue curves of a monopolist.

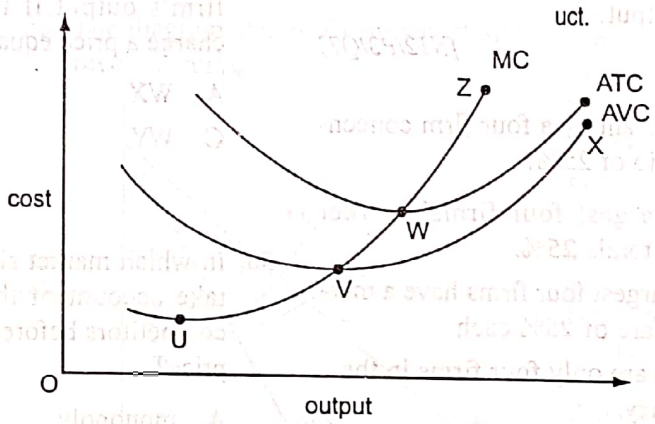


Which level of output satisfies the condition for an efficient allocation of resources?

A OW
B OX
C OY
D OZ

[J12/P3/Q16]

44. The diagram shows the cost curves of a firm in a perfectly competitive market.



Which segment of a curve shows the quantity that the firm would be willing to supply to the market in the short-run?

A VX
B UZ
C VZ
D WZ

[J12/P3/Q11]

HELPS to MCQ

36. C A higher price to consumer whose demand for the product is inelastic will increase the firm's revenue and profits. This rules out option D while A & B are irrelevant in the context of maximum profits .

37. C The firm with monopolistic power tends to exploit consumer by charging a higher price. Options A & B are contrary to the likely impact while D is irrelevant.

38. A Purchasers of quota gain by producing and selling additional quantity of milk while sellers gain from selling any unused amount of quota which otherwise would be wasted.

39. A Out of the four businesses, baker is least likely to charge different prices for the same product.

40. D Lowest per unit cost is at OX output, while normal profit is at OZ, i.e. AC = AR.

41. D Significant barriers would help collusion to charge a higher price without a fear of losing market share to the new entrants. Other options would clearly make it difficult to form collusion.

45. A perfectly competitive firm is currently producing at a level of output where its marginal cost is above both its average total cost and the market price.

What will be the effect on price and output if the firm were to maximise its profit?

	effect on output	effect on price
A	decrease	increase
B	decrease	unchanged
C	increase	decrease
D	increase	unchanged

[J12/P3/Q12]

46. What would be the effect of imposing a specific tax on each item produced by a profit maximising monopolist?

A Average revenue falls by the amount of the tax.

B Marginal costs rise by the amount of the tax.

C Price increases by the amount of the tax.

D There will be no change in price or output.

[N12/P3/Q7]

47. What is meant by a four firm concentration ratio of 25%?

A The largest four firms' market share totals 25%.

B The largest four firms have a market share of 25% each.

C There are only four firms in the industry.

D The largest firm has a 25% market share.

[N12/P3/Q11]

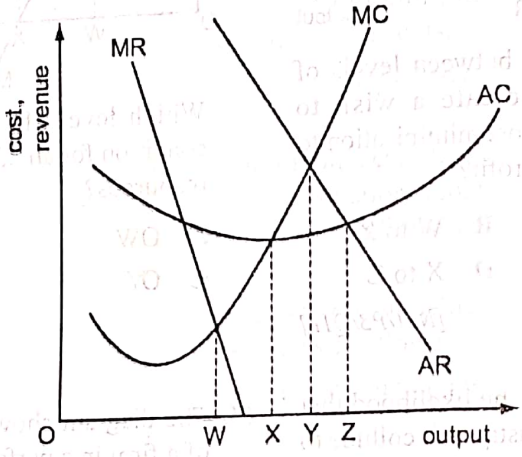
48. Instead of charging all its customers the same price, a firm decides to charge different prices in different markets.

How is this likely to affect consumer surplus and the firm's marketing costs?

	consumer surplus	marketing costs
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

[N12/P3/Q12]

49. The diagram shows a profit-maximising firm's cost and revenue curves.



What would be the increase in the firm's output if it was required to charge a price equal to marginal cost?

A WX B XY

C WY D XZ

[N12/P3/Q13]

50. In which market situation will a firm take account of the reactions of its competitors before deciding to cut its price?

A monopoly

B monopolistic competition

C oligopoly

D perfect competition

[J13/P3/Q1]

51. The demand for a firm's product is perfectly inelastic.

What will be the effect on the firm's revenue if it increases its price by 5%?

A Its revenue will be unchanged.

B Its revenue will increase by 5%.

HELPS to MCQ

42. **B** Higher the CR the more oligopolistic the industry becomes. Other options are not related to CR in any way.

43. **D** In this case LRMC = AR represents efficient allocation.

44. **C** The rising part of SRMC curve above the AVC curve is the firm's short run supply curve. Firm does not supply if the price falls below the lowest point of AVC curve.

45. **B** Currently the firm is producing beyond its MC = MR. Therefore output must decrease however, the firm cannot affect market price because all firms are price takers in a perfectly competitive industry.

46. **B** A tax on output increases MC by the amount of per unit tax, but P rises by less than the amount of tax and output decreases, thus A, C & D are incorrect.

47. **A** $CR = \frac{\text{sales of top 4 firms}}{\text{total sales of industry}} \times 100$

CR measures the percentage of market share held by top few firms.

48. **B** Price discrimination shifts CS to the firm, thus CS decreases, however firm will have to spend more on marketing its product in different markets.

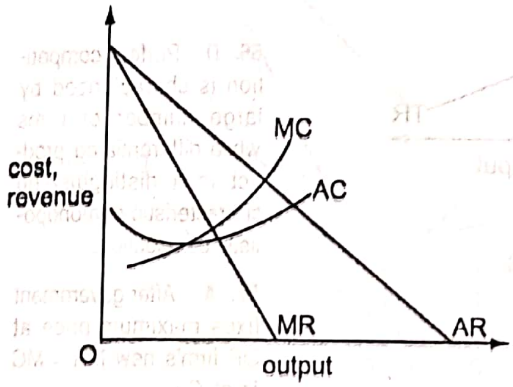
49. **C** Profit maximizing output = OW, (where firm's MC=MR). However MC pricing requires the firm to produce where its MC = AR.

C Its revenue will decrease by 5%.

D Its revenue will fall to zero.

[J13/P3/Q10]

52. The diagram shows a firm's cost and revenue curves.



The firm changes its objective from sales revenue maximisation to profit maximisation.

Which groups are most likely to be winners and losers as a result of this change?

	winners	losers
A	customers	managers
B	managers	workers
C	workers	shareholders
D	shareholders	customers

[J13/P3/Q11]

53. Which change would make it easier for a cartel to operate effectively?

A an increase in competition from closely related industries

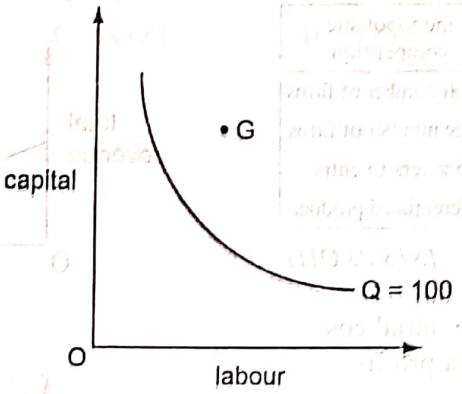
B an increase in the number of firms in the industry

C an increase in the range of products made by cartel members

D an increase in the stability of the market for its products

[J13/P3/Q13]

54. The curve in the diagram shows the minimum combinations of capital and labour that are needed to produce 100 units of output.



A firm's management hires the combination of capital and labour indicated by point G in the diagram to produce 100 units of output.

Which term best describes this situation?

A lack of specialisation

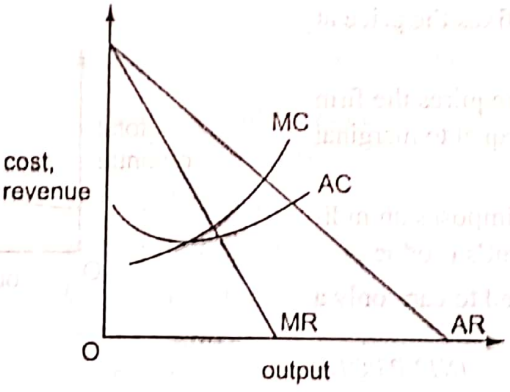
B managerial diseconomy

C market failure

D X-inefficiency

[J13/P3/Q14]

55. The diagram shows a firm's cost and revenue curves.



The firm changes its objective from profit maximisation to sales revenue maximisation.

Which groups are likely to be winners and losers as a result of this change?

	winners	losers
A	customers	shareholders
B	managers	customers
C	workers	managers
D	shareholders	workers

[N13/P3/Q10]

HELPS to MCQ

50. C In an oligopolistic market a higher degree of interdependence forces the firms to take account of reactions of rival firms.

51. B P × Q = TR, thus a 5% increase in P with Q remaining unchanged will increase TR by 5%.

52. D MC = MR (Profit maximization) implies higher price than MR = 0 (revenue maximization). Thus higher price benefits owners (shareholders).

53. D Options A, B & C will weaken the cartel while stability of market will favour it.

54. D Point G lies above the minimum quantities of capital and labour required to produce 100 units of output, therefore, indicates X inefficiency. Options A & B are related to the costs while C is irrelevant.

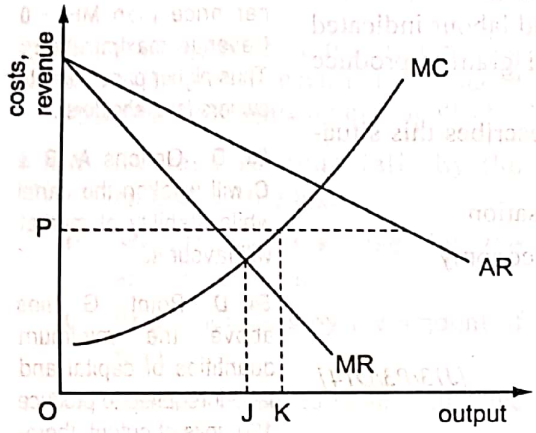
55. A Diagram suggests that profit maximizing price (MC = MR) is higher than sales revenue maximizing price (MR = 0). Therefore customers gain from lower price and shareholders lose from the resulting lower profit .

56. The table shows some of the assumptions of perfect competition and monopolistic competition. Which pairing is correct?

	perfect competition	monopolistic competition
A	barriers to entry	small number of firms
B	differentiated products	large number of firms
C	freedom of entry and exit	barriers to entry
D	large number of firms	differentiated products

[N13/P3/Q11]

57. The diagram shows the initial cost and revenue curves of a profit-maximising monopolist.



What would cause the firm to increase its output from OJ to OK?

A The government fixes the price at OP.

B The government requires the firm to charge a price equal to marginal cost.

C The government imposes an indirect tax on the firm's product.

D The firm is allowed to earn only a normal profit.

[N13/P3/Q12]

58. What makes it most likely that a firm's profits will be volatile and subject to substantial fluctuations?

A Fixed costs are a high percentage of total costs.

B It produces a diversified range of products.

C It produces basic consumer products.

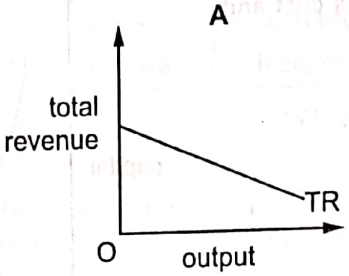
D It sells its product in a number of different markets.

[N13/P3/Q13]

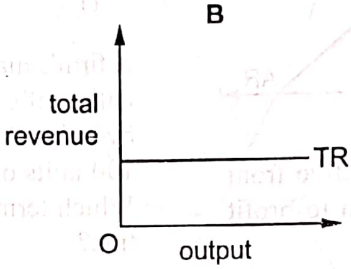
59. A monopolist faces a downward-sloping straight-line demand curve.

Which diagram shows his total revenue curve (TR)?

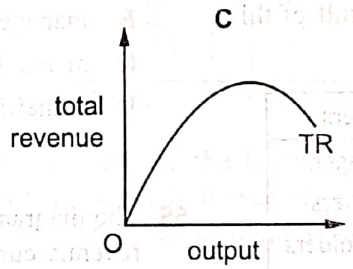
A



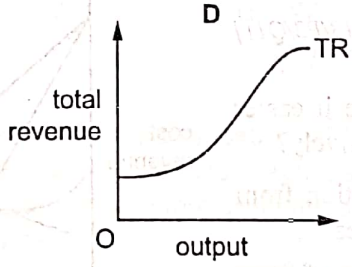
B



C



D



[J14/P3/Q11]

HELPS to MCQ

56. D Perfect competition is characterized by large number of firms while differentiated product is a distinguishing characteristic of monopolistic competition.

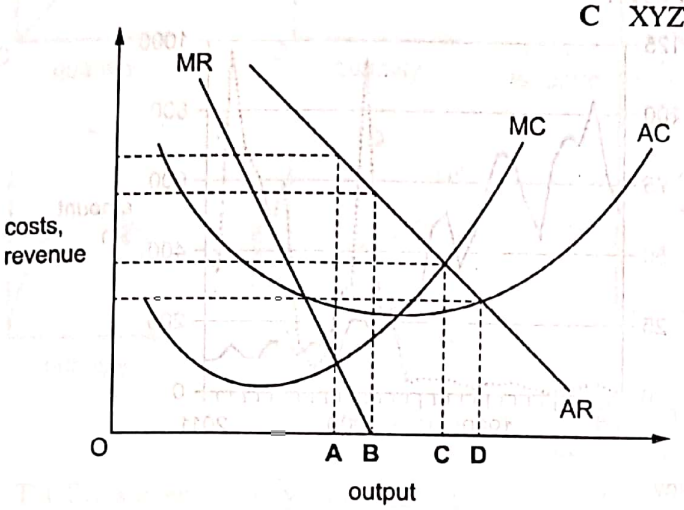
57. A After government fixes maximum price at OP firm's new MR = MC is at OK.

58. A Fluctuations in output will have more impact on firm's TR than its TC.

59. C As we move downward along a straight line demand curve, TR on the upper half rises and on the lower half falls.

60. The diagram shows the cost and revenue curves of a monopolist.

Which output will the firm produce if its aim is to maximise sales revenue?



[J14/P3/Q12]

61. The price elasticity of demand for a firm's product is zero.

What will be the effect on the firm's revenue if it reduces its price by 5%?

A Its revenue will be unchanged.

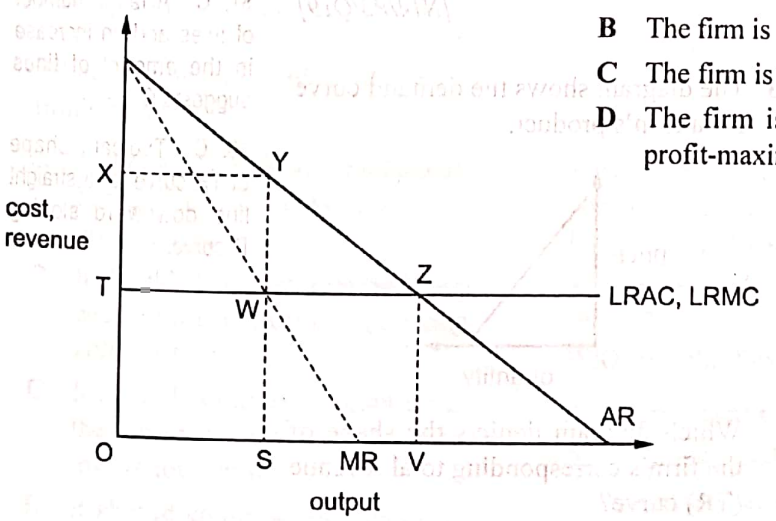
B Its revenue will decrease by 5%.

C Its revenue will increase by 5%.

D Its revenue will fall to zero.

[N14/P3/Q10]

62. The diagram shows an industry producing under conditions of constant average costs.



Under perfect competition, the industry produces output OV.

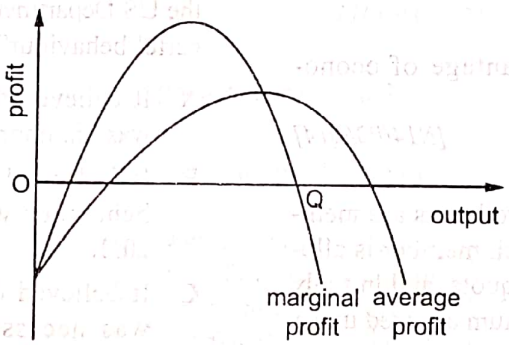
Which area measures the increase in the industry's profits if it were to become a monopoly?

A XYSO **B** XYWT

C XYZT **D** YZW

[N14/P3/Q11]

63. The diagram shows how a firm's average profit and marginal profit vary at differing levels of output.



If the firm produces output OQ, which statement is correct?

A The firm is earning a zero profit.

B The firm is making a normal profit.

C The firm is maximising its profit.

D The firm is producing above its profit-maximising output.

[N14/P3/Q13]

HELPS to MCQ

60. B MR = 0

61. B P × Q = TR. So, when PED = 0, a 5% reduction in P will leave Q unchanged hence resulting in a 5% fall in firm's revenue.

62. B Monopolist will produce OS (where LRMC = MR) and will charge a price OX. Thus the difference between price (OX) and average cost (OT) multiplied by OS = XYWT

63. C When MP = 0, TP is maximized.

64. When is collusion likely to be successful in an oligopolistic market?

A Barriers to entry are relatively low.

B Firms have accurate information about each other's output levels.

C There are significant differences in the firms' costs of production.

D There are significant fluctuations in demand from one period to another.

[N14/P3/Q12]

65. A firm wishes to acquire some of the consumer surplus its customers currently enjoy.

How might it achieve this?

A by introducing price discrimination

B by reducing operating costs

C by setting a price that maximises revenue

D by taking advantage of economies of scale

[N14/P3/Q14]

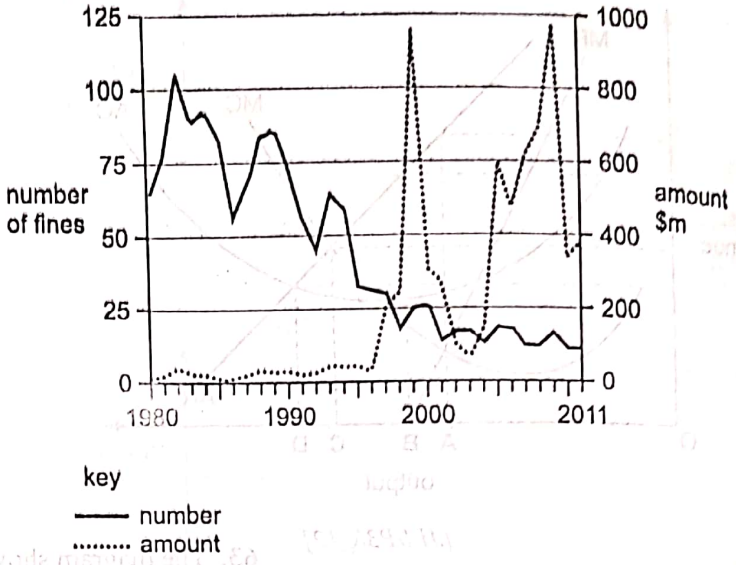
66. A country's steel producers are members of a cartel. Each member is allocated a production quota, and initially produces the maximum allowed under its quota.

What will be the effect on total steel production and the industry's total profits of allowing the producers to trade the quotas among themselves?

	effect on production	effect on total profits
A	increase	increase
B	increase	no change
C	no change	increase
D	no change	no change

[N14/P3/Q15]

67. The diagram shows the number and amount of fines ($m) imposed by the US Department of Justice for firms' illegal cartel behaviour between 1980 and 2011.



What is the most likely conclusion from the diagram about the view of the US Department of Justice of firms' cartel behaviour?

A It believed that cartel behaviour was unimportant before 1980.

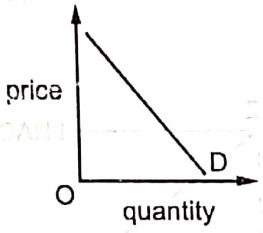
B It believed that illegal cartel behaviour was insignificant in 2011.

C It believed that increasing fines was necessary to deter cartel behaviour.

D It believed that the free market can regulate cartel behaviour.

[N14/P3/Q19]

68. The diagram shows the demand curve for a firm's product.



Which diagram depicts the shape of the firm's corresponding total revenue (TR) curve?

HELPS to MCQ

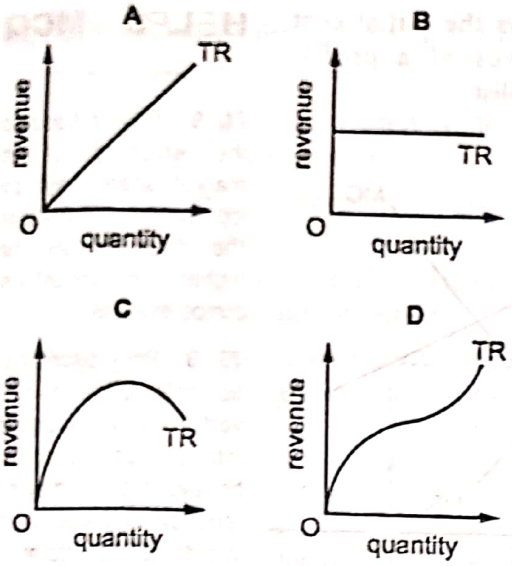
64. B Options **A**, **C** & **D** will make it difficult to collude.

65. A Policy of price discrimination makes the firm to earn higher profit by acquiring consumer surplus.

66. C Over all quota remains unchanged, therefore, production levels remain unchanged. However trading quota will give an opportunity to individual firms to earn higher profits.

67. C A fall in number of fines and an increase in the amount of fines suggests **C**.

68. C Typical shape of TR curve for a straight line downward sloping D curve.



[J15/P3/Q10]

69. The firms in an industry all produce a homogeneous product, but each firm is able to influence the price it charges for its own product.

In which market structure do the firms operate?

A perfect competition
B monopolistic competition
C oligopoly
D monopoly

[J15/P3/Q11]

70. The table shows information about a profit-maximising firm.

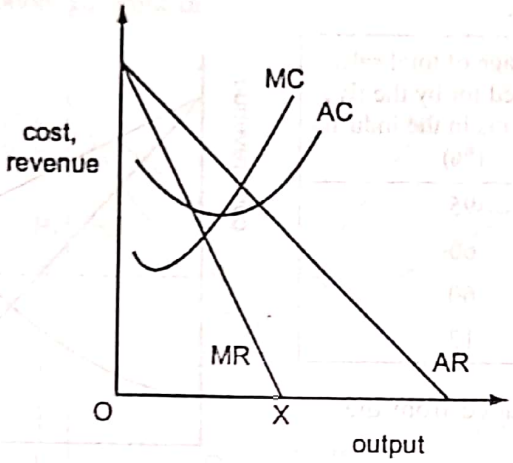
price per unit	$1.70
fixed costs	$10 000
variable costs per unit	$1.75

What can be concluded about the firm's behaviour?

A It should close down immediately because it is not covering its average costs.
B It should close down immediately because it is not covering its variable costs.
C It should continue production in the long-run because it is covering its total costs.
D It should continue production in the short-run because it is covering its fixed costs.

[J15/P3/Q13]

71. The diagram shows the cost and revenue curves of a monopoly.



What is the firm's objective if it produces output OX?

A to achieve normal profit
B to maximise profit
C to maximise total revenue
D to minimise average cost

[J15/P3/Q12]

72. Firms can grow either externally or internally.

What represents internal growth?

	finding new export markets	merging with rival firms in the same industry	merging with firms in other industries
A	no	no	yes
B	no	yes	no
C	yes	no	no
D	yes	yes	yes

[N15/P3/Q10]

73. A firm, operating in an imperfectly competitive market, produces at the level of output where the price elasticity of demand for its product is equal to unity.

What has the firm achieved?

A normal profit
B maximum profits
C maximum revenue
D maximum sales volume

[N15/P3/Q11]

HELPS to MCQ

69. C Firms in monopolistic competition sell only differentiated product while a monopolist sells a unique product. Also in this case the firms can influence market price, therefore, it rules out perfect competition.

70. B If P < AVC the firm can avoid loss on VC by closing down.

71. C Sales revenue maximization is where MR = 0.

72. C Merger is a way of external growth.

73. C When PED = –1, the firm's MR = 0. This is where the firm maximizes revenue.

74. The table shows the five-firm concentration ratios for a selection of industries in an economy.

industry	percentage of total sales accounted for by the five largest firms in the industry (%)
tobacco	95
steel	60
water supply	60
printing	12

What can be concluded from the table?

A The firms are of equal size in the steel industry and the water supply industry.

B The printing industry is more competitive than the tobacco industry.

C The tobacco industry is a monopoly market.

D There are more firms in the tobacco industry than in the water supply industry.

[N15/P3/Q12]

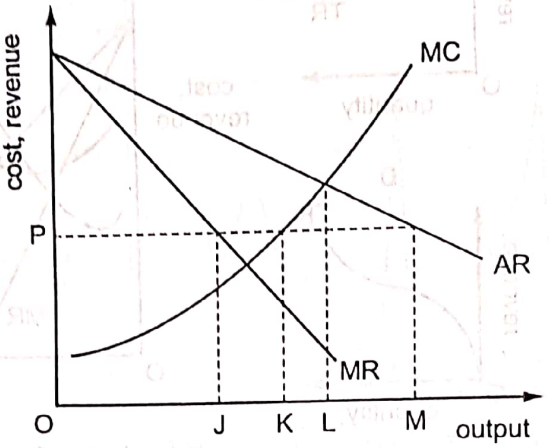
75. Instead of charging all of its customers the same price, a firm decides to charge different prices in different markets.

How is this likely to affect consumer surplus and the firm's marketing costs?

	consumer surplus	marketing costs
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

[N15/P3/Q14]

76. The diagram shows the initial cost and revenue curves of a profit-maximising monopolist.



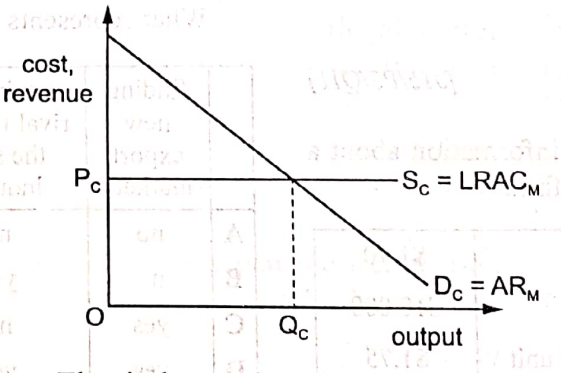
What output will the firm produce if the government fixes the price at OP?

A OJ **B** OK

C OL **D** OM

[N15/P3/Q13]

77. The diagram shows the demand curve, D_C, and supply curve, S_C, of a perfectly competitive industry.



The industry is taken over by a monopolist. The monopolist's long-run average cost curve, $LRAC_M$, is identical to the supply curve of the perfectly competitive industry.

What will be the effects of the takeover on profit and allocative efficiency?

	profit	allocative efficiency
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

[N15/P3/Q15]

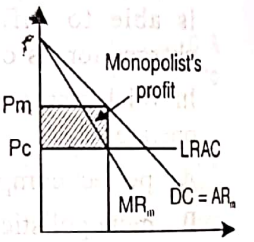
HELPS to MCQ

74. B C.R measures the percentage of the market share held by top few firms. The lower the value of CR the higher is the industry's competitiveness.

75. B Price discrimination helps a firm to convert consumer surplus into producer surplus, however the firm may be required to spend more in order to separate markets.

76. B P = MC

77. C



Monopolist's MR curve is drawn below his AR curve. MC = MR suggests Pm as monopoly price and the shaded area represents increase in profit. In both markets LRAC = MC, So P = MC in perfect market while P > MC for monopolist, therefore allocative efficiency decreases.

78. What action by a firm is most likely to raise its dynamic efficiency?

A distributing all its current profit to its existing shareholders

B maximising the labour productivity of its current workers

C minimising the average cost of producing its current output

D retaining its current profit for product research and development

[J16/P3/Q1]

79. Which statement about the 'kinked demand curve' model of oligopoly is **incorrect**?

A The kink in the demand curve of each firm is based on expectations about other firms' responses to changes in its price.

B The marginal revenue curve of the firm has a vertical segment at the market price.

C The model explains how the equilibrium market price is determined.

D The model suggests price stickiness within a certain range of marginal costs.

[J16/P3/Q6]

80. A firm estimates that, all else remaining unchanged, an increase in its output will result in a fall in its revenue. What can be concluded from this?

A The demand for the firm's product is price-elastic.

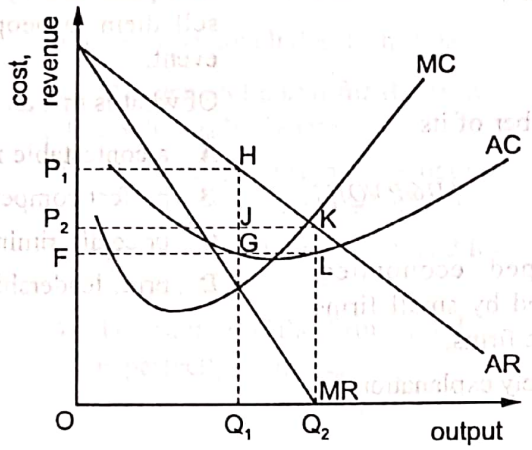
B The demand for the firm's product is price-inelastic.

C The supply of the firm's product is price-elastic.

D The supply of the firm's product is price-inelastic.

[J16/P3/Q8]

81. A monopolist changes its objective from profit maximisation to sales revenue maximisation.

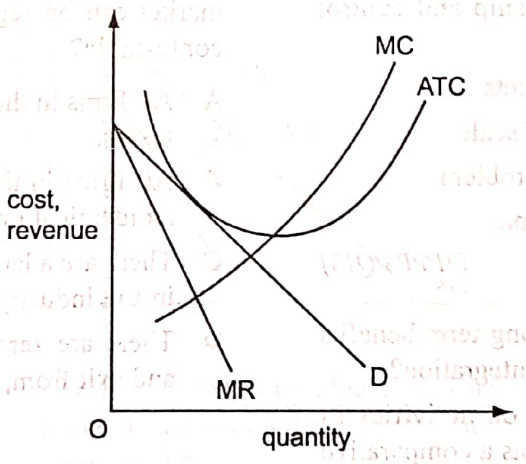


On the diagram, which areas represent the monopolist's total profit?

	original profit	final profit
A	P_1HJP_2	P_2KLF
B	P_1HJP_2	JKLG
C	P_1HGF	P_2KLF
D	P_1HGF	JKLG

[J16/P3/Q7]

82. The diagram shows the cost and revenue curves of a firm.



What does the diagram represent?

A a firm in monopolistic competition making normal profit

B a firm in monopolistic competition making short-term losses

C a firm in perfect competition at long-run equilibrium

D a monopoly making abnormal profits

[J16/P3/Q9]

HELPS to MCQ

78. D A firm is dynamically efficient if it conducts R & D.

79. C It does not explain how a firm attains equilibrium rather instead it explains why they maintain their prices.

80. B An increase in firm's output implies a fall in its price and as a consequence if TR decreases then the firm is facing a relatively inelastic demand curve.

81. C At Q_1 firm's MC = MR, therefore indicates profit maximization. At Q_2 firm's MR = 0, that suggests revenue maximization. Total profit at both these levels of output can be identified by AR – AC = average profit multiplied by the quantity sold = total profit.

82. A At profit maximizing level of output (MC = MR), the firm's AC = AR, that indicates normal profit. This rules out **B** & **D**. Option **C** is incorrect because a perfectly competitive firm faces AR = MR.

83. A firm wishes to eliminate competition and become a monopoly.
What should it do?

A maximise output
B maximise profit
C reduce prices
D reduce the number of its suppliers

[J16/P3/Q11]

84. In many developed economies, clothes are designed by small firms and retailed by large firms.

What is the most likely explanation for this pattern?

	clothes design firms	clothes retail firms
A	need to be flexible to cope with frequent fashion changes	need to exploit marketing economies of scale
B	need to employ highly specialised and skilled workers	need to operate at a low minimum efficient scale
C	need to operate at a high minimum efficient scale	need to offer a wide range of products to survive
D	need to overcome high barriers to entry into the industry	need to take advantage of technical economies of scale

[J16/P3/Q12]

85. What is likely to have its cause in the separation of ownership and control in a firm?

A contestable markets
B diseconomies of scale
C principal-agent problem
D prisoner's dilemma

[J16/P3/Q13]

86. What is one of the long-term benefits to a firm of vertical integration?

A a concentration on activities in which the firm has a comparative advantage
B a reduction in the total costs involved in agreeing contracts with other firms
C an increase in the firm's market share
D improvements in efficiency resulting from increased use of market incentives

[N16/P3/Q6]

87. The organisers of a major sporting event produce official souvenir products. Cheaper unofficial souvenirs are also produced by street traders who sell them to people walking to the event.

Of what is this an example?

A a contestable market
B perfect competition
C price discrimination
D price leadership

[N16/P3/Q7]

88. Which condition must apply before a market can be regarded as perfectly contestable?

A All firms in the industry are price-takers.
B All firms in the industry produce an identical product.
C There are a large number of firms in the industry.
D There are zero costs of entry to, and exit from, the industry.

[N16/P3/Q11]

HELPS to MCQ

83. C It will enable the firm to drive its competitors out of the market.

84. A Small firms are flexible in their production while the large firms can benefit from marketing economies.

85. C By definition.

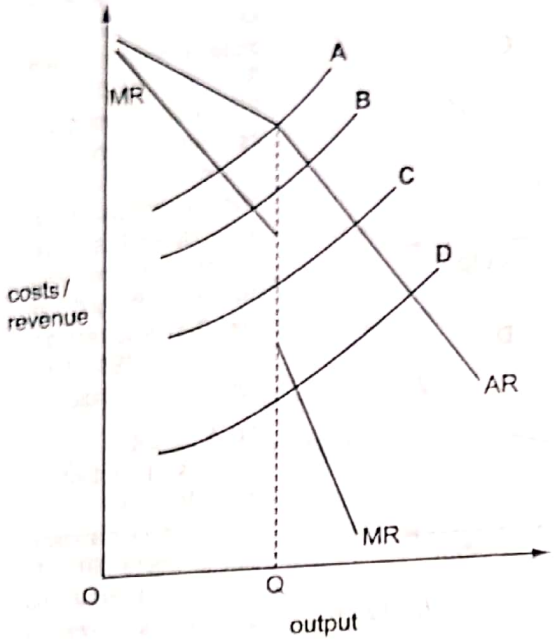
86. B It will enable the firm to eliminate profit earned by other firms with which it had contracts.

87. A A contestable market is characterized by costless entry and exit. This is indicated by many street traders entering the market. Perfect competition is ruled out because the traders are selling souvenirs cheaper than the organizers.

88. D A contestable market is characterised by costless entry and exit.

89. The diagram shows the average and marginal revenue curves of an oligopolistic firm. OQ is the profit-maximising output.

Which curve could be the firm's marginal cost curve?



[N16/P3/Q12]

90. What is most likely to be found when comparing the long-run equilibrium outcome in monopolistic competition with that in perfect competition?

A a greater degree of excess capacity in monopolistic competition

B a higher level of profit in monopolistic competition

C a larger number of firms in monopolistic competition

D a more price-elastic demand curve in monopolistic competition

[N16/P3/Q13]

91. Where is the long-run equilibrium output of a perfectly competitive firm?

A where average costs are at a minimum

B where average costs are falling

C where marginal costs are at a minimum

D where marginal costs are falling

[J17/P3/Q6]

92. A firm estimates that, all else remaining unchanged, an increase in its output will result in an equal proportionate increase in its revenue.

What can be concluded from this?

A The demand curve for the firm's product is horizontal.

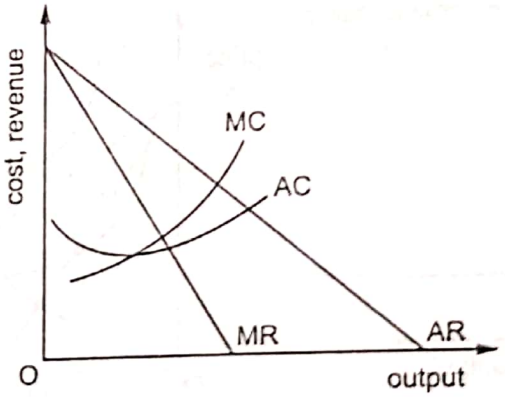
B The firm operates in a monopolistically competitive market.

C The price elasticity of demand for the firm's product is −1.

D The supply of the firm's product is perfectly inelastic.

[J17/P3/Q7]

93. The diagram shows a firm's cost and revenue curves.



The firm changes its objective from profit maximisation to sales revenue maximisation.

Which groups are likely to be winners and losers as a result of this change?

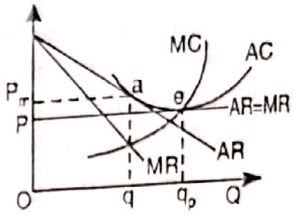
	winners	losers
A	customers	shareholders
B	managers	customers
C	workers	managers
D	shareholders	workers

[J17/P3/Q8]

HELPS to MCQ

89. C MC = MR indicates profit maximizing price and output. In case of **A**, **B** & **D** the firm's equilibrium output and price should be different than what is indicated on the graph.

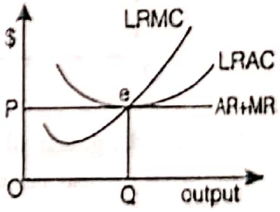
90. A



AR = MR represents perfect competition.
AR represents monopolistic competition.

A perfectly competitive firm produces at the lowest point on its AC curve thus operating at full capacity. A monopolistically competitive firm produces at the decreasing part of its AC curve i.e. below its capacity.

91. A



In the long run a perfectly competitive firm only earns normal profit i.e. it produces at the lowest point of its LRAC.

94. What could be a reason for the existence of small firms in various industries?

A a low minimum efficient scale of production

B greater scope for specialisation and division of labour

C the need to diversify in order to reduce risk

D the principal-agent problem

[J17/P3/Q9]

95. A firm in monopolistic competition that is producing at its profit maximising output is making a loss in the short run.

For it to continue in production, what must be correct about its average revenue (AR), marginal revenue (MR) and average variable cost (AVC)?

A AR = MR; AVC > AR

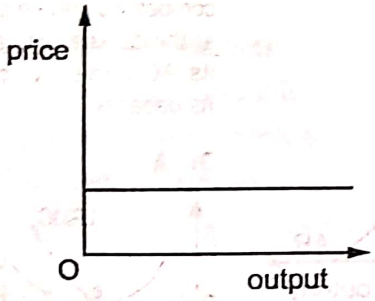
B AR = MR; AVC < AR

C AR > MR; AVC > AR

D AR > MR; AVC < AR

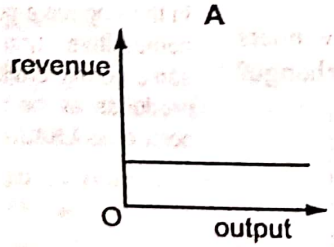
[J17/P3/Q10]

96. The diagram shows the demand curve for a firm's product.

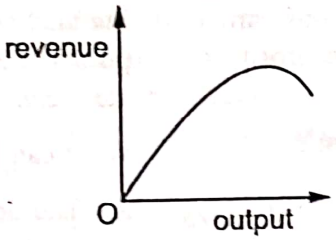


Which diagram shows the shape of the firm's total revenue (TR) curve?

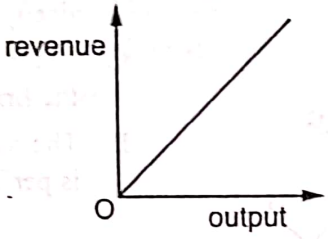
A



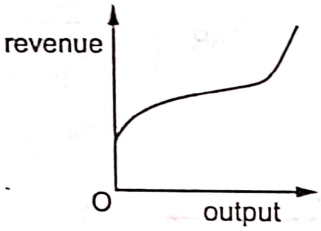
B



C

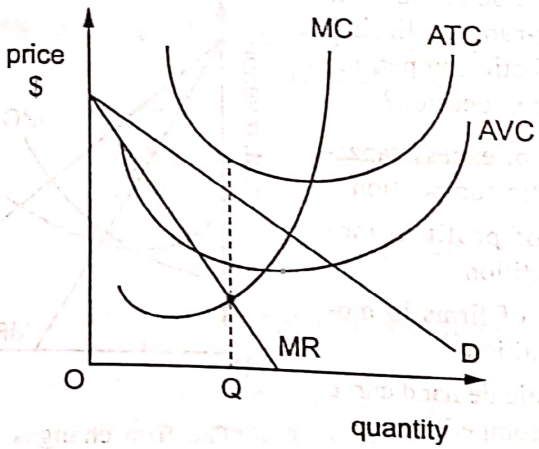


D



[J17/P3/Q11]

97. The diagram shows a firm in monopoly producing OQ units.



Which outcome can be observed in the diagram?

A loss minimisation

B profit satisficing

C revenue maximisation

D unit cost minimisation

[J17/P3/Q12]

HELPS to MCQ

92. A Since the additional output can be sold at the same price, therefore, it will result in the same proportionate increase in revenue. Option B is incorrect because PED varies throughout its demand curve that brings proportionately different changes in revenue. Option C is incorrect because it will leave revenue unchanged. Option D is incorrect because when PES = 0 output cannot change.

93. A Profit maximising output is where MC = MR
Sales revenue maximization is where MR = 0, thus output rises and price falls that serves the interest of managers more than the shareholders.

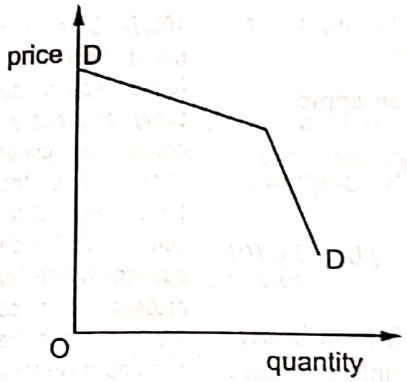
94. A After a firm reaches MES its LRAC stops falling any further. So MES indicates the lowest possible per unit cost and increase in the size of the firm beyond MES may result in a rising per unit cost. Low MES of production will, therefore, restrict the firms to remain small.

95. D In monopolistic competition firm's AR > MR, and in the short run the firm minimizes loss by continuing production as long as its price indicated by

AR ≥ AVC.

96. C A change in output brings about an equal proportionate change in TR.

98. Which feature of oligopoly is being assumed when the demand curve for an individual firm is as shown?



A price discrimination
B price leadership by the dominant firm
C interdependence between firms
D collusion between firms

[J17/P3/Q13]

99. Firms X and Y merge in a horizontal integration.

What must be true about the industry and the stage of production in which X and Y operate?

	industry	stage of production
A	different	different
B	different	same
C	same	different
D	same	same

[N17/P3/Q6]

100. Many public utilities can be described as 'natural' monopolies.

Which statement best describes the situation leading to a 'natural' monopoly?

A There are high fixed costs and falling average costs over all outputs demanded.
B There are legal restrictions on new entrants.
C A single firm controls the supply of raw materials.
D The firm has a patent on an essential process.

[N17/P3/Q9]

101. Increased advertising by a firm in an imperfectly competitive industry leads to an increase in demand for the industry's product but a fall in the firm's profits.

What could help to explain this?

A Production is subject to diseconomies of scale.
B Rival firms respond by increasing their advertising outlays.
C The demand for the industry's product is price-inelastic.
D The increase in demand for the firm's output is entirely at the expense of other firms.

[N17/P3/Q10]

102. An industry consists of a dominant firm, which acts as a price leader, and a large number of small firms.

Which statement about the profit-maximising output of the small firms is correct?

A Average cost is equal to average revenue.
B Average cost is minimised.
C Marginal cost is equal to price.
D Marginal revenue is zero.

[N17/P3/Q11]

103. There are two firms in an industry. Firm X faces a choice. It can either act independently or work with its rival. If it acts independently its profit could be $900 a week but it could be only $400 a week depending on what its rival does. If it works with its rival the joint profit of the two firms together would be $1400, $700 each. It has no knowledge of what the rival's policy will be.

Which concept describes this situation?

A contestable market
B kinked demand curve
C principal agent problem
D prisoner's dilemma

[N17/P3/Q12]

HELPS to MCQ

97. A When a firm incurs loss, MC = MR implies loss minimization. Options B and D, therefore, are incorrect. Option C is incorrect because the firm's output is below its revenue maximizing (MR = 0) output.

98. C A kinked demand curve implies interdependence.

99. D Horizontal integration implies same stage of production in the same industry.

100. A Economies of scale is the source of a natural monopoly and high fixed cost results in higher economies of scale leading to a natural monopoly.

101. B It will increase the firm's cost but response by the rival firms will make it ineffective. All other options are likely to increase firm's profits.

102. C All other firms become price takers and in that case they have their P = AR = MR, therefore MC = MR implies P = MC.

103. D A typical example of game theory.

104. C Because of this the firm maintains its price that produces a kinked demand curve. In other cases price may change.

104. What explains the kinked demand curve model of price rigidity in oligopoly?

A collusion between all firms in the industry in the setting of prices

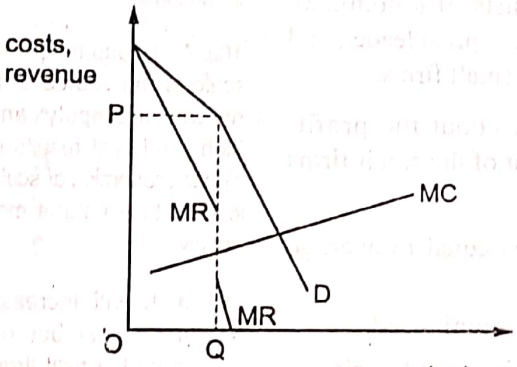
B the assumption that a single firm acts as price leader for all firms in the industry

C the individual firm's expectations about other firms' responses to its price changes

D the presence of barriers to the entry of new firms into the industry

[N17/P3/Q13]

105. The diagram shows a firm's cost and revenue curves.



Which features are associated with the diagram?

A economies of scale and allocative efficiency

B interdependence and allocative efficiency

C price rigidity and economies of scale

D price rigidity and interdependence

[J18/P3/Q7]

106. Which feature of production would make it more likely that an industry is a contestable market?

A advertising has established consumer loyalty

B all firms in the industry share research and development

C low fixed costs

D market rivals aim to reduce product differentiation

[J18/P3/Q9]

107. What is an example of backward vertical integration?

A a bakery buying a wheat farm

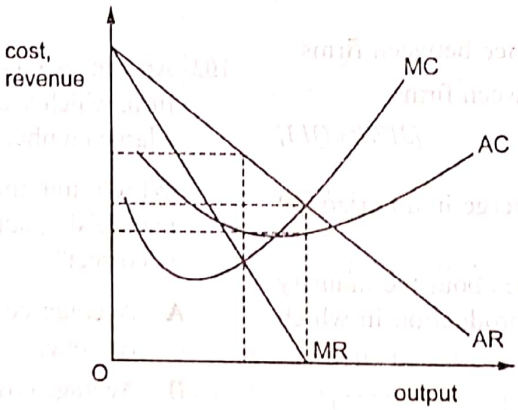
B a car manufacturer buying a car showroom

C a vineyard buying an apple orchard

D two rival supermarkets joining together

[J18/P3/Q10]

108. The diagram shows a firm in imperfect competition. It changed its aim from profit maximising to sales revenue maximising.



Which type of profit was it making in each case?

	profit maximising	sales revenue maximising
A	normal profit	supernormal profit
B	subnormal profit	normal profit
C	supernormal profit	normal profit
D	supernormal profit	supernormal profit

[J18/P3/Q11]

109. An airline sells seats at $100 each three months before a flight, at $150 each one month before the flight and at $200 each the day before the flight.

What describes this type of market behaviour by the firm?

A limit pricing to deter entry in an imperfect market

B price discrimination by a monopoly supplier

HELPS to MCQ

105. D On a kinked demand curve the firm faces elastic demand curve for a rise in price because if it chooses to raise its price the rival firms prefer not to follow suit and hence TR earned by the firm decreases. On the contrary the firm faces inelastic demand curve for a fall in price, because rival firms match any decrease in price and this again causes its TR to fall. Being dependent on rival firms' reaction the firm prefers to maintain its price. Options A & B are incorrect because P > MC indicates allocative inefficiency, Option C is ruled out because AC curve is missing in the graph and hence we cannot read economies of scale.

106. C A low fixed costs makes it easier for firms to enter and exit an industry-a key feature of contestable market. Other options point out features that are not necessarily required for a market to become contestable.

107. A Vertical integration takes place between different stages of production. Bakery, being a manufacturer buys a wheat farm i.e. raw material provider is an example of backward vertical integration. Option B suggests vertical forward integration, while C & D are examples of horizontal integration because firms are integrating at the same stage of production.

C price leadership by an oligopolist

D pricing where price equals average cost under perfect competition

[J18/P3/Q12]

110. What would **not** be an indication of a divergence between the interests of the managers and the shareholders of a company?

A an emphasis on sales maximisation

B management salaries which are linked to the long-run growth of the company's share price

C the acceptance of 'X' inefficiency in the company's production process

D the purchase of artwork for a company's headquarters

[J18/P3/Q13]

111. What must be found in two markets for price discrimination to be profitable?

A different price elasticities of demand

B different price elasticities of supply

C different producers

D different products

[N18/P3/Q7]

112. A firm maximises its profits by maximising its total revenue.

What does this imply?

A Average fixed cost is zero.

B Average revenue is equal to average cost.

C Marginal cost is zero.

D Marginal revenue is greater than marginal cost.

[N18/P3/Q8]

113. Technological change reduces the minimum efficient scale of production in an industry.

What is likely to result?

A increased number of firms and increased size of firms

B increased number of firms and reduced size of firms

C reduced number of firms and increased size of firms

D reduced number of firms and reduced size of firms

[N18/P3/Q9]

HELPS to MCQ

108. D MC = MR indicates profit maximizing output where firm's AC < AR, indicating supernormal profit. A firm maximizes sales revenue at an output when its MR = 0 where this firm is still earning supernormal profit because its AC < AR.

109. B Identical product sold at different prices in different time periods is an example of price discrimination. An increase in price rules out option **A** and **D** while there is no evidence in the statement suggesting option **C**.

110. B Growth is the only objective that serves the interest of both the owners and the management. Revenue maximization by management conflicts with owners' objectives of profit maximization, thus option A is incorrect. Options **C** & **D** would increase costs therefore they reduce profit for owners and they don't serve the interest of management in any way.

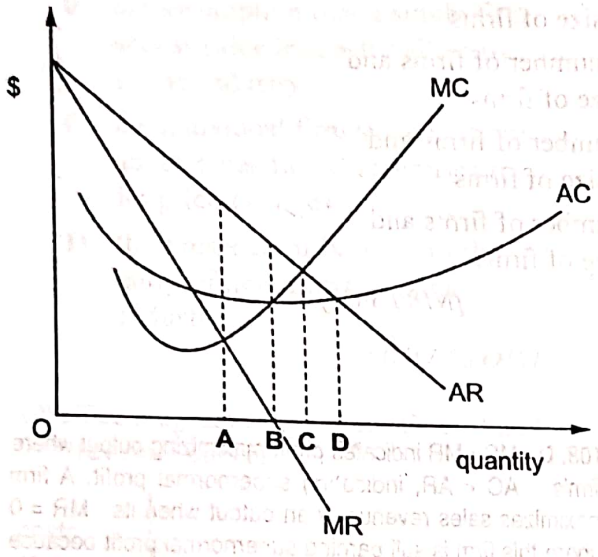
111. A It allows the firm to increase TR by charging a lower price in the market where PED > 1 and by charging a higher price in the market where PED < 1. Thus increase in firm's TR from both markets is likely to increase firm's profits. All other options are irrelevant in the context of price discrimination.

112. C A firm maximizes TR when its MR = 0 and it maximizes profit when its MC = MR, thus both could only be achieved at the same level of output when the firm's MC = 0.

113. B After MES the firm's LRAC stops falling any further. It therefore suggests optimum size of a firm in the long run. With a reduction in MES the optimum size of all the firms will now be on a lower level of output. It therefore reduces the size of individual firms and hence creates room for new firms.

114. The diagram shows the costs and revenue for a firm in imperfect competition.

Which level of output would produce only a normal profit?



[N18/P3/Q10]

115. What would be a reason why small firms do **not** survive?

A In certain industries, there are economies of scale.

B Small firms often supply personal services to consumers.

C Small firms often supply products, the size of the market for which is limited.

D Small owner-managed firms involve less risk.

[N18/P3/Q11]

116. What is the implication of a dominant oligopoly following a limit pricing policy?

A The industry will be restricted to a target number of firms.

B The industry will contract as rival oligopolists are eliminated.

C The oligopolist will achieve a satisficing level of profit.

D The oligopolist will sacrifice short-term profit for long-term profit.

[N18/P3/Q12]

HELPS to MCQ

114. D Normal profit is indicated by AR = AC.

115. A Economies of scale allow some of the existing firms to grow large and produce at a relatively lower per unit cost than the smaller firms who are then competed away by the large firms. Other options suggest the valid reasons for survival of small firms.

116. D It means that the dominant oligopolist would reduce its price in the short run to a level where it may survive even by incurring short term loss but its weak competitors would be driven out from the industry. The oligopolist then would raise its price to a level where it earns higher long run profits.

TOPIC 1.3

Different Market Structures
Growth and Survival of Firms
Differing Objectives of a Firm

ESSAY Section

LIST OF QUESTIONS

Q1 (N08/P4/Q2)

Economic analysis of resource allocation assumes consumers are rational. Where advertising exists, this analysis is of little value. Do you agree with this argument? [25]

Q2 (N08/P4/Q3)

(a) Explain how a knowledge of its long-run average costs might be useful to a profit-maximising firm. [10]

(b) Discuss whether firms always want, and are able, to maximise profits as suggested by economic theory. [15]

Q3 (J09/P4/Q2)

In many cities worldwide, newspaper publishers compete with each other. Some types of newspapers are sold, but publishers also produce others that are distributed free of charge. Many people and companies pay to advertise in the free newspapers.

(a) Explain the different ways that economists classify profits and consider whether it is possible to make a profit from a newspaper that is distributed free. [12]

(b) Discuss how a firm might compete in a market. [13]

Q4 (J09/P4/Q4)

Airbus, a large aircraft manufacturing company, announced in 2007 that its goal was to increase its $475 million research budget by 25 % in order to try to develop a more environmentally friendly aircraft that had lower fuel consumption.

(a) Explain why Airbus is likely to be in an imperfect rather than a perfect market structure. [10]

(b) Economics textbooks sometimes criticise firms in imperfect competition as being against the public interest. What does this mean, and how far does the Airbus announcement prove the textbooks wrong? [15]

Q5 (N09/P4/Q2)

In 2007 BHP Billiton, a large mining group, made a bid to take over Rio Tinto, the world's third largest mining group. Such a takeover would create the largest producer of copper and aluminium in the world.

(b) BHP Billiton and Rio Tinto have monopoly powers and are mining a natural resource. Discuss why the governments of the countries in which these companies operate might become concerned about this. [13]

Q6 (J10/P4/Q3)

In March 2009, the government of France agreed to pay 250 million Euros to the car manufacturer Renault, which employed 63 000 workers, on condition that it would not reduce the number of French jobs or factories. General Motors, a US car manufacturer which employed 600 000 workers, said that it needed $2 million in government aid to avoid bankruptcy.

(a) Describe the characteristics and likely pricing policy of the market structure in which a car manufacturer is likely to operate. 12]

(b) Discuss whether economic theory supports the idea that governments should encourage all large organisations. [13]

Q7 (N10/P4/Q3)

(b) Discuss whether there is a relationship between the marginal cost curve of the firm and the supply curve of the industry to which it belongs. [13]

Q8 (J11/P4/Q4)

(b) Explain the economic theory of profit maximisation for a firm and consider whether firms are likely to follow this theory in fixing their price and output. [13]

Q9 (J12/P4/Q3)

(a) Explain why there may be different levels of profit within perfect competition and between perfect competition and monopoly. [12]

(b) Discuss whether the average variable cost has any significance in a perfectly competitive market structure in determining (i) the output produced by a firm and (ii) the profit of a firm. [13]

Q10 (N12/P4/Q3)

(a) Explain what is meant by an oligopoly market and why prices might fluctuate less in an oligopoly market than in a perfectly competitive market. [12]

(b) Discuss whether a firm in monopolistic competition is more likely to act in the public interest than a firm that is a monopoly. [13]

Q11 (N14/P4/Q2)

The purchases a consumer makes are based upon marginal utility. It is this alone that determines market equilibrium in perfect competition.

Supply has no relevance.'

Is this true? [25]

Q12 (N14/P4/Q3)

Discuss the similarities and differences between a firm's likely price and output policy in perfect competition and oligopoly. [25]

Q13 (J15/P4/Q3)

(a) A firm in a perfectly competitive market and a firm with a monopoly both seek to maximise their profit. Explain, with the help of a diagram, why the levels of price and output might be different in the two markets. [12]

(b) Discuss whether it is always true that a firm, rather than maximising its profits while remaining small, will seek to grow in size. [13]

Q14 (N15/P4/Q2)

Consumers decide what they wish to buy and as a result direct the market. Producers develop new products, which they then promote by advertising, in order to maximise profits. Without producers there would be no products to buy.

(b) Discuss whether the market is dominated more by producers or by consumers. [13]

Q15 (J16/P4/Q5)

The traditional theory of the firm assumes a single objective for the firm, namely the maximisation of profit.

(a) Explain whether a firm with this objective necessarily always makes a profit. [12]

(b) Discuss how the objective in the traditional theory may be varied in different market structures. [13]

Q16 (N16/P4/Q4)

Explain what is meant by the 'equilibrium of a perfectly competitive firm' and consider the view that equilibrium is always achieved in perfect competition but never in a monopoly market. [25]

Q17 (J17/P4/Q3)

(a) Explain the difference between price leadership and price discrimination. [12]

(b) Discuss whether firms always want to maximise profits and are able to do so in the way suggested by economic theory. [13]

Q18 (J17/P4/Q7)

The driving force of some governments is to bring the benefits of competition to formerly monopolised markets.

(a) Explain the benefits that might occur in a more competitive market compared with a monopolised market. [12]

Q19 (N17/P4/Q4)

For some products there has been an increasing dominance of large firms in the last five years. For example, in the telecommunications industry most countries now have four or five operators, some have only two. In other markets many small firms exist.

(a) Explain possible reasons why in some markets there are many small firms while in others the market is dominated by a few large firms. [12]

(b) Discuss who might benefit and who might lose when a market becomes dominated by a few large firms. [13]

Q20 (J18/P4/Q3)

A businessman claimed it was difficult to make decisions as his business was subject to uncertainty and interdependence.

Discuss the methods used by oligopoly firms to reduce uncertainty and interdependence and the extent to which these methods exploit the consumer. [25]

Q21 (N18/P4/Q3)

(a) Analyse the factors which determine the price of a firm's product and its output in monopolistic competition. [12]

(b) Assess the effect on output and price if a monopoly firm maximises its sales revenue rather than its profit. Consider who will benefit the most from this change. [13]

Question 1

Economic analysis of resource allocation assumes consumers are rational. Where advertising exists, this analysis is of little value. Do you agree with this argument? [25]

[N08/P4/Q2]

Essay:

Economic analysis suggests that individual producers and consumers, through a system known as the market mechanism, would take the decisions as to the allocation of resources. Throughout the economy, millions of consumers are making decisions of what to purchase. For instance, by changing their preferences from good A to good B they are sending the signal to the producers of these goods. As the demand for good B increases and that of good A declines the prices of these goods will change and other things being equal, the profit obtained from the two products will change. Profit is the key motivator for producers and therefore, they will reallocate resources to those goods and services which will yield the most profit.

The consumers have an important role to play in the market for it has been their change in taste and preferences, which ultimately results in a change in what is produced. Hence, according to economic theory, consumers indicate their wishes, through changes in demand, and community's productive resources are allocated accordingly. So right amount of resources is allocated to produce the right products.

As consumers if we had unlimited income, we could consume as much as we wanted. We would not have to be careful with our money. In the real world, however, given the problem of scarcity, we have to make choices about what to buy. For instance, you may have to choose between the new books you feel you ought to buy and going to a rock concert, between a new pair of jeans and a meal out, and so on. It is here that economic theory assumes that consumers behave 'rationally'. We define rational choices as the weighing-up of the costs and benefits of our actions. As far as consumption is concerned, rational action involves considering the relative costs and benefits to us of the alternatives we could spend our money on. We do this in order to gain the maximum satisfaction possible from our limited incomes.

Sometimes we may act 'irrationally'. We may purchase goods impetuously or out of habit, with little thought to their price or quality. In general, however, it is a reasonably accurate assumption that people behave rationally. In other words, consumers learn over time the sort of products they like and therefore, they can probably make out a 'rational' shopping list for themselves.

On the other hand, the major aim of advertising is to sell the product. This can be achieved not only by informing the consumer of the product's existence and availability, but also by deliberately trying to persuade consumers to purchase the goods. Consumers need information about product characteristics and prices to make rational decisions. Advertising can be a low-cost means of providing that information.

The assertion in the question actually implies that much advertising is designed to manipulate or persuade consumers, that is, to alter their preferences in favor of the advertiser's product. For instance, a television commercial indicating that a popular personality drinks a particular brand of soft drink-and therefore that you should too- conveys little or no information to consumers about price or quality. Therefore, it encourages irrational consumption and influences allocation of resources. To counter this view economists argue that consumers buy what they desire for or at least what they are made to think they crave for through advertisement. As long as they buy commodities which they feel will satisfy their craving they act rationally.

In particular, with major items of expenditure such as a house, a car, a carpet or a foreign holiday, we are likely to take much more care. Take the case of a foreign holiday: you will probably spend quite a long time browsing through brochures comparing the relative merits of various holiday packages against their relative costs, looking for a holiday that gives good value for money. This is a rational behaviour.

But it may not turn out to be nearly as good as the brochure led you to believe. This is a problem of ignorance. You probably nevertheless behaved rationally in the first place, believing that you were getting value for money. We, therefore, must not confuse irrationality and ignorance. The assumption that consumers behave rationally does not mean that they have perfect information.

Also, the term 'rational' simply refers to behaviour that is consistent with consumers' own particular goals, i.e. behaviour directed to getting the most out of their limited income. People may well disapprove of the things that others buy - their clothes, their records, their cigarettes, but that is making a judgement about their goals: their taste and morality. Economic theory does not make judgement about what people's goal should be instead we use them to analyse the implications of people behaving rationally in pursuit of these goals.

Thus, it can be concluded that advertisement does not mean a decrease in rationality and hence misallocation of resources. In fact, advertisement through better information make informed choices more likely.

Question 2

(a) Explain how a knowledge of its long-run average costs might be useful to a profit-maximising firm. [10]

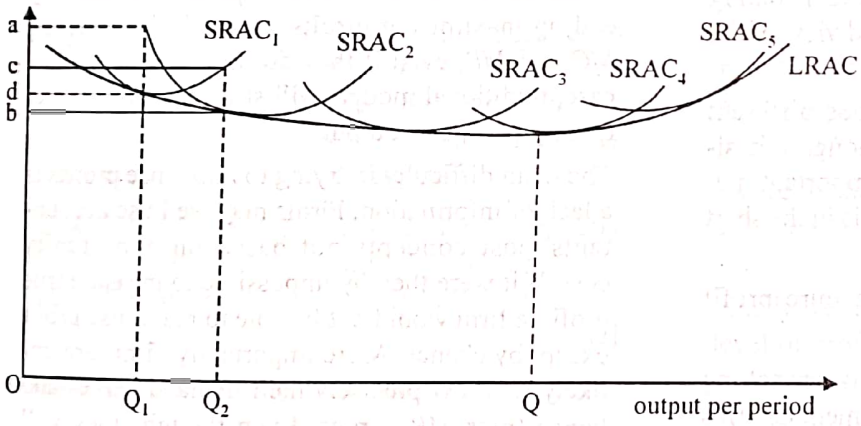
(b) Discuss whether firms always want, and are able, to maximise profits as suggested by economic theory. [15]

[N08/P4/Q3]

Essay:

(a) The long run is defined as a time period during which full adjustment can be made to any change in the economic environment i.e. in the long run all factors of production are variable and as a result the firm can alter its plant size. Consequently, there may be many short run cost curves, indicating different plant sizes, but only one long run curve as a firm develops over the years.

Long run average cost curve (LRAC) shows the lowest cost of producing any output when all factors are variable. The LRAC curve sometimes is called an envelop because it encloses a series of short run average cost curves by being tangent to them as shown in the graph below.



Each short-run curve shows how costs vary if output changes, with the fixed factor held constant.

The LRAC curve is made up of all the points of tangency of the given number of SRAC curves from which the LRAC curve is derived.

It is often assumed that as a firm expands, it will initially experience various types of economies of scale and thus faces a downward sloping LRAC curve. For instance, the firm can introduce more division of labour and specialization as it increases its size. A large firm buys raw material in bulk it may obtain it on preferential terms. In addition, larger firms may be able to obtain finance on favourable terms, thus reducing the cost of each unit.

After a point when such economies have been achieved, LRAC curve will flatten out. Further expansion results in firm being so large that it will start experiencing diseconomies of scale and hence faces a rising LRAC. At this stage, production and financial economies will begin to be offset by the managerial problems of running a giant organization. The effect of this is to give a saucer shaped curve as shown in the figure above.

In the graph above the firm's long run per unit cost of production is at a minimum when output is OQ. This is known as the optimum size of the firm i.e. the most efficient size.

To clarify this suppose there are many choices of plant sizes, each of which has a short run average cost curve. Also, the firm wants to produce output Q_1. If it builds a small plant, the $SRAC_1$ is relevant, so that the average cost of production is Od as opposed to Oa on the medium sized plant (indicated by $SRAC_2$). Hence, a small plant is a better choice than a medium sized plant. Now consider the case when firm wants to produce Q_2 ouput. The medium sized plant (indicated by $SRAC_2$) is more cost effective than a relatively smaller plant (indicated by $SRAC_1$).

Thus, the knowledge of LRAC might be useful to a profit-maximizing firm in terms of choosing the most efficient plant size. In addition, LRAC indicates the minimum efficient scale (MES), which is the lowest level of output at which a firm can minimize LRAC and by reaching MES the firm can become more efficient than other small firms. Most importantly, the firm knows the optimum size and can retain its scale to avoid diseconomies of scale.

Thus it can be stated that knowledge of LRAC helps firm to decide about the scale at which it must operate in order to maximize profit.

(b) The traditional theory of the firm tends to make a standard assumption that businesses possess the information, market power and motivation to set a price and output that maximises profits in the short or long run. This assumption is now criticised by economists who have studied the organisation and objectives of modern-day corporations and in particular, the existence of a 'divorce of ownership and control' that is common to most large-scale corporations.

There are numerous possible explanations of a firm departing from profit maximisation. Some relate to the lack of accurate and detailed information required to undertake optimal behaviour. Others concentrate on the alternative objectives of modern businesses.

Behavioural economists believe that modern corporations are complex organizations made up of various groups or stakeholders. Stakeholders are defined as any identifiable groups who have a vested interest in the activity of a business. Examples of relevant stakeholders might include:

- Employees within a business.
- Managers employed by the firm.
- Shareholders - people who have an equity stake in a business.
- Customers in the market.
- The local community.
- The government and its agencies including local government.

Each of these groups is likely to have different objectives or goals at different points in time. The dominant group at any moment in time can give greater emphasis to their own objectives - for example price and output decisions may be taken at local level by managers - with shareholders taking only a distant and imperfectly informed view of the company's performance and strategy.

The reality is that there are numerous different strategies that can be employed. Although a business might have profitability as an important medium-term aim, it might depart from this in the short term.

Following are some alternatives to pure profit maximisation strategies:

Satisficing behaviour involves the owners setting minimum acceptable levels of achievement in terms of business revenue and profit.

Sales Revenue Maximisation:

The explanation focused on the behaviour of manager-controlled businesses - price and output decisions taken by managers are divorced from the shareholders (the owners of the business). Economists argued that annual salaries and other perks might be more closely correlated with total sales revenue rather than profits. Companies geared towards maximising revenue are likely to make frequent and extensive use of price discrimination as a means of extracting extra revenue from consumers.

Constrained Sales Revenue Maximisation:

Shareholders of a business may introduce a constraint on the decisions of managers - known as constrained sales revenue maximisation. For example they may introduce a minimum profit constraint designed to underpin the valuation of their shares and maintain a dividend. Note that earning a minimum level of profit is different from profit maximisation.

Survival:

Aiming for profits, sales, salaries, power, etc. will be useless if the firm does not survive! Trying to maximise any of the various objectives may be risky. For example, if a firm tries to maximise its market share by aggressive advertising or price-cutting, it might invoke a strong response from its rivals. The resulting war may drive it out of business. Concern with survival, therefore, may make firms cautious.

The part of question whether firms are always able to maximize profit is also subject to debate. For instance, one criticism of traditional theory sometimes put forward is that firms do not use *MR* and *MC* concepts. This may be true, but firms could still arrive at maximum profit by trial and error adjustments of price, or by finding the output where *TR* and *TC* are furthest apart. Provided they end up maximising profits, they will be equating *MC* and *MR*, even if they do not know it! In this case, traditional models will still be useful in predicting price and output.

The main difficulty in trying to maximise profits is a lack of information. Firms may well use accountants' cost concepts not based on opportunity cost. If it were thereby impossible to measure true profit, a firm would not be able to maximise profit except by chance. More importantly, firms are unlikely to know precisely their demand curves and hence their *MR* curves. Even though they will know how much they are selling at the moment, this only gives them one point on their demand curve and no point at all on their *MR* curve. In order to make even an informed guess of marginal revenue they must have some idea of how responsive demand will be to a change in price. But how are they to estimate this price elasticity?

Market research may help. But even this is frequently very unreliable. Such information takes time to acquire and action, by which time market conditions may have changed, thus making the information out of date. The firm will therefore have to decide whether the possibly small benefits from market research are worth its cost.

The biggest problem in estimating the firm's demand curve is in estimating the actions and reactions of other firms and their effects. Finally, there is the problem of deciding the time period over which the firm should be seeking to maximise profits. Firms operate in a changing environment. Demand curves shift; supply curves shift. Some of these shifts occur as a result of factors outside the firm's control, such as changes in competitors' prices and products, or changes in technology. Some, however, change as a direct result of a firm's policies, such as an advertising campaign, the development of a new improved product, or the installation of new equipment. The firm is not, therefore, faced with static cost and revenue curves from which it can read off its profit-maximising price and output. Instead it is faced with a changing and often highly unpredictable set of curves.

In conclusion, firms may peruse other objectives than profit maximization and even if they do opt for profit maximization they may not have the complete information to work it out exactly the way as suggested by economic theory.

Question 3

In many cities worldwide, newspaper publishers compete with each other. Some types of newspapers are sold, but publishers also produce others that are distributed free of charge. Many people and companies pay to advertise in the free newspapers.

(a) Explain the different ways that economists classify profits and consider whether it is possible to make a profit from a newspaper that is distributed free. [12]

(b) Discuss how a firm might compete in a market. [13]

[J09/P4/Q2]

Essay

(a) Profit is the difference between the revenue and costs of a firm. It measures the return to risk when committing scarce resources to a market or industry. Entrepreneurs take risks for which they require an adequate expected rate of return.

Total revenue is defined as total earnings of a firm from selling a certain level of output within a specified period: TR = P × Q. As for the costs there is a difference in the view point of accountants and economists. An accountant's view of a firm's costs is that they are incurred when the firm makes a recognised expenditure. They are production expenses paid out at a particular price and time. Thus accountants define profit as the revenue earned by a firm from which fixed and variable operating costs are deducted Economists disagree with this and argue that accountants' view of cost does not fully recognise the private cost of economic activity. The economist's view of costs includes money paid out to factors as well as an allowance for anything owned by the entrepreneur and used in the production process. This factor cost must be imputed or estimated and included with the other costs.

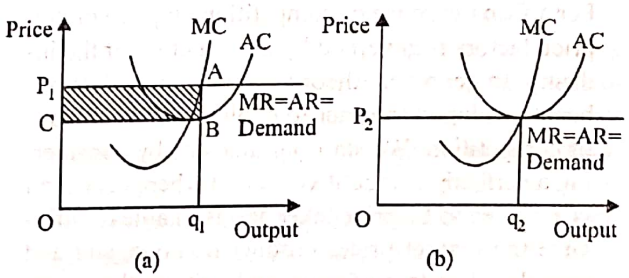
For economists, the concept of opportunity cost is relevant. Opportunity cost involves the sacrifice of the closest alternative and is the value of what has been given up. For instance, entrepreneur may have capital that could have been used at no risk elsewhere and would have earned an income or else the entrepreneur himself could have earned income working for someone else. Thus there will be a minimum level of profit that entrepreneur will expect, reflecting what his capital and labour would have earned elsewhere. This is the concept of normal profit. Because we treat normal profit as an opportunity cost of a business, we include an estimate for normal profit in the total cost. Thus profit, to an economist, is:

TR(unit price multiplied by number of units sold) minus TC (including normal profit).

Hence, if the firm covers its TC (where TR meets TC or else ATC = AR) then it is making normal profits.

Finally we can define normal profit as the minimum level of profit required to keep the factors of production in their current use.

Any profit less than normal profit (where price < average total cost) is called sub-normal profit and any profit achieved in excess of normal profit (where price > average total cost) is known as abnormal profit or supernormal profit. Different profit level are shown in the graphs below show.



In the graph above in situation (a) a perfectly competitive firm produces an output q_1 where MC=MR. As explained above the cost curves incorporate an element of profit called normal profit. The TR is OP_1Aq_1 and TC is $OCBq_1$, hence the firm is making supernormal profit of P_1ABC represented by the shaded area. When firms are making abnormal profits, there is an incentive for other producers to enter the market to try to acquire some of this profit. However, abnormal profit is only be a feature of perfect competition in the short run whereas abnormal profit persists in the long run in monopoly and imperfectly competitive markets such as oligopoly where firms can successfully block the entry of new firms.

In situation (b) the firm is profit maximizing, producing an output q_2 and covering its total cost. The firm is breaking even, making normal profit.

Newspapers usually generate greater part of their revenue from advertisements they publish. However some part of revenue comes from the price that they charge from the buyers. For free news papers it follows that they are distributed freely to the readers but the 'free' newspaper is only free to the consumer. It is not free to the advertiser. The "free" newspaper could make a profit provided that revenues from selling advertising space at least covered costs of production and distribution. But the ability to charge for advertisement depends on its circulation and readership. The greater the circulation of the "free" newspaper, the more the newspaper could charge for advertisements and the higher the profit it earns.

(b) Firms in different industries can compete on price or non-price factors. Price competition involves offering a lower price in order to boost sales. Non-price competition entails product differentiation, and advertisement. Product differentiation is a strategy in which one firm's product is distinguished from competing products by means of its design, packaging, related services, quality, location or other attributes. Advertising involves a seller communicating message about his product to potential buyers.

For a firm the scope of competition on price or non price factors is governed by the structure of the industry. In economic theory, a range of models has been developed in order to explain different ways of competition. We start our analysis by considering a perfectly competitive market where each firm is assumed to be price taker and is unable to influence the market price. Product homogeneity and complete freedom of entry and exit are the essential features of perfectly competitive market. Facing the market price each individual firm can choose any quantity it likes and can sell at the ruling price without affecting the sales of rival firms. Hence there is no scope of price competition for individual firms. Similarly there is no scope of non price competition, since all firms produce homogeneous product. The firms' behaviour is strictly limited in a perfectly competitive market and the only way to compete would be to increase productivity and lower average total cost.

In imperfect markets such as monopolistic competition and oligopoly firms have some influence on the market price and are therefore price makers. In monopolistic competition each firm is competing with a large number of similar producers. In this situation the demand curve facing the individual firm will be downward sloping but relatively price elastic because of the presence of substitutes. At the heart of this model of competition is the fact that there are a large number of competitors using a combination of price and non-price competition to try and increase their market power. It might be an option for firms to reduce their price in order to increase total revenue. But the prediction is that the firms will only be able to earn normal profit in the long run due to the free entry of rivals.

The clue to the behaviour of firms in this market structure lies in the concept of product differentiation. This highlights the important role that advertisement and promotions play in this market structure. Successful advertising will not only shift the firm's demand curve to the right at the expense of the rivals but will also reduce the price elasticity if the consumers feel there are no close substitutes.

Oligopoly is defined as a market situation where the total output is concentrated in the hands of a few firms. An effective oligopoly can exist if a handful of firms dominate the market. Although they each have market power in the form of influence over the price they charge, the uncertainty surrounding the outcome of competitive tactics means that firms may prefer non-price competition. The difficulty of choosing competitive strategies and of predicting the response of rivals may change the behaviour of firms. There are situations where big firms find that it is in their interest to co-operate with rivals. They can form collusion which is an anti competitive action by producers. Informal or tacit collusion usually takes the form of price leadership, where firms automatically follow the lead of one of the group.

An oligopolist would only start a price war if its cost of production were significantly lower than its

rivals. Where the firm is highly diversified, a firm may be prepared to sacrifice profits by cutting the price, in an attempt to increase market share.

Finally a monopoly is where a single firm controls the entire output of the industry. A monopoly is protected from competition by the entry barriers. So there is no actual competition and no scope of competitive behaviour. But the monopolist might involve in non-price competition as a means of deterring potential competitors. The monopolist's profits could be increased in certain circumstances by a practice known as price discrimination. Price discrimination occurs where the monopolist chooses to split the output up and sell it at different prices to different consumers.The monopolist's aim is to charge what the consumers will pay and turn the consumer surplus into producer surplus in the form of abnormal profit.

Hence the competitive behaviour of firms is subject to the prevailing market conditions.

Question 4

Airbus, a large aircraft manufacturing company, announced in 2007 that its goal was to increase its $475 million research budget by 25 % in order to try to develop a more environmentally friendly aircraft that had lower fuel consumption.

(a) Explain why Airbus is likely to be in an imperfect rather than a perfect market structure. [10]

(b) Economics textbooks sometimes criticise firms in imperfect competition as being against the public interest. What does this mean, and how far does the Airbus announcement prove the textbooks wrong? [15]

[J09/P4/Q4]

Essay

(a) A perfectly competitive market is characterized by large number of firms, complete freedom of entry and exit, product homogeneity and perfect knowledge of the good and its market by both producers and consumers. No individual firm has any influence on the market price. Firms are described as being price takers. The ruling price is determined by the forces of market demand and supply. Facing the market price each individual firm can choose any quantity it likes and can sell at the ruling price without affecting the sales of rival firms. In the short run there is no time for new firms to enter the market and thus supernormal profits can persist. In the long run, however, any supernormal profits will be competed away by the entry of new firms.

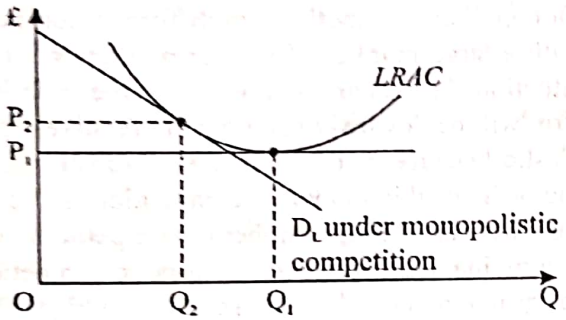
In imperfect markets such as monopolistic competition and oligopoly firms have some influence on the market price and are therefore price makers. In monopolistic competition each firm is competing with a large number of similar producers. In this situation the demand curve facing the individual firm will be downward sloping but relatively price elastic because of the presence of substitutes. At the heart of this model of competition is the fact that there are a large number of competitors using a combination of price and non-price competition to try and increase their market power. Oligopoly is defined as a market situation where the total output is concentrated in the hands of a few firms. The product may or may not be differentiated. What matters is that some or all the firms earn substantial profits over the long run because barriers to entry make it difficult or impossible for new firms to enter the market.

Unlike perfectly competitive market where a large number of firms sell homogeneous product air craft manufacturing industry comprises of only a handful of large firms and each one of them is producing highly differentiated aircrafts with distinct features. Technological breakthroughs, as a result of extensive research, have enabled these few manufacturers to gain from economies of scale and to grow large enough to influence the market. Hence each one of them is expected to enjoy substantial market share to exert influence over the price they charge, a central feature of imperfect market. Moreover high capital cost and huge research and development expenditure prevent other firms from entering the industry. Thus the firms are likely to earn substantial profit over the long run which is contrary to the possibility of only normal profit in a perfectly competitive market.

Hence, it can be concluded that airbus is operating in an imperfectly competitive market.

(b) Public interest is said to be best served when markets operate under perfect competition. This is because the consumer gains from low prices, as not only are costs kept low, but also there are no long run supernormal profits to add to cost. Because of this perfect competition is said to lead to consumer sovereignty. Consumers, through the market, determine what and how much is to be produced. Firms have no power to manipulate the market. They cannot control price. The only thing they can do to increase profit is to become more efficient, and that benefits the consumer too.

It is often argued that imperfectly competitive markets lead to the loss of consumer sovereignty and thus results in a less efficient allocation of resources than perfect competition. Figure below compares the long-run equilibrium positions for two firms.



D_L under perfect competition

One firm is under perfect competition and thus faces a horizontal demand curve. It will produce an output of Q_1 at a price of P_1. The other is under imperfect competition and thus faces a downward-sloping demand curve. It will produce the lower output of Q_2 at the higher price of P_2. A crucial assumption here is that a firm would have the *same* long-run average cost (*LRAC*) curve in both cases. Given this assumption, imperfect competition has the following disadvantages:

- Less will be sold and at a higher price.
- Firms will not be producing at the least-cost point.

By producing more, firms would move to a lower point on their *LRAC* curve. Thus firms under imperfect competition are said to have excess capacity. In Figure above this excess capacity is shown as $Q_1 - Q_2$. In the long run firm under imperfect market will produce at an output below its minimum-cost point and charge a price higher than its MC. In other words, in imperfect competition neither productive nor allocative efficiency occurs in the long run equilibrium.

The firms in imperfect market are also said to be involved in wasteful competition that uses scarce resources which could be put to alternative uses in producing more goods. Expenditure on practices such as promotion and advertisement tend to raise the price paid by the consumers. Also if firms in imperfect market act collusively and jointly maximize profits, they will in effect be acting together as a monopoly. In such cases the disadvantages to society experienced under monopoly will also be experienced under imperfect market.

On the other hand it is often argued that firm will not be operating at the bottom of its *LRAC* curve, but the nature of the industry may allow some economies of scale to be gained. The *LRAC* curve would thus be lower than in the case of the larger number of smaller firms that would be necessary if the industry were to be perfectly competitive. The size of the economies of scale, if any, will obviously vary from industry to industry. Furthermore, the consumer may benefit from monopolistic competition by having a greater variety of products to choose from. Each firm may satisfy some particular requirement of particular consumers.

The question is if imperfect competition brings the disadvantage of excess capacity but the advantage of diversity, is the consumer necessarily worse off? The answer depends on the will and choice of the society at large.

Innovation is the central feature of imperfect markets. Aware that new products and processes by rival firms can threaten their survival, existing firms must have a powerful incentive to engage continuously in R&D. Innovative new products often enable these firms to maintain or increase their profit. Thus innovation can strengthen their existing market power. The underlying objective of air bus of increasing its research budget up to approximately $600 millions in order develop environmentally friendly aircraft that had lower fuel consumption is to maximize profit. They must have a large economic profit from which they can fund the expensive research and development. Moreover the existence of barriers might have given them some assurance that it will reap the reward of successful R&D. Thus short run inefficiencies might be partly or wholly offset by air bus contribution to better products, lower prices and lower cost over time.

The best outcome of their action is that they will be able to create a socially friendly image while achieving their goal of profit maximization. Thus action by airbus does not prove the text book wrong because the assumptions of profit maximization and abnormal profit in such a market structure hold true.

Question 5

In 2007 BHP Billiton, a large mining group, made a bid to take over Rio Tinto, the world's third largest mining group. Such a takeover would create the largest producer of copper and aluminium in the world.

(b) BHP Billiton and Rio Tinto have monopoly powers and are mining a natural resource. Discuss why the governments of the countries in which these companies operate might become concerned about this. [13]

[N09/P4/Q2(b)]

Essay

(b) In theory, a monopoly is where a single firm controls the entire output of the industry. In practice a monopoly situation can arise when a firm has a dominant position in the market in terms of its market share. BHP Billiton and Rio Tinto have monopoly powers in mining natural resources which might be a cause of concern for many governments of the countries in which they operate.

The classic case against monopoly is that its conduct and performance is undesirable when compared with that of firms in a competitive industry. This can be anlaysed with the help of the graph below:

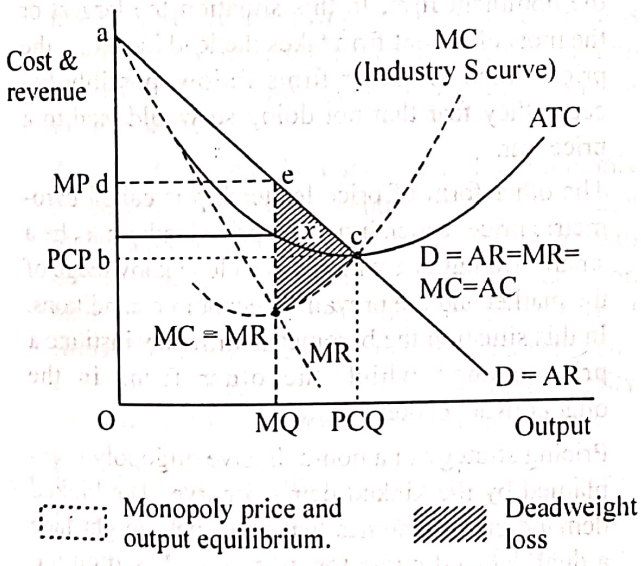


Figure above compares the profit-maximising position for an industry under monopoly with that under perfect competition. The monopolist will produce MQ at a price of MPd. This is where *MC = MR*. If the same industry were under perfect competition, it would produce at PCQ and PCPb. This is where industry supply under perfect competition equals industry demand. Thus monopoly produces a lower output and charges a higher price. In doing so the monopolist captures consumer surplus and turns it into abnormal profit. This analysis is based on the assumption that the industry has the same AC and MC curves whether under perfect competition or run as a monopoly. A more detailed analysis of the graph shows that in perfect competition, output is where *P = MC* that could be argued to be allocatively efficient. Clearly, the monopolist is producing below this level (at only MQ where *P > MC*), the monopolist can be argued to be producing at less than optimal output and resulting in a welfare loss shown by the triangle x. Hence consumers would be prepared to pay more for additional units than they cost to produce.

Moreover under monopoly barriers to entry allow profits to remain supernormal even in the long run. The monopolist is not forced to operate at the bottom of the AC curve. The monopolist, however, sheltered by barriers to entry, can still make large profits even if it is not using the most efficient technique.

These abnormal profits of monopolists may be considered as unfair by many but the scale of this problem obviously depends on the size of the monopoly and the degree of its power. The monopoly profits of the village store may seem of little consequence when compared to the profits of a giant national or international company.

Apart from simple monopoly drawbacks multinational monopolies such as BHP Billiton tend to use their economic power to influence government policies in directions unfavorable to the host nations. They are able to extract sizable economic and political concessions from the governments of host countries in the form of excessive protection, tax, rebates, investment allowances, and the cheap provision of factory sites and essential social services. As a result, the private profits of these giant multinational monopolies exceed social benefits.

These firms are also blamed to damage host economies by suppressing domestic entrepreneur and using their superior knowledge, worldwide contacts, advertising skills, and a range of essential support services to drive out local competitors and inhibit the emergence of small-scale local enterprises.

The rate of extraction of minerals might be another major source of concern for the host governments. In many parts of the world multinational companies are extracting finite resources at such a rapid rate that it questions the long term sustainability of economic prosperity of the host nations.

Thus monopolies, operating at such a large scale, is a matter of concern for the governments of the host countries.

Question 6

In March 2009, the government of France agreed to pay 250 million Euros to the car manufacturer Renault, which employed 63 000 workers, on condition that it would not reduce the number of French jobs or factories. General Motors, a US car manufacturer which employed 600 000 workers, said that it needed $2 million in government aid to avoid bankruptcy.

(a) Describe the characteristics and likely pricing policy of the market structure in which a car manufacturer is likely to operate. [12]

(b) Discuss whether economic theory supports the idea that governments should encourage all large organisations. [13]

[J10/P4/Q3]

Essay

(a) Car manufacturers are likely to operate in an oligopolistic market structure. Oligopoly refers to a situation where there are a few firms in the market producing a large number of brands. Each firm is of a sufficiently large size that the decision taken by one firm will affect the decisions taken by the other firms in the market. The firms are, therefore, mutually dependent. It is an industry where there is a high level of market concentration. The concentration ratio measures the extent to which a market or industry is dominated by a few leading firms. This implies that the number of firms is small enough for each firm to realize that its competitors may respond to anything that it does and that it should take such possible responses into account. Therefore, there is no single theory of how firms determine price and output under conditions of oligopoly.

In addition to this an oligopoly exhibits product branding, entry barriers, interdependent decision-making and non-price competition. All of these features can be applied to the car industry.

In deciding on pricing strategies, oligopolists face a basic dilemma between competing and cooperating. Thus there is a possibility of price competition. If a price war breaks out, oligopolists will produce and price much as a perfectly competitive industry. But price wars prove to be costly therefore they are short lived. Due to the threat of price wars and the existence of effective alternative strategies, oligopolists may engage in non-price competition. This can take a number of different forms such as product differentiation, where oli-gopolists can, through advertising, create a brand image for their product. The firm may offer a particular after-sales service or package the product in, a particular way.

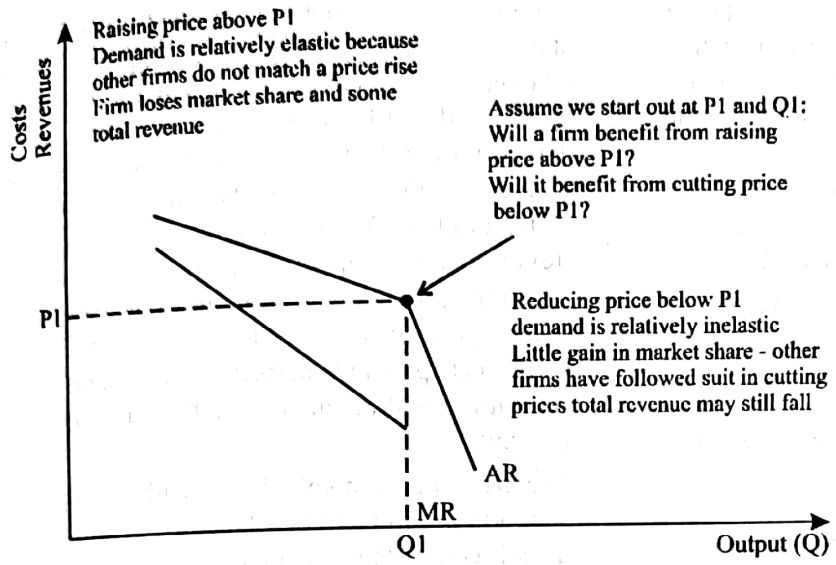
However, there is much to be gained from cooperation in the form of collusion. Collusion is an agreement on price charged and level of output produced. Thus it makes it possible for oligopolists to act as a monopoly and to achieve maximum profits for the industry.

Collusion can take different forms. It can be a formal or overt collusion, with agreement being reached between the firms as to what price to charge or what output to pro-duce. This type of formal agreement is known as a cartel and is illegal in many countries. The other type is called tacit collusion. This is where firms behave in a cooperative way but do not have a formal agreement. The most common form of tacit collusion is price leadership where price set by one firm becomes the benchmark for other firms.

Often the price leader in an oligopolistic market is the dominant firm. In this situation the largest or the most effi-cient firm takes the lead in setting the price which the other firms follow, possibly because they fear that not doing so would lead to a price war.

The other form of price leadership is called barometric price leadership. The price leader may be a small firm but one which has a close knowledge of the market and the prevailing economic conditions. In this situation the barometric firm may institute a price change which the other firms in the oligopolistic market follow.

Pricing strategy in a non-collusive oligopoly is explained by the kinked demand curve. The kinked demand curve assumes that a business might face a dual demand curve for its product based on the likely reactions of other firms in the market to a change in its price. The common assumption of the theory is that firms in an oligopoly are looking to protect and maintain their market share and that rival firms are unlikely to match another's price increase but may match a price fall. The graph below illustrates this situation.



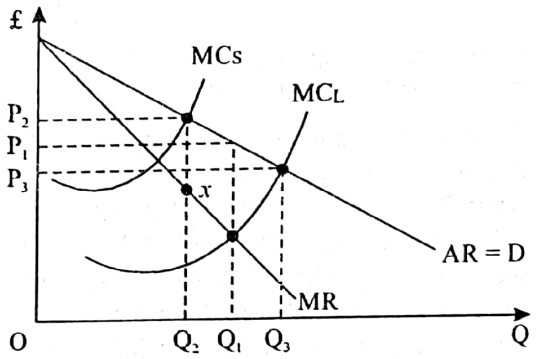
If a business raises price and others leave their prices constant, then we can expect quite a large substitution effect away from this firm making demand relatively price elastic. The business would then lose market share and expect to see a fall in its total revenue.

If a business reduces price but other firms follow suit, the relative price change is much smaller and demand would be inelastic in respect of the price change. Cutting prices when demand is inelastic also leads to a fall in total revenue with little or no effect on market share. The kinked demand curve model therefore makes a prediction that a business might reach a stable profit-maximising equilibrium at price P_1 and output Q_1 and have little incentive to alter prices.

A car industry can be characterized as oligopoly because there is low concentration of firms with a high degree of interdependence. Also firms have to decide about particular pricing and output decision after taking account of possible reactions of rival firms. There is scope of competition on price and even more on factors such as branding, quality variation, after sale services and advertisement.

(b) Economic theory supports the idea of governments support on various grounds such as efficiency, economies of scale and research and development. Firstly large firms may be able to achieve substantial economies of scale due to larger plant, centralised administration and specialists' staff. Their growth and expansion of output over time leads to a reduction in the unit costs. These cost saving benefits are referred to as economies of scale. They occur because the firm's output rises proportionately faster than the inputs. These benefits come in a variety of ways known as technical, marketing, financial, managerial and risk bearing economies. Thus large firms will be better placed in terms of cost structure than the small firms.

Large firms are also viewed as improving welfare by avoiding unneces-sary duplication of resources. For instance, a large gas company would eliminate the need for several sets of rival gas pipes under each street thus resulting in efficient allocation of resources. Particularly if this results in an *MC* curve substantially below that of the same industry with relatively small firms, then the large firm will produce a higher output at a lower price as illustrated by the graph below.



In figure above the large firm produces Q_t at a price of p_2. Compare this with price p_2 and output Q_2 when market is shared by relatively smaller firms operating in a perfectly competitive market. Price will be even higher and out put lower than what the larger firm produces. This is possible only when the large firm's MC curve is below point *x*.

Moreover, the large firm can use part of its supernormal profits for research and development and investment. It thus has a greater ability to become dynamically efficient than has the small firm with limited funds. Also, in a perfectly contestable market even the largest firm earns only normal profits and operates most efficiently.

Finally, macroeconomic theory also supports the idea of encouraging firms to grow in order to support particular regions and more importantly to stimulate growth.

However, if large firms are dominant then they usually adopt monopolistic behaviour. In practice a monopoly situation can arise when a firm has a dominant position in terms of its market share. This might be a cause of concern for government.

The classic case against the large firms is that their conduct and performance is undesirable when compared with that of small firms in a more competitive industry. This can be anlaysed with the help of the graph below:

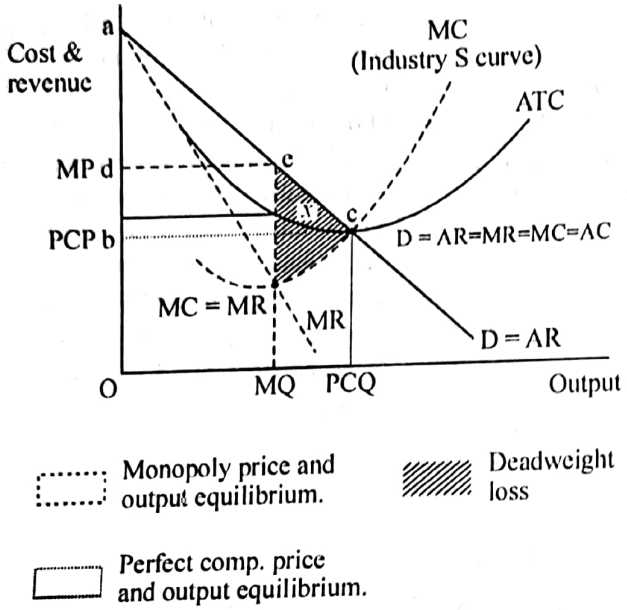


Figure above compares the profit-maximising position for a dominating large firm with that of small firms. The large firm will produce MQ at a price of MPd. This is where *MC = MR*. If the same industry were shared by relatively small firms, it would produce at PCQ and charge the price PCPb. This is where industry supply equals industry demand. Thus large firm produces a lower output and charges a higher price. In doing so the firm captures consumer surplus and turns it into abnormal profit. This analysis is based on the assumption that the industry has the same AC and MC curves in case of both large and small firms.

Moreover large firms result in limited choice available to consumer thus depriving consumers of variety that they would have enjoyed if there were large number of relatively small firms. Also large firms usually adopt predatory pricing to restrict competition and discriminatory pricing to appropriate consumer surplus. Both these pricing strategies are thought to work against the interest of consumers.

Large firms also create different barriers to entry which allow profits to remain supernormal even in the long run. The large firm, therefore, sheltered by barriers to entry, can still make large profits even if it is not using the most efficient technique.

Furthermore, large firm's average costs may increase in the long run with the firm experiencing diseconomies of scale. These diseconomies of scale come in a variety of different ways. For instance, as a firm grows in size it will possibly have a larger management team and, unlike a small firm, it will find it difficult to make decisions quickly. This can often be the case where companies have merged and there are two sets of management with different ideas. A 'them and us' situation may also develop between the management and the workforce, possibly resulting in an increase in the number of industrial disputes. It may be difficult to co-ordinate planning, marketing, production and so on, with a resulting increase in the company's cost per unit.

In conclusion economic theory neither completely supports government assistance to large firms nor does it completely rule this out. Rather economic theory suggests that the support by government to large firms should depend upon the specific information about the particular organization being discussed.

Question 7

Discuss whether there is a relationship between the marginal cost curve of the firm and the supply curve of the industry to which it belongs. [13]

[N10/P4/Q3(b)]

Essay

Marginal cost (MC) is the extra cost of producing one more unit of output. MC is determined by the following:

$$MC = \frac{\text{Change in Total cost (TC)}}{\text{Change in output}}$$

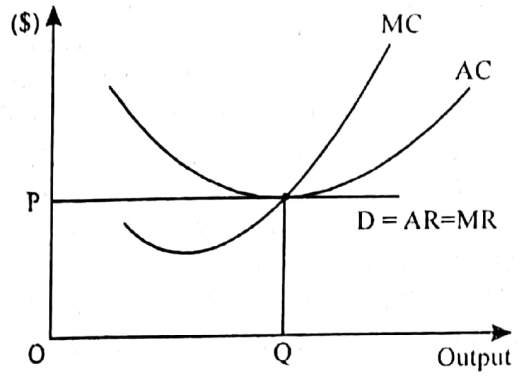
or $MC = TC_n - TC_{n-1}$

In the short run MC can also be calculated from the total variable cost because the only difference between total cost and total fixed cost is the constant amount of fixed cost. Thus the change in TC and that of variable cost for an extra unit of output is always the same. A typical MC curve first shows a decline, it reaches the minimum and then rises. This shape of MC curve is a consequence of the law of diminishing returns.

Relationship between the marginal cost curve of the firm and the supply curve of the industry can only be established in a perfectly competitive market.

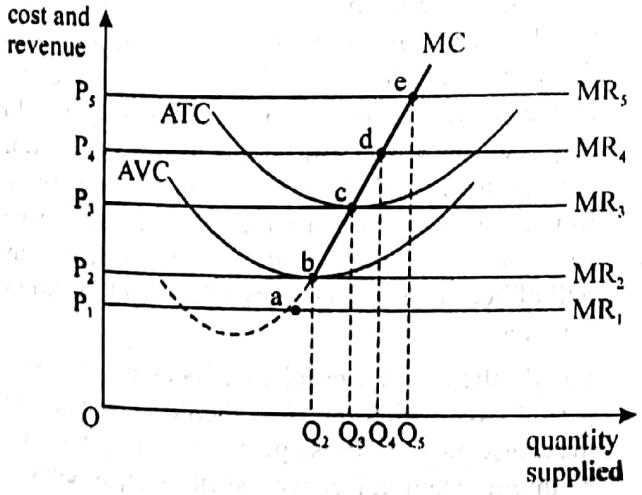
Perfect competition is characterized by large number of relatively small firms producing homogeneous products in the absence of entry exit barriers. Price in such conditions is determined by total demand and supply forces in the market and each individual firm produces such a small fraction of total output that a change in its output does not affect the total market supply. Thus all the firms are price takers and each firm faces a perfectly elastic demand curve.

For a perfectly competitive firm its demand curve is simultaneously its average revenue (AR) and marginal revenue (MR) curve i.e. AR=MR=Price. Profit maximization rule suggests that firm maximizes revenue or minimizes loss where MC = MR as shown in the graph below:



Thus the profit-seeking competitive firm, faced with certain costs, would choose to offer OQ output at OP price because firm's MC = MR. Since P = MR therefore this information — product price and corresponding quantity supplied — gives us a point on the supply curve for the competitive firm.

The graph below illustrates the MR = MC rule and the relationship between short-run MC and the firm's supply behavior. The ATC, AVC, and MC curves are shown, along with several marginal-revenue lines drawn at possible market prices. Let's observe quantity supplied at each of these prices:



In the graph above price OP_1 is below the firm's minimum average variable cost, so at this price the firm won't operate at all. Quantity supplied will be zero, as it will be at all other prices below P_2. Price P_2 is just equal to the minimum average variable cost. The firm will supply units of output (where $MR_2 = MC$) and just cover its total variable cost. Its loss will equal its total fixed cost. Actually, the firm would be indifferent shutting down or supplying Q_2 units of output but we assume it produces.

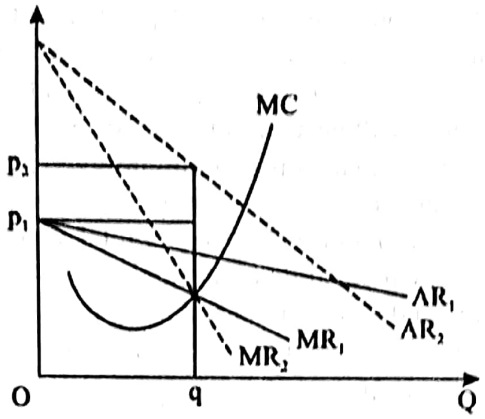
At price P_3 the firm will supply Q_3 units to minimize its short-run losses. At any other price between P_2 and P_4 the firm will minimize its losses by producing and supplying the quantity at which MR (= P) = MC.

The firm will just break even at price P_4. It will supply Q_4 units of output (where $MR_4 = MC$), earning a normal profit but not economic profit i.e. total revenue will just cover total cost, including a normal profit.

Note that each of the MR (= P) = MC intersection points labeled b, c, d and e in Figure above indicates possible product price corresponding quantity which the firm would supply at that price. Thus, points such as these are on the upward sloping supply curve of the competitive firm. Note too that quantity supplied would be zero at any price below the minimum average variable cost (AVC). Therefore we conclude that the portion of the rising marginal-cost curve lying above average-variable-cost curve is short-run supply curve. In Figure the solid segment of the marginal cost curve MC is this firm's short-run curve because it tells us the amount of output the firm supplies at each price. However, in the long run the rising portion of long run marginal cost curve (LRMC) above long run average cost curve (LRAC) is the firm's supply curve.

So far we have developed the competitive firm's short run supply curve by applying the MR(= p) = MC. We can now derive the industry's supply curve by adding the supply curves of the individual competitive firms. Thus the industry's supply curve is the horizontal sum of the rising portion of MC curves of all individual firms.

On the contrary monopolist has no supply curve because there is no relationship between price and quantity supplied. Like the competitive firm, the monopolist equates MR and MC to determine output, but for the monopolist MR is less than price. Because the monopolist does not equate MC to price, it is possible for different demand conditions to bring about different prices for the same output. To consider this we use the following graph:



The MR_2 intersects the MC curve at the same point, as does the MR_1. With the AR_2 and MR_2 the same output OQ now corresponds with a higher profit maximization price.

In conclusion a relationship between the marginal cost curve of the firm and the supply curve of the industry can be established only in a perfectly competitive market. However, no such relationship exists in any other form of market structure.

Question 8

Explain the economic theory of profit maximisation for a firm and consider whether firms are likely to follow this theory in fixing their price and output. [13]

[J11/P4/Q4(b)]

Essay

The traditional theory of the firm tends to make a standard assumption that businesses possess the information, market power and motivation to set a price and output that maximises profits in the short or long run.

Economic theory of profit maximsation suggests that if a firm decides that production is worth under taking, it must then decide how much to produce in order to earn maximum possible profits. The key to decide the level of output is that the firm should carry out an analysis on a unit-by-unit basis. If any unit of production adds more to revenue than it does to cost, producing and selling that unit will increase profits. However, if any unit adds more to cost than it does to revenue, producing and selling that unit will decrease profits. In economic terminology, a unit of production raises profits if the marginal revenue (MR) obtained from selling it exceeds the marginal cost (MC) of producing it. Alternatively it lowers profits if MR is less than MC of producing it.

Thus we say that if MR is greater than MC the firm should expand its output. However, if the firm's MR is less than MC the firm should reduce its output. From this it follows that firm maximizes profits at the level of output where its MR = MC. Any output below this, the firm is sacrificing potential profit, whilst any output above it is being sold at a loss, reducing the firm's total profit. Profit maximization therefore is an ideal for firms to work to.

A criticism of the traditional profit maximizing theory sometimes put forward is that firms do not use *MR* and *MC* concepts. It is argued that, in practice, it may be difficult to apply mainly because of inability of firms to calculate MC and MR with precision. Instead the firms prefer to simply work out the cost per unit and add on a profit margin in order to determine the selling price. The cost plus pricing is unlikely to result in maximum profit, although it could produce a high level of profit.

The main difficulty in trying to maximise profits using MC and MR approach is a lack of information. Firms may well use accountants' cost concepts not based on opportunity cost. In such a case it is impossible to measure true profit.

More importantly, firms are unlikely to know precisely (or even approximately) their demand curves and hence their *MR* curves. Even though they will know how much they are selling at the moment, this only gives them one point on their demand curve and no point at all on their *MR* curve. In order to make even an informed guess of marginal revenue they must have some idea of how responsive demand will be to a change in price.

Market research may help. But even this is frequently very unreliable. Such information takes time to acquire and action, by which time market conditions may have changed, thus making the information out of date.

The biggest problem in estimating the firm's demand curve is in estimating the actions and reactions of other firms and their effects. Collusion between oligopolists or price leadership would help, but there will still be a considerable area of uncertainty, especially if the firm faces competition from abroad. Even other industries' product may be substitutes or complements to some degree, thus will affect the price elasticity of demand for firm's product.

Finally there is the problem of deciding the time period over which the firm should be seeking to maximise profits. Firms operate in a changing environment. Demand curves shift; supply curves

shift. Some of these shifts occur as a result of factors outside the firm's control, such as changes in competitors' prices and products, or changes in technology. Some, however, change as a direct result of a firm's policies, such as an advertising campaign, the development of a new improved product, or the installation of new equipment. The firm is not, therefore, faced with static cost and revenue curves from which it can read off its.

The assumption of profit maximization is now criticised by economists who believe that modern corporations are complex organizations made up of various groups or stakeholders such as, employees, managers, shareholders and authorities. Each of these groups is likely to have different goals at different points in time. The dominant group at any moment in time can give greater emphasis to their own objectives – for example price and output decisions may be taken at local level by managers – with shareholders taking only a distant and imperfectly informed view of the company's performance and strategy.

These economists argue that a business might have profitability as an important long-term aim; it might depart from this in the short term in order to achieve a variety of different objectives.

For instance, a firm choosing to maximize sales revenue would raise output beyond MC = MR until MR had fallen to zero. In this case the firm may be willing to accept lower short term profit in order to increase its share of the market. This is also possible when businesses correlate annual raise in salaries and other perks with total sales revenue and rapid growth rather than profits. Hence managers may be assumed to want to maximize their own utility by perusing sales revenue maximization and growth.

Alternatively, the firm might opt to maximize the volume of sales rather than sales revenue. In this option the firm would increase output up to the break-even level where the total revenue just covered the total cost. A higher output implies loss-making behaviour. The only situation where this would be possible is where the firm could use the profit from some other activities to cover these losses, using the principle of cross subsidisation. The most likely motive for loss-making behaviour is to gain a toehold in a new market or to deter new entrants into an existing one.

Satisficing behaviour would occur when a firm is determined to make a reasonable level of profits to satisfy the shareholders but also to keep the other stakeholders happy. It may choose to sacrifice profit in order to improve the workforce's pay and conditions or to keep prices down for the benefit of consumers. Satisficing can also be a feature of firms that have enjoyed a high market share over a long period of time. Complacency can lead to firms losing their focus on the cost structure or failing to devote resources to either product or process innovation. Either situation can lead to a loss of profits. Also some firms may have charitable or environmental objectives, which must be financed at the cost of profit.

In conclusion, practically the objectives and targets of a corporation or small enterprise will evolve to meet changing economic conditions. But as a working assumption, it is still valid to see profit maximization as the major long term objective influencing firm's competitive behaviour.

Question 9

(a) Explain why there may be different levels of profit within perfect competition and between perfect competition and monopoly. [12]

(b) Discuss whether the average variable cost has any significance in a perfectly competitive market structure in determining (i) the output produced by a firm and (ii) the profit of a firm. [13]

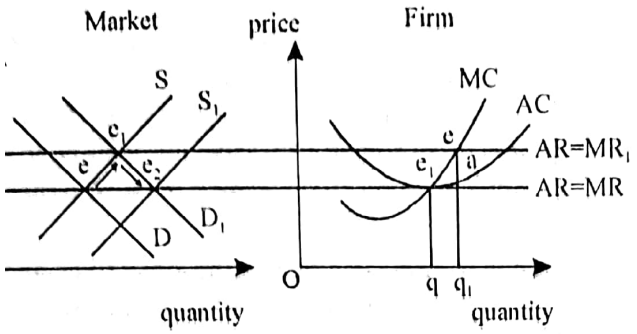
[J12/P4/Q3]

Essay

(a) Perfect competition describes the market structure where large number of relatively small firms produce homogeneous product that are perfect substitute. This leads to all firms being "price takers" with a perfectly elastic demand curve for their product. In addition to this there exists perfect freedom of entry and exit from the industry. This implies that firms face no sunk costs and entry and exit from the market is feasible in the long run. Moreover, consumers have all readily available information about prices and products from competing suppliers and can access this at zero cost. Likewise sellers have perfect knowledge about their competitors. Furthermore, the inputs - land, labour and capital can be switched in response to changing market conditions, prices and incentives.

Since the individual firm is powerless to change the price of its product, therefore, it maximizes profit by adjusting output to the point where its marginal revenue equals marginal cost. In such conditions profit may range from abnormal, normal and subnormal in the short run. However, due to the ab-

ɜence of entry exit barriers, profit is maintained at ıhe normal level in the long run. The graph below illustrates this;

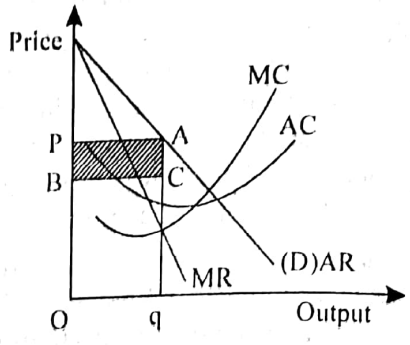


In the short run, the interaction between demand and supply determines the "market-clearing" price OP. This price is taken by each firm. The average revenue curve is their individual demand curve. Since the market price is constant for each unit sold, the AR curve also becomes the marginal revenue curve (MR) for a firm in perfect competition. For the firm, the profit maximising output is Oq where its MC = MR. This output generates a total revenue (OP × Oq) which is the same as total cost (e_1q × Oq). In this situation the firm is said to earn normal profit because the AC incorporates the element of normal profit. It is the minimum level of profit required to keep factors of production in their current use.

Let's now assume that an increase in the market demand to D_1 raises the price to P_1. The firm adjusts its output to q_1 because its MC = MR_1 at point e. In this case the firm is earning abnormal profit because its AR is greater than AC. If most firms are making abnormal profits in the short run, this encourages the entry of new firms into the industry. This will cause an outward shift in market supply forcing down the price. The increase in supply will eventually reduce the price until price = long run average cost. At this point, each firm in the industry is making normal profit. Other things remaining the same, there is no further incentive for movement of firms in and out of the industry and a long-run equilibrium has been established.

Similarly firms may earn sub normal profits in the short run. However, the loss will not persist in the long run because some firms will be forced to leave the industry. This will decrease the market supply and increase the price to the level where remaining firms earn normal profit.

Unlike perfect competition a pure monopoly exists when there is a single seller of a product for which there is no close substitute. The firm is the industry and is usually protected from actual competition by a number of entry barriers. This means that the monopolist faces a downward sloping demand curve as shown in the figure below;

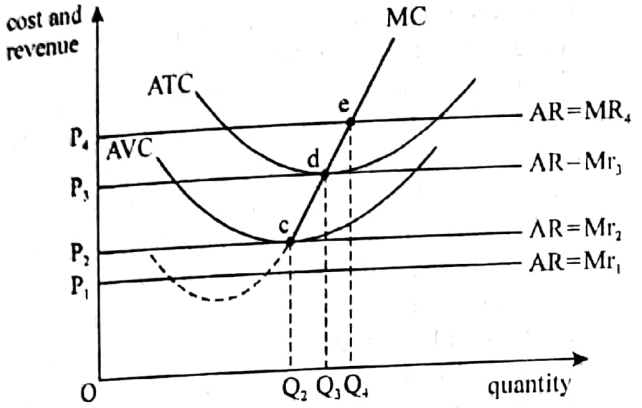


Since the demand curve (AR) is downward sloping, MR must be less than AR. The monopolist maximizes profit where its MC = MR. The price charged is OP and the output OQ. This results in supernormal profit highlighted by the area PBAC in the graph above. As with perfect competition monopolist may undergo a short period sub normal, normal or supernormal profit. However, in the long run the monopolist, unlike perfect competition, is expected to continue to earn supernormal profit owing to the existence of entry barriers. Control over, for instance, the supply of raw material will create an effective barrier to entry. In certain markets legal protection such as patents or copy rights might prevent the emergence of competition. In certain other industries there may be a natural tendency towards monopoly. This is especially true of industries where economies of scale result in average cost to fall as output expands.

Thus it follows that in a perfectly competitive market there may be different levels of profit in the short run but the market continue to earn normal profit in the long run. However level of profit in the long run are different within monopoly and perfect competition mainly due to the existence of effective entry barriers in the former.

(b) (i) In the short run, because at least one factor of production is fixed, output can be increased only by adding more variable factors. Hence the portion of total costs incurred on variable factors is called variable costs. These costs vary directly with output. Examples of variable costs include the costs of intermediate raw materials and other components, the wages of part-time staff or employees paid by the hour etc. Firms calculate average variable cost (AVC) by dividing their total costs (TC) on output. AVC is a useful measure in the short run particularly when the firm is in a loss making position and therefore, needs to decide whether to continue production or shut down.

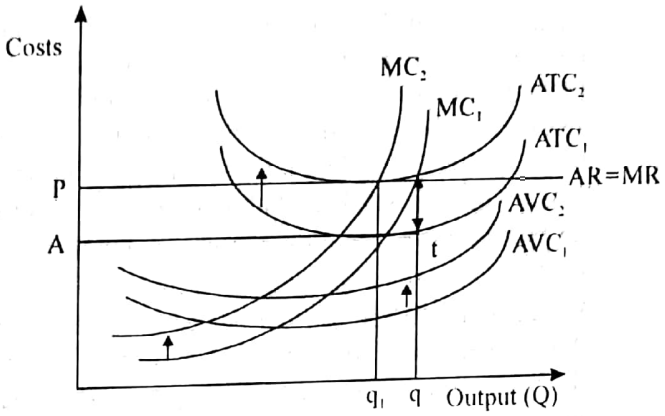
The graph below illustrates the output decisions of a perfectly competitive firm operating in the short run. The profit maximizing rule MR = MC shows the relationship between short-run MC and the firm's supply behavior. The ATC, AVC, and MC curves are shown, along with several AR = MR lines drawn at possible market prices. Let's observe output produced and supplied at each of these prices:



In the graph above market price P_1 is below the firm's minimum average variable cost, so at this price the firm will decide not to oper-ate at all. Quantity supplied will be zero, as it will be at all other prices below P_2. This is because the market price below AVC will have loss on VC that the firm can avoid by closing down. On the other hand P_2 is just equal to the minimum average variable cost. The firm will supply Q_3 (where MR_2 = MC) and will just cover its total variable cost. Now the firm's loss will equal its total fixed cost. Actually, the firm would be indifferent shutting down or supplying Q_2 units of output because the loss on FC is unavoidable in the short run, however, we assume it produces.

Thus in the short run a loss making firm will continue to produce as long as its AVC is below the market price. A market price below the minimum level of AVC will induce the firm to discontinue its output at least in the short run.

(ii) The profit maximizing output is determined by a firm's MC = MR and on this output the level of profit / loss is measured by comparing average costs and average revenue. For a firm operating in a perfectly competitive market AR = P and AC represents per unit costs. AC in the short run is obtained by adding average fixed costs and average variable cost. AC = AFC + AVC. So a change in AVC will have an impact on both the firm's AC and MC. In return change in MC will have impact on the firm's equilibrium output and change in AC will influence the firm's level of profits. Consider the following graph.



At price P firm's MC_1 equals its MR at point 'e' and therefore the profit maximizing output is oq. At this output AR (eq) minus AC (bq) indicates average profit PA. This average profit multiplied by output (oq) gives total profit PAbe. Now let's assume that the firm's average variable cost rise thus shifting the curve to AVC_2. As a result firm's marginal and average total cost also rise to MC_2 and AC_2. This eliminates the abnormal profit and reduces the firm's profit to the normal level where its AC = AR. Any further increase in the firm's AVC will force its AC to rise above AR leading the firm into loss.

Thus in the short run, a change in the firm's AVC influences the level of profit earned by a perfectly competitive firm.

Question 10

(a) Explain what is meant by an oligopoly market and why prices might fluctuate less in an oligopoly market than in a perfectly competitive market. [12]

(b) Discuss whether a firm in monopolistic competition is more likely to act in the public interest than a firm that is a monopoly. [13]

[N12/P4/Q3]

Essay

(a) Oligopoly refers to a market where there are a few relatively large firms in the market usually producing a large number of brands. Each firm is of a sufficiently large size so that the decision taken by one firm will affect the decisions taken by the other

firms in the market. The firms are, therefore, mutually dependent. Thus it is an industry where there is a high level of market concentration. This implies that the number of firms is small enough for each firm to realize that its competitors may respond to anything that it does and that it should take such possible responses into account. Therefore, there is no single theory of how firms determine price and output under conditions of oligopoly. In addition to product branding it is assumed that barriers to entry are fairly substantial and knowledge is by no means perfect, as in the perfectly competitive market.

Perfect competition, on the other hand, describes the market structure where large number of relatively small firms producing homogeneous product that are perfect substitute. This leads to all firms being "price takers" with a perfectly elastic demand curve for their product. In addition, there exists perfect information and freedom of entry and exit from the industry. Since the individual firm is powerless to change the price of its product, therefore, it maximizes profit by adjusting output to the point where its marginal revenue equals marginal cost. Price in such a market, therefore, changes due to the change in market forces of demand and supply.

However in oligopolistic market firms, in order to decide on pricing strategies, face a basic dilemma between competition and cooperation. Thus there is a possibility of price competition. But price wars prove to be costly therefore they are short lived.

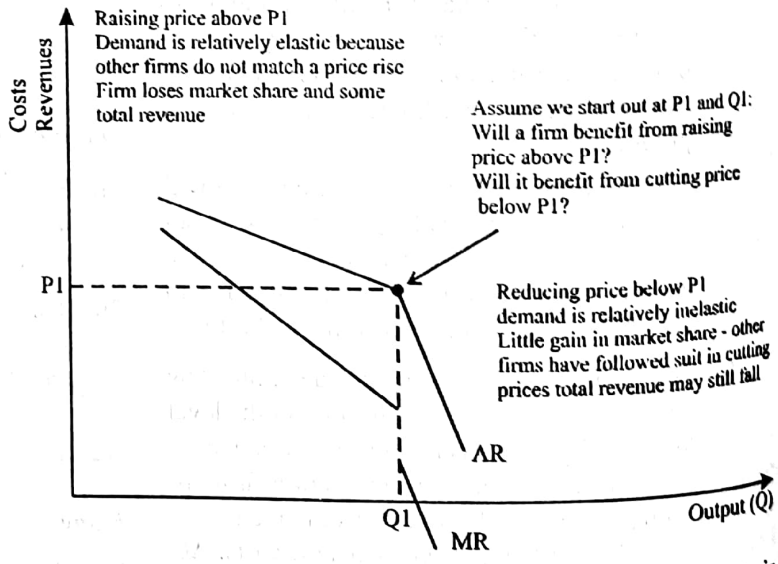
Due to the threat of price wars and the existence of effective alternative strategies, oligopolists may engage in non-price competition. This can take a number of different forms such as product differentiation, where oligopolists can, through advertising, create a brand image for their product. The firm may offer a particular after-sales service or package the product in a particular way.

However, there is much to be gained from cooperation in the form of collusion. Collusion is an agreement on price charged and level of output produced. Thus it makes it possible for oligopolists to act as a monopoly and achieve maximum profits for the industry.

Collusion can take different forms. It can be a formal or overt collusion, with agreement being reached between the firms as to what price to charge or what output to produce. This type of formal agreement is known as a cartel and is illegal in many countries. The other type is called tacit collusion. This is where firms behave in a cooperative way but do not have a formal agreement. The most common form of tacit collusion is price leadership where price set by one firm becomes the benchmark for other firms.

Often the price leader in an oligopolistic market is the dominant firm. In this situation the largest or the most efficient firm takes the lead in setting the price which the other firms follow, possibly because they fear that not doing so would lead to a price war. The other form of price leadership is called barometric price leadership. The price leader may be a small firm but one which has a close knowledge of the market and the prevailing economic conditions. In this situation the barometric firm may institute a price change which the other firms in the oligopolistic market follow.

Price rigidity in a non-collusive oligopoly is explained by the kinked demand curve. It assumes that a business might face a dual demand curve for its product based on the likely reactions of other firms in the market to a change in its price. The common assumption of the theory is that firms in an oligopoly are looking to protect and maintain their market share and that rival firms are unlikely to match another's price increase but may match a price fall. The graph below illustrates this situation.



If a business raises price and others leave their prices constant, then we can expect quite a large substitution effect away from this firm making demand relatively price elastic. The business would

then lose market share and expect to see a fall in its total revenue.

If a business reduces price but other firms follow suit, the relative price change is much smaller and demand would be inelastic in respect of the price change. Cutting prices when demand is inelastic also leads to a fall in total revenue with little or no effect on market share. The kinked demand curve model therefore makes a prediction that a business might reach a stable profit-maximising equilibrium at price P1 and output Q1 and have little incentive to alter prices.

Thus the oligopolistic firms have to decide about particular pricing and output decision after taking account of possible reactions of rival firms. There is, therefore limited scope of price fluctuations rather in most situations firms maintain their prices and compete more on factors such as branding, quality variation, after sale services and advertisement.

(b) According to economic theory a monopoly exists when there is one firm in the industry. It is characterized by selling a unique product and high entry barriers. Compared with other market structures, demand under monopoly will be relatively inelastic at each price. This gives monopolist substantial powers to charge a high price. Nevertheless, it is still constrained by its demand curve i.e. a rise in price will lower the quantity demanded. In order for a firm to maintain its monopoly position there must be barriers to the entry of new firms. Barriers can be of various forms. Such as economies of scale, high capital cost, legal barriers and various marketing barriers.

While monopolistic competition incorporates feature of both perfect competition and monopoly. As with perfect competition there is freedom of entry into the industry. There are many relatively small firms in the market, each producing goods which are slightly different from their competitors. The existence of product differentiation means that firms have a certain degree of monopoly power, thus if they raise their price they do not lose all their buyers even though they produce products which are close substitutes. The result is a downward sloping relatively elastic demand curve. Thus a monopolistically competitive firm is not a price taker. Product differentiation can be reinforced through advertising which produces an element of brand loyalty.

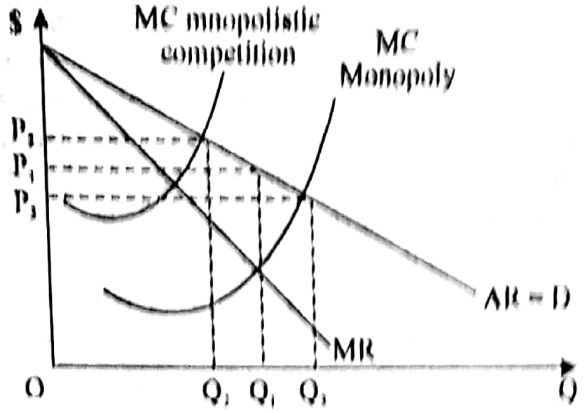
Under monopolisitic competition, freedom of entry eliminates supernormal profit and forces the firm to produce where its AR = AC. The effect is to keep the long run prices down. Under monopoly, however, barriers to entry allow profits to remain supernormal in the long run. Hence the monopolist is not forced to produce where its AR = AC. Thus, other things remaining the same, a comparison of profit maximizing position for an industry under monopoly with that of a firm in monopolistic competition reveals that long run price will tend to be higher and output lower under monopoly.

Furthermore, competition and availability of close substitutes requires the firm in a monopolistically competitive market to use the most efficient known technique. The monopolist sheltered by barriers to entry can still make large profits even if it is not using the most efficient technique hence it has less incentive to be efficient.

In addition to this monopolies may lack the incentive to introduce new product varieties and large monopolies may be able to exert political pressure and thereby get favourable treatment from the government. On the other hand public interest is better served because firms in monopolistically competitive market provide a wide range of choice for the consumers choose from.

There are at least two additional costs associated with monopoly. One involves the resources used by individuals in order to obtain and maintain monopoly. Society also ends up expending resources in preventing monopolies or trying to break them up. The other cost involves possible inefficiencies within the monopoly firm i.e. monopolist is necessarily X-inefficient i.e. costs are not minimized by effective management.

In our analysis the assumption was that increase in competition does not change the cost structure. Of course, if monopoly results in higher marginal cost, then the cost to society is even greater. However, if monopoly results in cost savings, then the cost to society is less. A monopoly, for instance, may be able to achieve substantial economies of scale due to larger plant, centralised administration and the avoidance of unnecessary duplication (e.g. a monopoly gas company would eliminate the need for several sets of rival gas pipes under each street). If this results in an MC curve substantially below that of the same industry under monopolistic competition, the monopoly will produce a higher output at a lower price. In Figure below the monopoly produces Q_1 at a price of P_1. Compare this with price P_2 and output Q_2 when market is monopolistically competitive.



It would benefit the society even more if the monopolist is forced by the government to follow marginal cost pricing (P = MC). The monopolist would charge the price P_3, even lower than P_1 and produce higher output i.e.Q_3. Also, the monopolist can use part of its supernormal profits for research and development and investment. It thus has a greater ability to become dynamically efficient than has the small firm with limited funds. Also, a perfectly contestable monopoly earns only normal profits and is as efficient as any other firm operating in a competitive environment.

Thus freedom of entry and hence lack of long run supernormal profits under monopolistic competition are likely to keep prices down for the consumer. However, on the other hand, monopolies are likely to achieve greater economies of scale and have more funds for research and development. Thus nothing definite can be concluded.

Question 11

'The purchases a consumer makes are based upon marginal utility. It is this alone that determines market equilibrium in perfect competition.
Supply has no relevance.'
Is this true? [25]

[N14/P4/Q2]

Essay

The theory of consumer behaviour explains consumer equilibrium with the help of equi-marginal principle. Utility is the satisfaction that people derive from the consumption of goods and services. TU is the total satisfaction a consumer obtains from the consumption of all the units of a good consumed. While MU utility is the satisfaction gained from consuming one extra unit of a good within a given time period. It is measured by: $TU_n - TU_{n-1} = MU_n$

The law of equi-marginal utility states that the individual consumer is in equilibrium when it is not possible to switch a single penny's worth of expenditure from one product to another and obtain an increase in total utility. This occurs when:

$$\frac{MU_a}{P_a} = \frac{MU_b}{P_b} = \ldots\ldots\ldots\ldots = \frac{MU_n}{P_n}$$

Where A,B, ... n are the various goods consumed.

The above equation states that the consumer equilibrium is where the marginal utility from the last penny spent on product 'a' equals the utility from the last penny spent on product b equals the utility from the last penny spent on product n, thus taking into account all of the products the individual consumes. When this situation is reached it is not possible for the individual to increase his total utility by reallocating expenditure. So the consumer equilibrium is important for it is where the consumer has allocated his or her income in such a way that maximum utility has been achieved. The analysis assumes the following:

Satisfaction can be measured in utils. A util is an imagi-nary unit of satisfaction from the consumption of a good. Consumer is rational, and therefore wants to maximize satisfaction also his taste and preferences are constant. Consumer has a fixed income, and he will be spending on two normal goods a and b. Product a costing £2.00 each and product b costing £4.00 each, and that the individual has an income per time period of £16.00. The table below will help to explain consumer equilibrium.

Product A (price £2.00 each)			Quantity demanded of product A and B	Product y (price £4.00 each)		
TU_a	MU_a	$\frac{MU_a}{P_a}$		TU_b	MU_b	$\frac{MU_b}{P_b}$
80	80	40	1	68	68	17
132	52	26	2	100	32	8
152	20	10	3	128	28	7
168	16	8	4	152	24	6
176	8	4	5	172	20	5

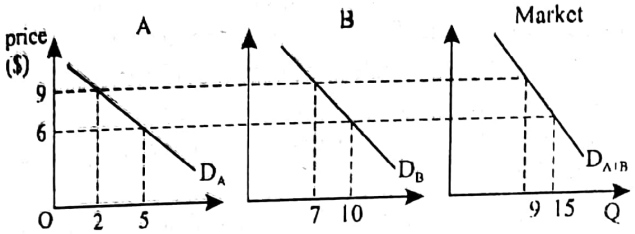
Given this situation, it can be seen that the consumer is in equilibrium when he consumes four units of product a and two of product b. Here MU/P is the same, i.e. 8 for both products. Note that in equilibrium the consumer obtains total utility of 268 utils and it is impossible for the consumer with an income of £16.00 to obtain a higher level of total utility.

It is also possible to use marginal utility as a means of deriving a demand curve. If in the table above price of product b were to fall to £2.00, then assuming everything else remained constant, there would be a new column for MU/P and a new equilibrium would result. In order to restore equilibrium consumer would reduce

consumption of product "a" by 1 unit and increase the consumption of product "b" by 3 units. , Hence, consuming 3 units of a and 5 units of b at the new equilibrium position. Thus a fall in price of product b would result in an increase in its QD. It, therefore, generates a downward sloping demand curve.

If this is what each consumer does, it is also what all consumers taken together do. Thus the theory of consumer behavior predicts a negatively sloped market demand curve.

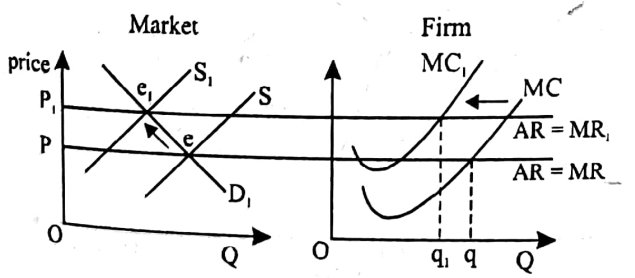
The market demand curve is the horizontal sum of the quantities demanded by all individual buyers at various prices per period of time. So market demand curve represents the aggregation of demand curves of all individual buyers. Assuming there are only three two buyers of the product and we have already derived the demand curve for individual buyers using utility principle. The graph below shows the aggregation.



The figure above illustrates the aggregation over consumers. At a price of $9 consumer A buys 2 units and consumer B buys 7 units; thus together they purchase 9 units, yielding one point on the market demand curve. We generate the second point on $6 in the same manner and hence derive the market demand curve. No matter how many consumers are involved, the process is the same. We simply need to add the quantities demanded by all consumers at each price, and the result is the market demand curve.

Perfect competition describes the market structure where large number of relatively small firms produce homogeneous product that are perfect substitute. This leads to all firms being "price takers" with a perfectly elastic demand curve for their product. Since price is determined by the market forces of demand and supply therefore the individual firm is powerless to change the price of its product. However, the firm maximizes profit by adjusting output to the point where its marginal revenue equals marginal cost.

The graph below illustrates this;



The rising portion of the firm's marginal cost (MC) curve is its supply curve. Market supply curve is the aggregation of marginal cost curves of all individual firms. Since the equilibrium price in the market is determined by the forces of demand and supply therefore a change in either demand or supply affects the market price. Now let's assume that the price of an important raw material increases that increases the MC of all firms. This results in a fall in market supply as shown by a shift from S to S_1, and causes the price to increase. Similarly a fall in MC of all firms will increase the supply and reduce the market price.

So we conclude that market supply is no less relevant in determining the price in a perfectly competitive market.

Question 12

Discuss the similarities and differences between a firm's likely price and output policy in perfect competition and oligopoly. [25]

[N14/P4/Q3]

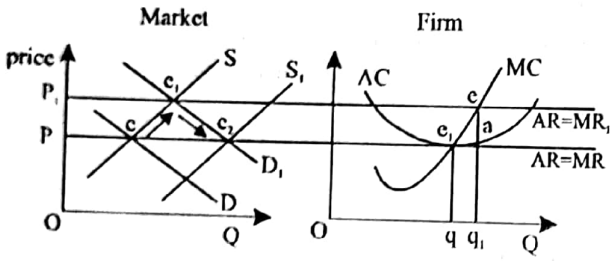
Essay

Oligopoly refers to a situation where there are a few firms in the market producing a large number of brands. Each firm is of a sufficiently large size that the decision taken by one firm will affect the decisions taken by the other firms in the market. The firms are, therefore, mutually dependent. On the other hand perfect competition describes the market structure where large number of relatively small firms produce homogeneous product that are perfect substitute. This leads to all firms being "price takers" with a perfectly elastic demand curve for their product. In addition to this there exists perfect freedom of entry and exit from the industry.

Both forms of markets are similar in a number of ways. Firstly, they both share the same objective of maximizing profit therefore they produce a level of output where their MC = MR. However the chances of earning abnormal profit are greater in oligopoly because of entry barriers. Firms in perfect competition earn only normal profit in the long run due to the ease of entry of new firms in the industry.

Secondly, firms in both markets face similar cost conditions. There is no difference in their cost structure and firms in both markets do take account of changes in their costs and revenues at varying prices. This is because a change in either cost or revenues has a bearing on the level of profit they earn.

However we can identify many differences in pricing and output policy between the two markets. Since the individual firm in a perfectly competitive market is powerless to change the price of its product, therefore, it maximizes profit by adjusting output to the point where its marginal revenue equals marginal cost. In such conditions profit may range from abnormal, normal and subnormal in the short run. However, due to the absence of entry exit barriers, profit is maintained at the normal level in the long run. The graph below illustrates this;



In the short run, the interaction between demand and supply determines the "market-clearing" price OP. This price is taken by each firm. The average revenue curve is their individual demand curve. Since the market price is constant for each unit sold, the AR curve also becomes the marginal revenue curve (MR) for a firm in perfect competition. For the firm, the profit maximising output is Oq where its MC = MR. This output generates a total revenue (OP × Oq) which is the same as total cost ($e_1q \times Oq$. In this situation the firm is said to earn normal profit because the AC incorporates the element of normal profit. It is the minimum level of profit required to keep factors of production in their current use.

Let's now assume that an increase in the market demand to D_1 raises the price to P_1. The firm adjusts its output to q_1 because its $MC = MR_1$ at point e. In this case the firm is earning abnormal profit because its AR is greater than AC. If most firms are making abnormal profits in the short run, this encourages the entry of new firms into the industry. This will cause an outward shift in market supply forcing down the price. The increase in supply will eventually reduce the price until price = long run average cost. At this point, each firm in the industry is making normal profit. Other things remaining the same, there is no further incentive for movement of firms in and out of the industry and a long-run equilibrium has been established.

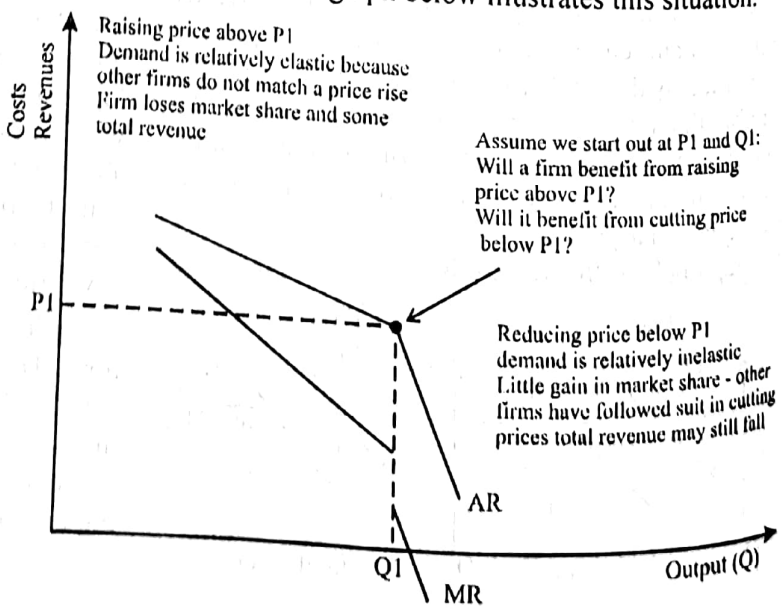
On the other hand oligopoly is an industry where there is a high level of market concentration. This implies that the number of firms small enough for each firm to realize that its competitors may respond to anything that it does and that it should take such possible responses into account. Therefore, there is no single theory of how firms determine price and output under conditions of oligopoly.

In addition to this an oligopoly exhibits product branding, entry barriers, interdependent decision making and non-price competition. All of these features lead to different pricing and output decisions in oligopoly than a perfectly competitive industry.

In deciding on pricing strategies, oligopolists face a basic dilemma between competition and cooperation. Unlike perfect competition there is a possibility of price competition. If a price war breaks out, oligopolists will produce and price much as a perfectly competitive industry. But price wars prove to be costly therefore they are short lived. Due to the threat of price wars and the existence of effective alternative strategies, oligopolists may engage in non-price competition. This can take a number of different forms such as product differentiation,. where oli-gopolists can, through advertising, create a brand image for their product. The firm may offer a particular after-sales service or package the product in, a particular way.

However, there is much to be gained from cooperation in the form of collusion. Collusion is an agreement on price charged and level of output produced. Thus it makes it possible for oligopolists to act as a monopoly and to achieve maximum profits for the industry.

Pricing strategy in a non-collusive oligopoly is explained by the kinked demand curve. The kinked demand curve assumes that a business might face a dual demand curve for its product based on the likely reactions of other firms in the market to a change in its price. The common assumption of the theory is that firms in an oligopoly are looking to protect and maintain their market share and that rival firms are unlikely to match another's price increase but may match a price fall. The graph below illustrates this situation.



If a business raises price and others leave their prices constant, then we can expect quite a large substitution effect away from this firm making demand relatively price elastic. The business would then lose market share and expect to see a fall in its total revenue.

If a business reduces price but other firms follow suit, the relative price change is much smaller and demand would be inelastic in respect of the price change. Cutting prices when demand is inelastic also leads to a fall in total revenue with little or no effect on market share. The kinked demand curve model therefore makes a prediction that a business might reach a stable profit-maximising equilibrium at price P_1 and output Q_1 and have little incentive to alter prices.

So, the two markets are similar in terms of their objectives and calculation of their costs, revenues and profit. However they adopt different pricing and output policies in order to maximise profit due to the different market conditions.

Question 13

(a) A firm in a perfectly competitive market and a firm with a monopoly both seek to maximise their profit. Explain, with the help of a diagram, why the levels of price and output might be different in the two markets. [12]

(b) Discuss whether it is always true that a firm, rather than maximising its profits while remaining small, will seek to grow in size. [13]

[J15/P4/Q3]

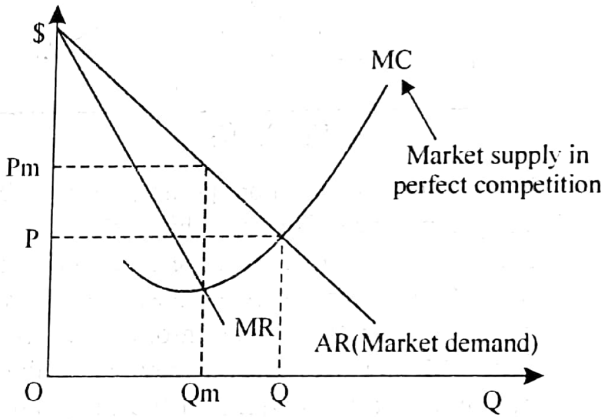
Essay

(a) The theory of firm assumes that all firms, regardless of market conditions, aim to maximize profit. It means that they produce an output where the last unit sold earns as much as it costs. This is generally used as a rule for profit maximization and is written in an equation as MC = MR. Where MC stands for marginal cost, the cost of producing an extra unit. MR stands for marginal revenue, a measure that indicates the addition to the revenue earned from selling an extra unit.

Perfect competition is one of many different types of market conditions that economist use to explain a firm's behavior. It is characterized by large number of relatively small firms producing homogeneous products in the absence of entry exit barriers. Price in such conditions is determined by total demand and supply forces in the market and the huge number of sellers and enormity of the market suggest that none will have enough market power to influence the price through its own individual actions. Thus all the firms are price takers and each firm faces a perfectly elastic demand curve which it uses it to determine its profit maximizing output.

A monopoly, however, exists when there is one firm in the industry. It is characterized by selling a unique product and existence of high entry exit barriers. Compared with other market structures, demand under monopoly will be relatively inelastic at each price. This gives monopolist substantial powers to charge a high price. Nevertheless, it is still constrained by its demand curve i.e. a rise in price will lower the quantity demanded.

So according to the theory price and output levels may vary from one type of market to another. The graph below can be used for a comparative analysis of a perfectly competitive firm and a monopoly in the short run.

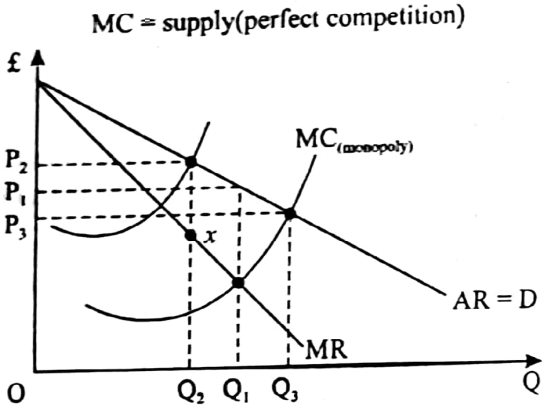


The graph represents the market in a perfectly competitive situation The AR curve is the market demand curve and MC represents the sum of MC curves of all individual firms, it, therefore, represents market supply curve. So this intersection of market demand and supply determines OP as the equilibrium price in the market and all individual firms use this to set their own output levels. Since each firm can sell how much it produces at this price therefore an individual firm's demand curve is drawn as infinite elastic.

Let's assume that somehow the industry is monopolized by a single firm. The market demand curve now becomes the monopolist demand curve. So now the monopolist is facing a downward sloping demand curve that produces an MR curve below his AR curve. It suggests that MR now will be less than AR = P at each level of output, This is because if the monopolist chooses to sell more he must reduce his price and when he does that the cut in price applies to the total quantity that causes his MR to fall more than the cut in price. The

supply curve in the market now represents MC curve of the monopolist. Assuming no change in cost conditions the profit maximizing rule MC = MR now results in a higher price and lower output than that of a perfectly competitive industry.

In the long run, however, if monopolist is able to achieve substantial economies of scale say due to a larger plant, centralized administration etc. the result may be different. If that is the case it may result in an MC curve substantially below that of the same industry under competitive market, monopoly may produce a higher output at a lower price.



In the figure above monopolist produces Q_1 and charges p_2 price. Compare this with price p_2 and output Q_2 when market is perfectly competitive (QD = QS). Perfectly competitive price is higher and output lower than what monopoly produces (MC = MR). This, however may not be the usual outcome in all situations in the long run. Even when a monopolist benefits from economies of scale in pursuit of even higher profits he may well be charging a price higher and selling a lower output than a perfectly competitive firm.

So, firms in varying market conditions may sell different quantities at different prices when they seek to maximize profit.

(b) The traditional theory of the firm tends to make a standard assumption that businesses, regardless of their sizes, possess the information, market power and motivation to set a price and output with the view to maximize profits in the short or long run.

However, in real world firms do not always want to maximize profit while remaining small. A few more ambitious entrepreneurs may prefer other alternative objectives to profit maximization such as growth, or sales revenue maximization etc.

In many cases firms target growth as their objective. This is particularly true when firms look to reduce their average costs and hence take advantage of economies of scale. These advantages come in a variety of ways known as technical, marketing, financial, managerial and risk bearing economies.

As a firm grows in size it may, for instance, benefit from increased specialization. The firm may also gain on marketing its products. When, for instance, a firm buys its raw materials in bulk it may obtain preferential terms in the form of a discount, thus reducing the cost of each unit. On the financial front a larger firm may be able to obtain finance on favourable terms, obtaining loans from financial institutions at lower rates of interest. In addition to this a large firm normally produces more than one product and therefore takes advantage of economies of scope. Economies of scope refer to the reduction in average total cost (ATC) made possible by a firm increasing the number of different goods it produces. The reason is that the firm is able to take advantage of skilled staff and technology which can be shared by the different goods produced.

Economies of scale have the effect of increasing the productive capacity of the business and they help to raise profit margins. They also give a business a competitive edge in domestic and international markets. In other cases firms may wish to grow to increase their market dominance thereby giving them increased pricing power in specific markets. Monopolies, for example, can engage in price discrimination. Also the expansion of a business might be motivated by a desire to diversify production and sales so that falling sales in one market might be compensated by healthier demand and output in another market.

This is not all, in fact in some cases a firm may try and maximize sales revenue. It typically involves businesses charging lower prices for their products contrasted with profit maximisation. Usually the underlying objective is to achieve a rapid growth of market share subject to the constraint that they need to achieve a minimum rate of profit (normal profit). This usually is typical with manager-controlled businesses where the annual salaries and other perks might be more closely correlated with total sales revenue rather than profits.

However, it is also true that small firms such as sole traders and many partnerships, while operating with the view to maximize profit, prefer to remain small. One of the prime reasons for this continued existence of small concerns is the desire to be one's own boss; once this desire is met entrepreneurs may be content with a relatively quiet life and achievement of a satisfactory level of profit.

Not only this the firm may remain small in order to take advantage of a low price elasticity of demand and high income elasticity of demand for specialist "niche' goods and services - these products can be sold at a higher price and with a bigger profit margin. Also some firms remain small because they can avoid diseconomies of scale associated with larger firms.

It, therefore, follows that some firms may seek to grow in size while others can target profit maximization even when they intend to remain small.

Question 14

Consumers decide what they wish to buy and as a result direct the market. Producers develop new products, which they then promote by advertising, in order to maximise profits. Without producers there would be no products to buy.

(b) Discuss whether the market is dominated more by producers or by consumers. [13]

[N15/P4/Q2(b)]

Essay

(b) Markets are dominated by consumers when resources are allocated according to their wishes. This usually occurs in a perfectly free market. Consumer spending is comparable to votes in an election. The businesses which receive the most votes will be able to purchase the factors of production needed to produce the goods demanded by consumers. Therefore the firms receiving no votes will go out of business.

Total consumer sovereignty only exists if there is perfect knowledge or perfect information in the market place. If consumers are to allocate their resources in a way that maximise their utility, they need to know about the products they are buying. In many cases, consumers are well placed to make consumption decisions. A consumer, for instance, is likely to be the best judge of whether to buy bananas or apples.

So far as the theory of firms is concerned, consumer are said to be sovereign in a perfectly competitive market. Perfect competition is characterized by large number of relatively small firms producing homogeneous products in the absence of entry exit barriers. Price in such conditions is determined by total demand and supply forces in the market and each individual firm produces just a fraction of total output, therefore, a change in output by an individual firm does not affect the total market supply and hence the market price. Thus all the firms are price takers and each firm faces a perfectly elastic demand curve.

So, due to the highest degree of competition among firms, it is the collective decisions of consumers that decide what is produced, the quality, the distribution and the price charged. Firms producing products against the wishes of consumer would find it hard to survive. The consumer gains from the low price, since not only are costs kept low, but also there are no long run supernormal profits to add to cost. The consumers also enjoy allocative efficiency as not only they consume the products that they demand for but consume them up to the desired level. The consumer surplus is also maximised in that the consumers pay the lowest price possible for all quantities bought.

However, there are markets where consumers' dominance does not exist and they have to surrender their sovereignty to producers mainly due to the lack of sufficient competition. In a monopoly market situation the consumer would not be 'king'. This is because the producer, due to his better bargaining position, would decide on what to be produced, how to be produced, how much and for whom to be produced. The monopolist can raise its price and consumers have no alternative firm to turn to within the industry. They either pay a higher price or go without the good altogether. Unlike perfect competition, where consumers' preferences are given the highest weightage, it is monopolist who decides the price, and as he reduces the quantity, he raises the price. Thus consumer surplus is reduced. Also, monopolist, due to lack of competition, has little incentive to improve on his products or efficiency. All these weaken consumer sovereignty and therefore, undermine consumer's welfare.

In many imperfect markets, like those for cars, television sets or computers, consumers make infrequent purchases. If they buy, and find for whatever reason that they don't like the product, then it is very expensive to make a fresh choice. When they come to replace an item the product range may have changed completely. This is different from markets like food where consumers are making frequent purchases. In the food market, consumers can experiment at little cost and find the products they prefer. So in general, the less frequent the purchase, the less likely it is that consumers will have considerable influence on market decisions.

Furthermore, on many occasions consumers may not be capable of making rational choices because of the technical nature of the product. For instance, consumers for the most part are unable to tell which make of freezer has the best insulation, which television set has the most durable components. Thus, markets in such industries are more likely to be dominated by producers because consumers ultimately have to rely on information provided by the sellers.

In conclusion, consumers' control is expected to exist in markets that are charged with competition and also where information is perfect such as perfect competition. However, consumer sovereignty is weakened when the degree of competition in a market is low or the market does not provide complete information to the consumers. Thus the balance between producer and consumer dominance may vary from one type of market to another.

Question 15

The traditional theory of the firm assumes a single objective for the firm, namely the maximisation of profit.

(a) Explain whether a firm with this objective necessarily always makes a profit. [12]

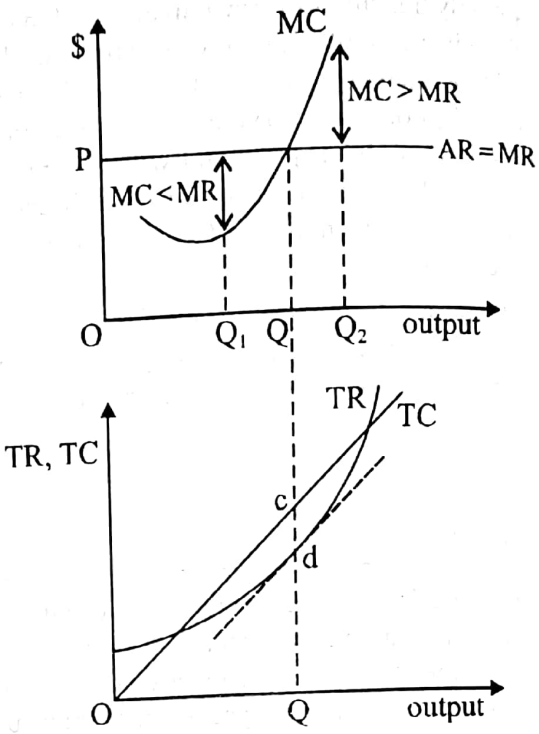
(b) Discuss how the objective in the traditional theory may be varied in different market structures. [13]

[J16/P4/Q5]

Essay

(a) Standard economic theory of the firm assumes that a firm's behaviour is guided by its goal to maximise profit. It involves determining the level of output that the firm should produce to make profit as large as possible.

There are two approaches to analyse profit maximisation (or loss minimisation): one involves use of the total revenue and total cost concepts, and the other involves use of marginal revenues and marginal costs. Both these approaches yield the same results. Consider the graphs below;



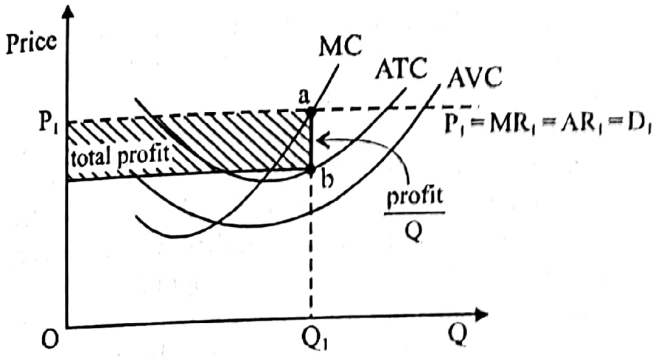
According to the rule, MC = MR, the point of intersection between the MC and MR curves determines the profit-maximising level of output; this is OQ in the upper part of the figure. Now Consider this firm producing output Q_1, where MR > MC. If it increases its output by one unit, the additional revenue it would receive (MR) will be greater than its additional cost (MC). Since each additional unit produced will add to its profit therefore increasing output will raise firm's total profit. It is therefore in the firm's interests to increase its level of output until it reaches OQ where MR = MC. If it continues to increase output beyond OQ, say to Q_2, where MR < MC, the additional revenue it would receive for an extra unit of output is less than the additional cost, and so if it cuts back on output to OQ its total profit will increase. There is only one point where the firm can do nothing to improve its position, and that is OQ, where MR = MC, and profit is the greatest.

In the lower part of the graph we put together TR and TC curves. It shows the total revenue curve of a firm with no ability to influence price. We look at levels of output where TR lies above TC, and find the Q where the difference between TR and TC is largest. This occurs at OQ, where profit is the vertical distance between points c and d.

So if the difference is positive, the firm is making a profit.

Firms, however, do not always make a profit therefore if the difference between TR and TC is negative, the firm is making a loss; if it is zero, the firm is earning normal profit. Positive economic profit is also known as supernormal profit, or abnormal

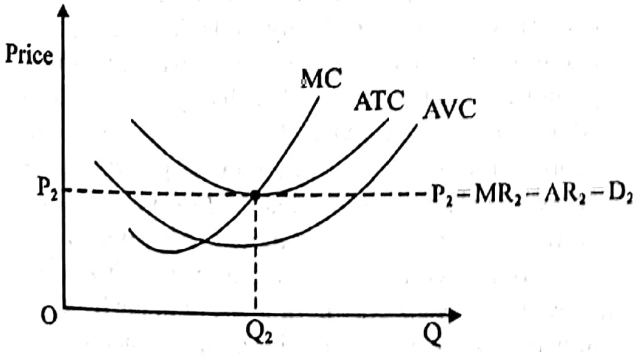
profit. It is the excess of total revenue over opportunity cost of doing business (TR > TC). In a perfectly market conditions in short run a firm may face all possible situations. Since a perfectly competitive firm is a price-taker, it cannot influence its selling price. It can only make a choice on how much quantity of output it should produce. This is explained on the graphs below;



In graph, market price is P_1, $P_1 = MR_1 = AR_1 = D_1$ represent the demand curve facing the firm. Using the rule MR = MC, the intersection of the MR and MC curves determines the firm's profit-maximising level of output, Q_1.

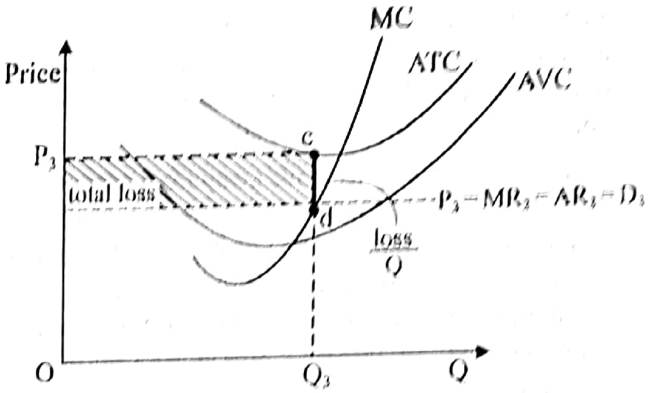
We then compare P_1 with ATC along this same vertical line at the level of output Q_1. Since P1 > ATC, we conclude the firm is making economic profit per unit equal to P_1 – ATC, represented by the vertical distance between points a and b. To find total profit, we multiply profit per unit times the total number of units produced

However if TR = TC it refers to zero economic profit; the firm is earning normal profit. We define normal profit as the minimum amount of revenue that the firm must receive so that it will keep the business running. So when we say that the firm is 'earning normal profit', the firm is earning just the necessary revenues to cover payment for entrepreneurship (a cost) and all other implicit costs of self-owned resources, after revenues have also covered explicit costs. Consider the graph below;



In graph, the market-determined price falls to P_2, corresponding to demand curve D_2. Applying again the MR = MC rule, we find the profit-maximising level of output Q_2. Comparing P_2 with ATC at output Q_2, we see they are equal to each other; therefore, profit per unit is P_2 – ATC = 0. Therefore, economic profit is zero and the firm is earning normal profit.

In a situation when firm's total revenue may not cover its economic cost (TR < TC), it is said to be making a loss. This is explained on the following graph.



If the market price falls below minimum ATC, such as P_3, corresponding to demand curve D_3, the firm does not earn enough revenue to cover all its costs. Using the MC = MR rule, we see that the profit-maximising or loss-minimising level of output is Q_3, at which P_3 < ATC, indicating the firm is making a negative profit, or loss. Therefore, Q_3 is the firm's loss-minimising output. ATC – P_3, or the difference between points c and d, represents the firm's loss per unit of output, or loss Q If we multiply this vertical distance by Q_3, we get the firm's total loss, given by the shaded area.

So the 'maximum' profit point is the best potential but does not always result in profits. It varies from one type of market to another and also varies according to the time period within a particular market structure.

(b) Economic theory of the firm assumes that in all different market structures a firm's behaviour is guided by the goal to maximise profit. However there is also room in the theory for different objectives in different market conditions and in different times.

Behavioural economists believe that modern corporations are complex organizations made up of various groups or stakeholders. Stakeholders are defined as any identifiable groups who have a vested interest in the activity of a business.
Examples of relevant stakeholders might include:

- Employees within a business
- Managers employed by the firm

- Shareholders - people who have an equity stake in a business
- Customers in the market
- The local community
- The government and its agencies including local government

Each of these groups is likely to have different objectives or goals at different points in time. The dominant group at any moment in time can give greater emphasis to their own objectives - for example price and output decisions may be taken at local level by managers - with shareholders taking only a distant and imperfectly informed view of the company's performance and strategy.

So if firms are likely to move away from pure profit maximising behaviour, then there are numerous different strategies that can be employed. Although a business might have profitability as an important medium-term aim, it might depart from this in the short term.

In one such theory, it is argued that profit maximisation may be the dominant motive of the traditional owner-managed firm. However, in large firms where managers are hired by the owners to perform management tasks may be more interested in increasing sales and maximising the revenues that arise from larger quantities sold. This goal of firms is referred to as revenue maximisation. This is particularly true for firms that have a separation of ownership and control and the rewards for managers and employees are linked to increased sales rather than increased profits.

In other approaches it is assumed that firms may be interested in maximising their growth rather than their profits. Growth is attractive for the following reasons. Firstly, a growing firm can achieve economies of scale and lower its average costs. Secondly, as a firm grows it can diversify into production of different products and markets and reduce its dependence on a single product or market. Lastly, a larger firm has greater market power and increased ability to influence prices.

Some economists argue that the large modern enterprise cannot be looked upon as a single entity with a single maximising objective; instead it is composed of many separate groups within the firm, each with its own objectives which may overlap or may conflict. This multiplicity of objectives does not allow the firm to pursue any kind of maximizing behaviour. Firms therefore try to establish processes through which they can make compromises and reconcile conflicts to arrive at agreements, the result of which is the pursuit of many objectives that are placed in a hierarchy. This behaviour was termed satisficing, referring to the idea that firms try to achieve satisfactory rather than optimal or 'best' results.

The self-interested behaviour of firms often leads to negative consequences for society. It is often the case that the well-being of firms is not consistent with the welfare of society. A prime example is the self-interested firm that pollutes the environment. In addition, firms can engage in actions that most consumers would consider to be ethically unacceptable, such as the practice in many developing countries of employing children who are extremely poorly paid and forced to work long hours, or employing labour that is forced to work under unhealthy or dangerous conditions. However, many firms are increasingly recognizing that the pursuit of self-interest need not necessarily conflict with ethical and environmentally responsible behaviour. A negative image of the firm held by workers and customers can cut deeply into the firm's revenues and profits by lowering worker productivity and the firm's sales. Further, socially irresponsible firm behaviour may lead to government regulation of the firm intended to minimise the negative consequences of the firm's actions for society, whereas socially responsible behaviour could instead result in avoidance of government regulation. Therefore, firms face strong incentives to display corporate social responsibility by engaging in socially beneficial activities rather than simply trying to maximize profit.

Aiming for profits, sales, salaries, power, etc. will be useless if the firm does not survive! Trying to maximise any of the various objectives may be risky. For example, if a firm tries to maximise its market share by aggressive advertising or price cutting, it might invoke a strong response from its rivals. The resulting war may drive it out of business. Concern with survival, therefore, may make firms cautious.

The firms facing oligopolistic or monopolistic market structure are more likely to deviate from profit maximization. This is because they usually earn supernormal profits and are less likely to face losses when they deviate. Also these firms have the incentive to deviate, say in favour of growth or increasing sales or market share. However, in a perfectly competitive market there is no scope of any other objective but maximizing profit. This is because there exists only normal profit in the long run and if a perfectly competitive firm departs from profit maximization it may not survive.

Question 16

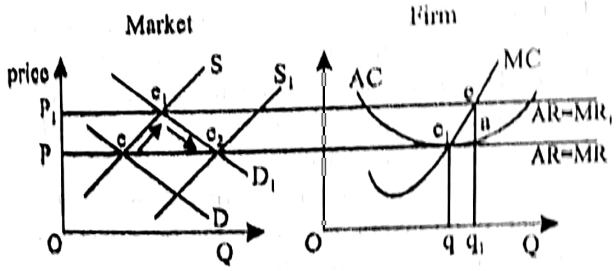
Explain what is meant by the 'equilibrium of a perfectly competitive firm' and consider the view that equilibrium is always achieved in perfect competition but never in a monopoly market. [25]

AQA Jan 04

Essay

Perfect competition describes the market structure where large number of relatively small firms produce homogeneous product that are perfect substitute. This leads to all firms being "price takers" with a perfectly elastic demand curve for their product. In addition to this there exists perfect freedom of entry and exit from the industry. This implies that firms face no sunk costs and entry and exit from the market is feasible in the long run. Moreover, consumers have all readily available information about prices and products from competing suppliers and can access this at zero cost. Likewise sellers have perfect knowledge about their competitors. Furthermore, the inputs — land, labour and capital can be switched in response to changing market conditions, prices and incentives.

Since the individual firm is powerless to change the price of its product, therefore, it is in equilibrium when it maximizes profit by adjusting output to the point where its marginal revenue equals marginal cost. In such conditions profit may range from abnormal, normal and subnormal in the short run. However, due to the absence of entry exit barriers, profit is maintained at the normal level in the long run. The graph below illustrates this;

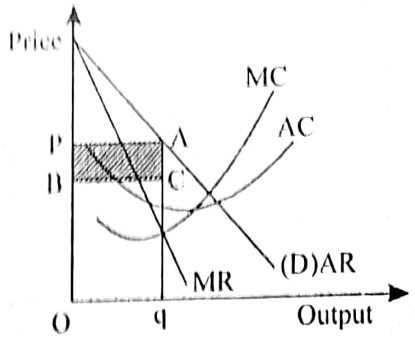


In the short run, the interaction between demand and supply determines the "market-clearing" price OP. This price is taken by each firm. The average revenue curve is their individual demand curve. Since the market price is constant for each unit sold, the AR curve also becomes the marginal revenue curve (MR) for a firm in perfect competition. For the firm, the equilibrium output is Oq where its MC = MR. This output generates a total revenue (OP x Oq) which is the same as total cost ($e_1q \times Oq$). In this situation the firm is said to earn normal profit because the AC incorporates the element of normal profit. It is the minimum level of profit required to keep factors of production in their current use.

Let's now assume that an increase in the market demand to D_1 raises the price to P_1. The firm adjusts its output to q1 because its MC= MR_1 at point e. In this case the firm is earning abnormal profit because its AR is greater than AC. If most firms are making abnormal profits in the short run, this encourages the entry of new firms into the industry. This will cause an outward shift in market supply forcing down the price. The increase in supply will eventually reduce the price until price = long run average cost. At this point, each firm in the industry is making normal profit. Other things remaining the same, there is no further incentive for movement of firms in and out of the industry and a long-run equilibrium has been established.

Similarly firms may earn sub normal profits in the short run. However, the loss will not persist in the long run because some firms will be forced to leave the industry. This will decrease the market supply and increase the price to the level where remaining firms earn normal profit.

Unlike perfect competition a pure monopoly exists when there is a single seller of a product for which there is no close substitute. The firm is the industry and is usually protected from actual competition by a number of entry barriers. This means that the monopolist faces a downward sloping demand curve as shown in the figure below;



Since the demand curve (AR) is downward sloping, MR must be less than AR. The monopolist finds its equilibrium where its MC = MR — the profit maximizing level of output. The price charged is OP and the output OQ. This results in supernormal profit highlighted by the area PBAC in the graph above. As with perfect competition monopolist may undergo a short period sub normal, normal or supernormal profit. However, in the long run the monopolist, unlike perfect competition, is expected

to continue to earn supernormal profit owing to the existence of entry barriers. Control over the supply of raw material, for instance, will create an effective barrier to entry. In certain markets legal protection such as patents or copy rights might prevent the emergence of competition. In certain other industries there may be a natural tendency towards monopoly. This is especially true of industries where economies of scale result in average cost to fall as output expands.

Thus it follows that firms in both market structures produce where their MC = MR and therefore both will be in equilibrium in the short run as well as in the long run. For both market structures there may be different levels of profit in the short run but a perfectly competitive firm earns only normal profit in the long run while a monopolist may continue to earn supernormal profit even in the long run mainly due to the existence of effective entry barriers.

Question 17

(a) Explain the difference between price leadership and price discrimination. [12]

(b) Discuss whether firms always want to maximise profits and are able to do so in the way suggested by economic theory. [13]

[J17/P4/Q3]

Essay

(a) Both price discrimination and price leadership are different pricing strategies that firms may adopt in differing market condition. Price discrimination is the practice of charging a different price for the same product to different consumers when the price difference is not justified by differences in costs of production. If price differences are due to differences in a firm's costs of production, then they do not qualify as 'price discrimination'. Price leadership, on the other hand, is where firms align their prices with the price set by the firm identified as a price leader in the market.

For a firm to be able to practise price discrimination, firstly, it must possess some degree of market power, or some ability to control price; in other words, it must face a downward-sloping demand curve. Price discrimination can therefore occur in all market structures except perfect competition. Natural monopolies, such as electricity companies, for instance, often charge lower prices at night than during the day for consumption of electricity.

Secondly, the firm must be able to separate groups on the basis of certain characteristics such as time, geography, age, gender, technology, income or other factors to ensure that no resale of the product occurs. The price-discriminating firm must ensure that it is not possible for any consumer to buy at the low price and resell at the higher price. If resale were possible or easy, consumers would avoid purchasing from the higher price firm, and would try to buy the product from other consumers who had bought at the lower price.

Thirdly, there must be groups of consumers with differing price elasticities of demand for the product. This is because consumers with a relatively low PED will be willing to pay a higher price for a good than consumers with a relatively higher PED. Airlines, for instance, charge higher prices for business travelers than for leisure travelers. Both a higher price for the consumer group with relatively inelastic demand and a lower price for the consumer group with relatively elastic demand add to the firm's total revenue. Price discrimination, therefore, results in higher revenues and profits for firms. If profits did not increase, firms would not practice price discrimination.

Price leadership, on the other hand, may occur in an oligopolistic market where firms do not want to engage in price competition and therefore they may turn towards informal types of collusion known as informal or tacit collusion. It refers to co-operation that is implicit or understood between the co-operating firms, without a formal agreement. The objectives of tacit collusion are to co-ordinate prices, avoid competitive price-cutting, limit competition, reduce uncertainties and increase profits.

Dominant firm price leadership is one such form where firms set the same price as an established leader. The price leader may be the largest firm; the firm that dominates the industry or the one with lowest costs sets a price and also initiates any price changes. The remaining firms in the industry become price-takers, accepting the price that has been established by the leader.

Alternative to this, the price leader may simply be the one that has emerged as the most reliable one to follow. This is known as barometric price leadership. Although the firm is not dominating the industry and only tries to produce where its MC=MR and sets the price accordingly yet its price will be followed by others.

A characteristic of price leadership arrangements is that price changes tend to be infrequent, and are undertaken by the leader only when major demand or cost changes occur.

It therefore follows that price discrimination and price leadership are two different pricing strategies that firms adopt under different market conditions in pursuit of their goals.

(b) Traditional theory of the firm tends to make a standard assumption that businesses possess the information, market power and motivation to set a price and output that maximises profits in the short or long run. This assumption is now criticized by economists who believe that modern corporations are complex organizations made up of various groups or stakeholders such as, employees, managers, shareholders and authorities. Each of these groups is likely to have different goals at different points in time. The dominant group at any moment in time can give greater emphasis to their own objectives – for example price and output decisions may be taken at local level by managers – with shareholders taking only a distant and imperfectly informed view of the company's performance and strategy.

These economists argue that a business might have profitability as an important long-term aim; it might depart from this in the short term in order to achieve a variety of different objectives. A firm, for instance, choosing to maximize sales revenue would raise output beyond MC = MR until MR had fallen to zero. In this case the firm may be willing to accept lower short term profit for a higher market share. This is also possible when businesses correlate annual raise in salaries and other perks with total sales revenue and rapid growth rather than profits. Hence managers may be assumed to want to maximize their own utility by perusing sales revenue maximization and growth.

Alternatively, the firm might opt to maximize the volume of sales rather than sales revenue. In this option the firm would increase output up to the break-even level where the total revenue just covered the total cost. A higher output implies loss-making behaviour. The only situation where this would be possible is where the firm could use the profit from some other activities to cover these losses, using the principle of cross subsidisation. The most likely motive for loss-making behaviour is to gain a toehold in a new market or to deter new entrants into an existing one.

Satisficing behaviour would occur when a firm is determined to make a reasonable level of profits to satisfy the shareholders but also to keep the other stakeholders happy. It may choose to sacrifice profit in order to improve the workforce's pay and conditions or to keep prices down for the benefit of consumers. Satisficing can also be a feature of firms that have enjoyed a high market share over a long period of time. Complacency can lead to firms losing their focus on the cost structure or failing to devote resources to either product or process innovation. Either situation can lead to a loss of profits. Also some firms may have charitable or environmental objectives, which must be financed at the cost of profit. Some public sector firms bear losses even in the long run, so as to maximize welfare of the people. The losses are paid for by the tax revenue.

In conclusion, practically the objectives and targets of a corporation or small enterprise will evolve to meet changing economic conditions. But as a working assumption, it is still valid to see profit maximization as the major long term objective influencing firm's competitive behaviour.

Another criticism of traditional theory sometimes put forward is that firms do not use MR and MC concepts. It is argued that, in practice, it may be difficult to apply mainly because of inability of firms to calculate MC and MR with precision. Instead, firms prefer to simply work out the cost per unit and add on a profit margin in order to determine the selling price. The cost plus pricing is unlikely to result in maximum profit, although it could produce a high level of profit. The main difficulty in trying to maximise profits using MC and MR approach is a lack of information. Firms may well use accountants' cost concepts not based on opportunity cost. In such a case it is impossible to measure true profit.

More importantly, firms are unlikely to know precisely or even approximately their demand curves and hence their MR curves. Even though they will know how much they are selling at the moment, this only gives them one point on their demand curve and no point at all on their *MR* curve. In order to make even an informed guess of marginal revenue they must have some idea of how responsive demand will be to a change in price.

Market research may help. But even this is frequently very unreliable. Such information takes time to acquire and action, by which time market conditions may have changed, thus making the information out of date.

The biggest problem in estimating the firm's demand curve is in estimating the actions and reactions of other firms and their effects. Collusion between oligopolists or price leadership would help, but there will still be a considerable area of uncertainty, especially if the firm faces competition

from abroad. Even other industries' product may be substitutes or complements to some degree, thus will affect the price elasticity of demand for firm's product.

Finally there is the problem of deciding the time period over which the firm should be seeking to maximise profits. Firms operate in a changing environment. Demand curves shift; supply curves shift. Some of these shifts occur as a result of factors outside the firm's control, such as changes in competitors' prices and products, or changes in technology. Some, however, change as a direct result of a firm's policies, such as an advertising campaign, the development of a new improved product, or the installation of new equipment. The firm is not, therefore, faced with static cost and revenue curves from which it can read off its profit-maximising price and output. Instead it is faced with a changing and often highly unpredictable set of curves.

Thus it follows that firms, even if they do not know it, will be equating MC and MR, provided they end up maximising profits. In this case, traditional models will still be useful in predicting price and output.

Question 18

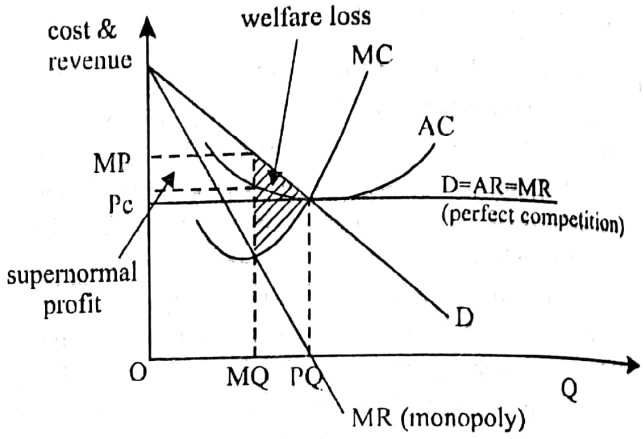
The driving force of some governments is to bring the benefits of competition to formerly monopolised markets.

Explain the benefits that might occur in a more competitive market compared with a monopolised market. [12]

[J17/P4/Q7(a)]

Essay

A pure monopoly exists when there is a single seller of a product for which there is no close substitute. The firm is the industry and is usually protected from actual competition by a number of entry barriers. This means that the monopolist faces a downward sloping demand curve that is relatively inelastic at each price. This gives the monopolist firm substantial powers to charge a higher price. Nevertheless, it is still constrained by its demand curve. In order for monopolist to continue to charge a higher price and restrict other firms from entering the market there must be barriers to entry. As with firms in any other market type monopolist also maximizes profit by producing output where its MC=MR. In the figure below profit is maximized at Q_m output and P_m price.



The monopolist will produce MQ at a price of MP. This is where MC = MR. However, as number of firms increases in the market it becomes more competitive say monopoly to oligopoly and then to monopolistic competition and finally to perfect competition the demand curve that the individual firm faces becomes relatively elastic in monopolistic competition and becomes perfectly elastic in perfect market conditions. Firm's power to set the price is thus weakened and eventually they become price takers in a perfectly competitive price. For instance, if the same industry were under perfect competition, it would produce at PQ and charge PC. This is where industry's supply in the market equals industry's demand. Monopolist, on the other hand, produces a lower output and charges a higher price. In doing so the monopolist captures consumer surplus and turns it into supernormal profit. Thus when market becomes more competitive consumers benefit in terms of lower price and higher quantity along with increase in their surplus. In addition consumers benefit from improvement in quality and a wider choice of products.

This analysis is based on the assumption that the industry has the same AC and MC curves whether under perfect competition or run as a monopoly. A more detailed analysis of the graph shows that in perfect competition, output is where P = MC that could be argued to be allocatively efficient. Clearly, the monopolist is producing below this level at MQ where P > MC, the monopolist can be argued to be producing at less than optimal output and resulting in a welfare loss shown by the shaded triangle. So increase in competition not only improves allocative efficiency but also results in welfare gain for the whole society.

Moreover under monopoly barriers to entry allow profits to remain supernormal even in the long run, monopolist, therefore, is not forced to operate at the lowest possible per unit cost because it can still make large profits even if it is not using the most efficient technique.

However as markets become monopolistically or perfectly competitive these entry barriers erode and firms are forced to adopt more efficient methods of production and earn only normal profit.

As an added advantage society benefits from more competitive markets as cannot adopt price discrimination and predatory pricing.

With increase in the degree of competition there are at least two additional costs saved. Firstly, the costs of resources that monopolist uses in order to maintain its monopoly powers. Society also ends up expanding resources in controlling or preventing monopolies. Secondly, additional costs resulting from x-inefficient behavior of monopolist.

It therefore follows that competitive markets bring advantages all across the society.

Question 19

For some products there has been an increasing dominance of large firms in the last five years. For example, in the telecommunications industry most countries now have four or five operators, some have only two. In other markets many small firms exist.

(a) Explain possible reasons why in some markets there are many small firms while in others the market is dominated by a few large firms. [12]

(b) Discuss who might benefit and who might lose when a market becomes dominated by a few large firms. [13]

[N17/P4/Q4]

Essay

(a) Some markets are dominated by large firms because potential existence of economies of scale steer them to target growth as their main objective. Firms can grow in size either by investment in new plants and machines that is known as internal growth or else they can opt for some form of integration that is called external growth. In many cases firms target growth through integration in order to reduce their average costs and hence take advantage of economies of scale. These advantages come in a variety of ways known as technical, marketing, financial, managerial and risk bearing economies.

As a firm grows in size it may, for instance, benefit from increased specialization. The firm may also gain on marketing its products. When, for instance, a firm buys its raw materials in bulk it may obtain preferential terms in the form of a discount, thus reducing the cost of each unit. On the financial front a larger firm may be able to obtain finance on favourable terms, obtaining loans from financial institutions at lower rates of interest. In addition to this a large firm normally produces more than one product and therefore takes advantage of economies of scope. Economies of scope refer to the reduction in average total cost (ATC) made possible by a firm increasing the number of different goods it produces. The reason is that the firm is able to take advantage of skilled staff and technology which can be shared by the different goods produced.

Economies of scale have the effect of increasing the productive capacity of the business and they help to raise profit margins. They also give a business a competitive edge in domestic and international markets. However there are a number of other reasons for firms to wish to become large and taking advantage of economies of scale is only one of them and it is not necessarily achieved only through integration. In other cases firms may wish to become large to increase their market dominance thereby giving them increased pricing power in specific markets. Monopolies for example can engage in price discrimination. Also the expansion of a business might be motivated by a desire to diversify production and sales so that falling sales in one market might be compensated by healthier demand and output in another market. Usually the underlying objective of integration is to achieve a rapid growth of market. This usually is typical with manager-controlled businesses where the annual salaries and other perks might be more closely correlated with total sales revenue rather than profits. So firms grow large for a variety of different purposes and achieving economies of scale is just one of them.

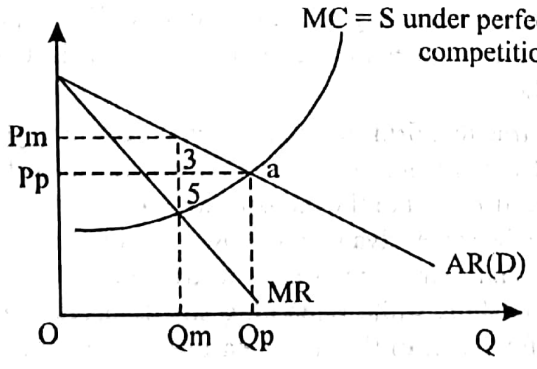
It is true that firms through growth manage to gain cost advantages that they can use to drive the small firms out of the industry who normally don't have the same advantages. However, it is also true that small firms such as sole traders and many partnerships while remaining small survive successfully. One of the prime reasons for this continued existence of small concerns is the desire to be

one's own boss; once this desire is met entrepreneurs may be well contented with a relatively quiet life by achieving a satisfactory level of profit. In some cases firms may remain small in order to take advantage of a low price elasticity of demand and high income elasticity of demand for specialist "niche' goods and services-these products can be sold at a higher price and with a bigger profit margin. Also some firms remain small because they can avoid diseconomies of scale associated with larger firms. Other small firms survive because they assist the larger firms by producing some components of their products at relatively lower cost. In certain cases the market size may be relatively small that limits the size of firms in that industry. In other cases where personal services are required it is simply not possible for a firm to grow large, hair dressers, for example.

So we conclude that in some markets where firms aim at achieving growth and the market conditions are also conducive, few large firms dominate the markets. In others conditions may not be all that favourable for growth there is therefore room for small firms to survive successfully.

(b) Theory of firm identifies a market as oligopoly where few relatively large firms operate. It is where there are just a few firms in the industry with barriers to the entry of new firms. In such a market firms recognise their mutual dependence and in order to maximize joint profit they tend to collude to keep prices high. They are more likely to do that if there are few of them; if they are open with each other; if they have similar products and cost structures; if there is a dominant firm; if there are significant entry barriers; if the market is stable; and if there is no government legislation to prevent collusion.

If oligopolists act collusively and jointly maximise industry profits, they will in effect be acting together as a monopoly. In such cases, the disadvantages to society experienced under monopoly will also be experienced under oligopoly. In order to explain this let's consider the following graph.



Under perfect competition the price is determined by market demand and supply forces, hence Pp is the market price and the industry will sell Qp output. The industry is said to achieve allocative efficiency because P = MC. On the other hand a collusion, acting as a monopolist, will produce where MC=MR. Thus it produces QM output and will sell this at Pm price. Clearly the collusion decides to produce where MC< P, hence results in an inefficient allocation of resources. Also this lack of competition reduces welfare of consumers because they have a little choice available. More importantly it has resulted in a loss of total consumer and producer surplus indicated by the area 3+5. This is known as deadweight loss and reduces the welfare of the whole society. It therefore follows that consumers lose because they have to pay a relatively higher price and are forced to consume a lower quantity of the good. The firms are the winners because they manage to jointly maximize their profits.

These problems will be less, however, if oligopolists do not collude, if there is some degree of price competition and if barriers to entry are weak. Also, the power of oligopolists in certain markets may, to some extent, be offset if they sell their product to other powerful firms. Oligopolistic producers of baked beans, for instance, sell a large proportion of their output to giant supermarket chains, which can use their market power to keep down the price at which they purchase the beans. This phenomenon is known as countervailing power.

However, In some respects, oligopoly may have advantages to society. For example, economies of scale can be achieved due to the large size of oligopolistic firms, leading to lower production costs to the benefit of society and the consumer through lower prices. Moreover, large firms can use part of their supernormal profit for research and development. Oligopolists have a considerable incentive to do so. If the product design is improved, this may allow the firm to capture a larger share of the market, and it may be some time before rivals can respond with a similarly improved product. If, in addition, costs are lowered by technological improvement, this could be passed on to the consumers.

Furthermore, non-price competition through product differentiation may result in greater choice for the consumer. Take the case of stereo equipment. Non-price competition has led to a huge range of different products of many different specifications, each meeting the specific requirements of different consumers.

So we conclude that there are benefits and losses for both consumers and firms when few large firms operate in a market. However it all depends on the degree of competition in the market. A more competitive behavior of firms renders higher advantages to consumer. A collusive behaviour of firms, however, is more beneficial for firms.

Question 20

A businessman claimed it was difficult to make decisions as his business was subject to uncertainty and interdependence.

Discuss the methods used by oligopoly firms to reduce uncertainty and interdependence and the extent to which these methods exploit the consumer. [25]

[J18/P4/Q3]

Essay

Oligopoly refers to a market where there are a few relatively large firms producing either differentiated or homogeneous product. In addition, it is assumed that barriers to entry are fairly substantial and knowledge is by no means perfect.

Thus oligopoly is an industry where there is a high level of market concentration. This implies that the number of firms is small enough for each firm to realize that its competitors may respond to anything that it does and that it should take such possible responses into account. Firms therefore are mutually interdependent for if any one firm changes its behaviour, this can have a major impact on the demand curve facing the other firms. Oligopolistic firms therefore adopt a strategic behavior anticipating all possible actions and reactions of rival firms for they operate under uncertain market conditions.

Being interdependent firms in an oligopolistic market face a dilemma between competition and cooperation. Hence there is a possibility of price competition. Consumers benefit from a price cutting by firms but price wars prove to be costly for firms therefore they are short lived. As an alternative strategy oligopolistic firms may engage in non-price competition such as product differentiation through advertising or creating a brand image for their product. They may also offer a particular after-sales service or package the product in a particular way.

However, for oligopolistic firms there is much to be gained from cooperation amid uncertain market conditions. This cooperation may take the form of collusion. It is an agreement on price charged and level of output produced. It therefore makes it possible for firms to act as a monopoly and collectively maximize profits for the industry by eliminating competition.

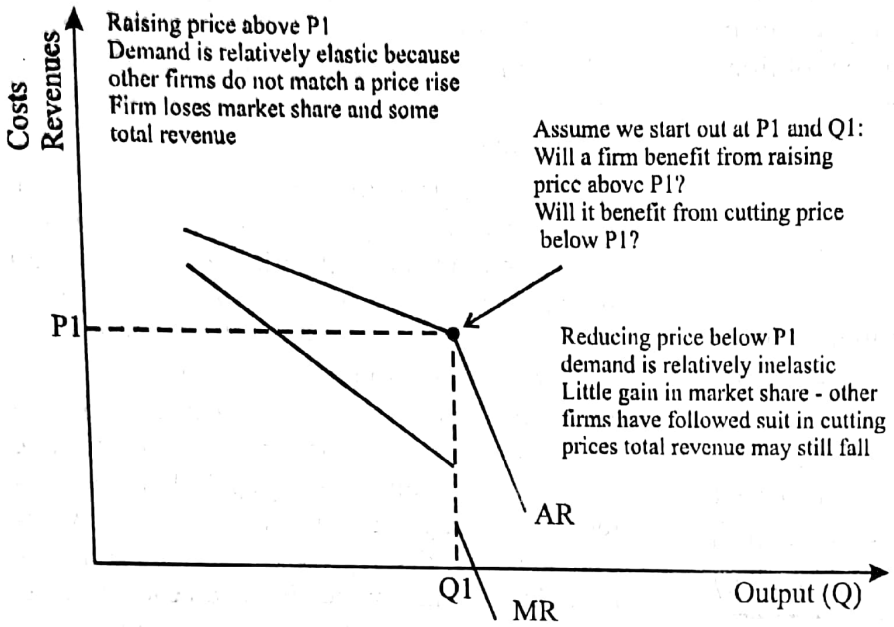
Collusion can take different forms. A cartel, for instance, is a formal agreement between firms to take actions to limit competition in order to increase profits. The agreement may involve limiting and fixing the quantity to be produced by each member firm, which results in an increase in price or else fixing the price at which output can be sold; setting restrictions on non-price competition; dividing the market according to geographical or other factors; or agreeing to set up barriers to entry. Whatever the case, the objective is to reduce uncertainty by limiting competition and hence increase the monopoly power of the firms in order to jointly maximize profits.

In many countries, cartels are illegal — as seen by the government a means of driving up prices and profits, and thereby acting against the public interest. However, firms may simply get round and tacitly 'agree' to avoid price wars or aggressive advertising campaigns. This is where firms behave in a cooperative way but do not have a formal agreement. The most common form of tacit collusion is price leadership where price set by one firm becomes the benchmark for other firms.

Often the price leader in an oligopolistic market is the dominant firm. In this situation the largest or the most efficient firm takes the lead in setting the price which the other firms follow, possibly because they fear that not doing so would lead to a price war. The other form of price leadership is called barometric price leadership. The price leader may be a small firm but one which has a close knowledge of the market and the prevailing economic conditions. In this situation the barometric firm may institute a price change which the other firms in the oligopolistic market follow.

However in some cases when market conditions rule out any possibility of collusion market stability can still be achieved. A kinked demand curve explains this stability in a non-collusive oligopoly. It assumes that a business might face a dual demand curve for its product based on the likely reactions of other firms in the market to a change in its price. The common assumption of the theory is that firms in an oligopoly are looking to protect and maintain their market share and that rival firms

are unlikely to match another's price increase but may match a price fall. The graph below illustrates this situation.

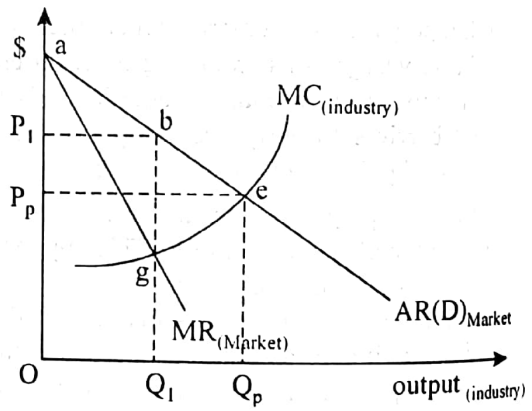


If a business raises price and others leave their prices constant, then we can expect quite a large substitution effect away from this firm making demand relatively price elastic. The business would then lose market share and expect to see a fall in its total revenue.

If a business reduces price but other firms follow suit, the relative price change is much smaller and demand would be inelastic in respect of the price change. Cutting prices when demand is inelastic also leads to a fall in total revenue with little or no effect on market share. The kinked demand curve model therefore makes a prediction that a business might reach a stable profit-maximising equilibrium at price P1 and output Q1 and have little incentive to alter prices.

Thus the oligopolistic firms have to decide about particular pricing and output decision after taking account of possible reactions of rival firms. There is, therefore limited scope of price fluctuations rather in most situations firms maintain their prices and compete more on factors such as branding, quality variation, after sale services and advertisement.

If firms in an oligopolistic market act collusively they will in effect be acting together as a monopoly. In such cases, oligopoly is likely to exploit consumers the same way as does a monopoly. consider the graph below.



The total market demand curve is shown with its corresponding MR curve. The MC curve is the horizontal sum of the MC curves of members. Profits are maximised at Q_1 where MC = MR and P_1 is the market price set by the firms acting as a collusive oligopoly.

For instance Q_p output where P = MC could be argued to be the optimum level of production. Clearly, a collusive oligopoly will produce below this level where (P > MC). Consumers would be prepared to pay more for additional units than they cost to produce. It therefore suggests that consumers are worse off because they consume a lower quantity of the good and pay a higher price that reduces consumer surplus to the area P_1ab than the area P_pae that they would have enjoyed if the market was competitive. Also barriers to entry allow profits to remain supernormal in the long run for firms are not forced to operate at the bottom of their AC curve. Thus, other things being equal,

long-run prices will tend to be higher, and hence output lower.

Moreover the firms, sheltered by barriers to entry, can still make large profits even if they do not use the most efficient technique. Consumers therefore have to pay a higher price for their inefficiencies.

With or without collusion the firms in oligopoly are also said to be involved in wasteful competition that uses scarce resources which could be put to alternative uses in producing more goods. Expenditure on practices such as promotion and advertisement tend to raise the price paid by the consumers.

On the other hand it is often argued that firm will not be operating at the bottom of its LRAC curve, but the nature of the industry may allow some economies of scale to be gained. The LRAC curve would thus be lower than in the case of the larger number of smaller firms that would be necessary if the industry were to be perfectly competitive. The size of the economies of scale, if any, will obviously vary from industry to industry. Furthermore, the consumer may benefit from a differentiated oligopoly by having a greater variety of products to choose from. Each firm may satisfy some particular requirement of particular consumers.

However the question is if oligopoly brings the disadvantage of excess capacity but the advantage of diversity, is the consumer necessarily worse off? The answer depends on the will and choice of the society at large.

In addition oligopolistic firms are more likely to innovate. Being aware that new products and processes by rival firms can threaten their survival, existing firms must have a powerful incentive to engage continuously in R&D. Innovative new products often enable these firms to maintain or increase their profit. Thus innovation can strengthen their existing market power and at the same time it could benefit the consumer by offering products of higher quality with improved features.

So firms in oligopolistic markets inevitably face interdependence and uncertainty that they try and overcome by using a variety of different ways. The consumers however are more likely to face exploitation when firms collude. In a non-collusive competitive oligopoly the element of exploitation is largely offset by the benefits that consumers gain from intense rivalry among the firms.

Question 21

(a) Analyse the factors which determine the price of a firm's product and its output in monopolistic competition. [12]

(b) Assess the effect on output and price if a monopoly firm maximises its sales revenue rather than its profit. Consider who will benefit the most from this change. [13]

[N18/P4/Q3]

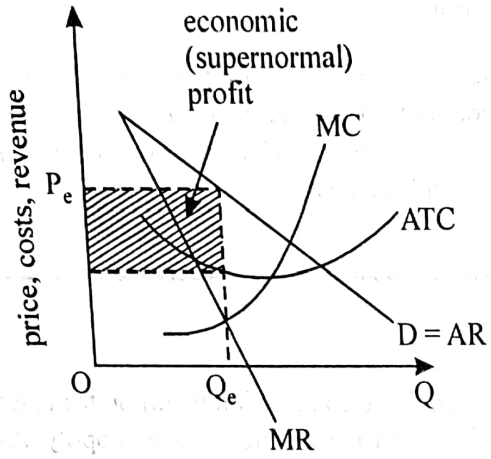
Essay

(a) Monopolistic competition incorporates features of both perfect competition and monopoly. As with perfect competition there are many relatively small firms and each of those firms has a small share of the market, therefore each firm acts independently of the others. Moreover, freedom of entry into the industry allows the new firms to enter freely. However firms in monopolistic competition produce differentiated products that can be reinforced through advertising that produces an element of brand loyalty. It therefore implies that each firm in such an industry is a 'minimonopoly' in the specific version of the good that it produces and hence faces a downward-sloping relatively elastic demand curve for its product. So, if a firm decides to raise its price by a fraction it does not lose all its buyers even though all other firms are producing close substitutes. Examples of monopolistically competitive industries include clothing, restaurants, processed foods, jewellery, furniture, drycleaners, etc.

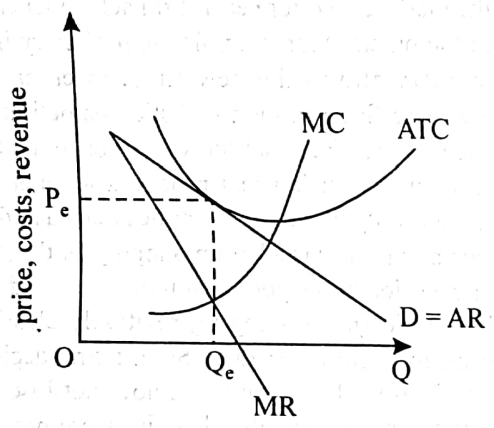
Similar to firms operating in other market conditions a firm in monopolistically competitive industry applies the MR = MC rule in order to determine its profit maximizing output. The firm then locates the price at which it can sell that output on the demand curve it faces. Marginal cost (MC) refers to the additional cost the firm has to incur in order to produce one more unit while marginal revenue (MR) represents what the firm earns from selling an additional unit of output. According to the rule a firm maximizes profit or minimizes loss by selling an output where the last unit sold adds as much to its revenue as it does to its cost. It therefore suggests that the firm can increase its total profit by increasing output when its MR > MC i.e. each additional unit sold adds positively to its total profit until the two are equal. Conversely, the firm increases total profit by reducing output when its MR < MC because it will avoid loss making units and hence would increase total profit. Following graphs

illustrate profit maximizing price and output of a firm in the short run.

(a) Economic Profit

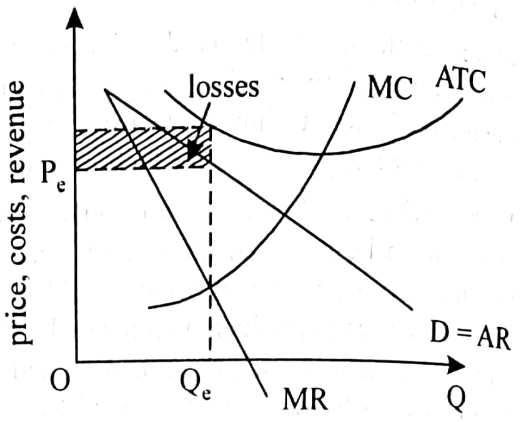


(b) Normal Profit



In the short run, the firm can make either supernormal profit as shown in graph on the left or normal profit given in the graph on the right. The firm applies MR = MC rule in order to locate the profit maximizing or loss-minimising output (Q_e), and price (P_e). For that level of output it compares price with ATC to determine profit per unit or loss per unit. So part (a) of the Figure shows that the firm earns supernormal profits, since P > ATC at Q_e. Total profit is found by multiplying profit per unit and Q_e output as shown by the shaded area. in part (b) the firm's economic profit is exactly zero since P > ATC at Q_e and therefore the firm is earning normal profit. However the firm may also incur loss in the short run as shown in the graph below;

(c) Losses



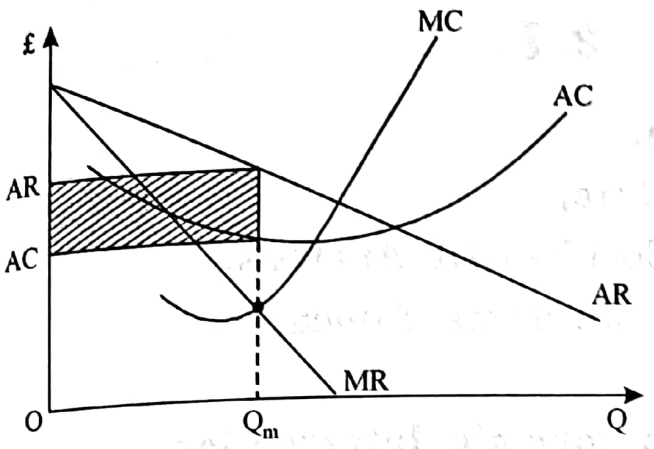
In the figure above the firm is making losses because P < ATC at Q_e. Total loss is found by multiplying loss per unit with Qe as indicated by the shaded area.

However under monopolisitic competition, freedom of entry eliminates supernormal profit and forces the firm to produce where its AR = AC. If, for instance, firms are earning supernormal profit, new firms will enter the industry in the long run. As they do, they will take some of the customers away from established firms demand for the established firms will therefore fall. Their demand (AR) curve will shift to the left, and will continue to do so as long as supernormal profits remain and thus new firms continue entering. Long-run equilibrium is reached when only normal profits remain: when there is no further incentive for new firms to enter.

So, we conclude that firms operating under monopolistic competition determines its price and output by applying the profit maximizing rule of MC = MR.

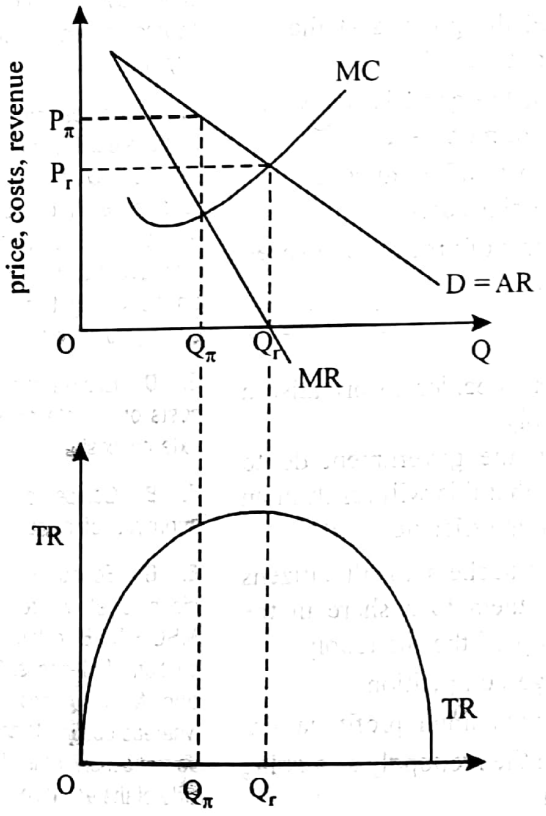
(b) According to the theory of firm a monopoly exists when there is one firm in the industry selling a unique product. Since there is, by definition, only one firm in the industry, the firm's demand curve is also the industry demand curve and compared with other market structures, demand under monopoly is relatively inelastic at each price. This gives monopolist substantial powers to charge a high price. Nevertheless, it is still constrained by its demand curve i.e. a rise in price will lower the quantity demanded. In order for a firm to maintain its monopoly position there must be barriers to the entry of new firms. Barriers can be of various forms. Such as economies of scale, high capital cost, legal barriers and various marketing barriers.

As with firms in other market structures, a monopolist also maximises profit where its MR = MC. Consider the graph below;



In the figure above, profit is maximised at Qm. The supernormal profit obtained is shown by the shaded area.

While profit maximization is the dominant objective in most cases however according to an alternative theory, monopolist may try to maximise revenue rather than profit. The figures below illustrate how price and output changes if a monopolist switches from profit maximization to revenue maximization.



The profit maximiser monopolist equates MC with MR, and produces quantity Q_π which it sells at price P_π. However the revenue maximizing monopolist produces Q_r quantity which it sells at price Pr because revenue maximisation involves choosing the level of output where MR = 0. This is because the monopolist faces a downward sloping demand curve with varying price elasticity of demand that makes its MR curve to fall continuously. So now on the upper half of demand curve where PED > 1 as price falls, output increases monopolist total revenue (TR), obtained by Q × P, also increases because proportionate increase in quantity has a bigger effect on firm's TR. However TR continues to increase and reaches a maximum where firm's MR = 0 and PED = 1. Beyond this point a further decrease in price starts lowering the firm's TR for now it is operating on the inelastic part of demand curve.

It therefore follows that a revenue maximizing monopolist sells a larger output at a lower price than a profit maximizing monopolist. Consumer certainly benefit from revenue maximizing behavior of monopolist because they consume a larger quantity of a good at a relatively lower price. As a result consumer surplus increases as measured by the area above the price and below the demand curve.

In one theory of firm's behaviour, it is argued that in large companies, there is likely to be a divorce between ownership and control. The shareholders (the owners) may want maximum profits, but it is the managers who make the decisions and managers are likely to aim to maximise their own utility that is usually linked with revenues. This problem of managers not pursuing the same goals as the owners is an example of the principal — agent problem. Agents, in this case, the managers, may not always carry out the wishes of their principals (the owners). Owners certainly not benefit for their profit will be lower compared to what the management could have earned for them by perusing the goal of profit maximization. Managers, however, could gain if their rewards are linked to increased sales rather than increased profits.

So, when a profit maximizing monopoly changes its objective to revenue maximization the owners lose because their profits decline, consumers and managers, however, are likely to benefit.