Profit Maximisation

Multiple-Choice Questions

GCE A-LEVEL ECONOMICS

A reduction in the market price of a firm's product will always result in an increase in its profits or a reduction in its losses if it

A increases its share of the market. ⬭

B increases its total revenue by more than its total costs. ⬭

C enables it to reduce its average costs. ⬭

D leads to a reduction in the price of its inputs. ⬭

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B   increases its total revenue by more than its total costs.

C   enables it to reduce its average costs.

D   leads to a reduction in the price of its inputs.

Ben owns a small business that makes hand-made guitars.

One year he sells 160 guitars, his total revenue is £78 400, and his total costs are £59 200.

The average profit that Ben earns on each guitar is

A £120

B £370

C £490

D £860

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A2 Questions

The table below shows the output, average total cost and average revenue for a firm.

Units of output	Average total cost (£)	Average revenue (£)
10	15	26
11	14	24
12	13	23
13	12	21

At which one of the following levels of output will the firm maximise its profits?

A   10 units

B   11 units

C   12 units

D   13 units

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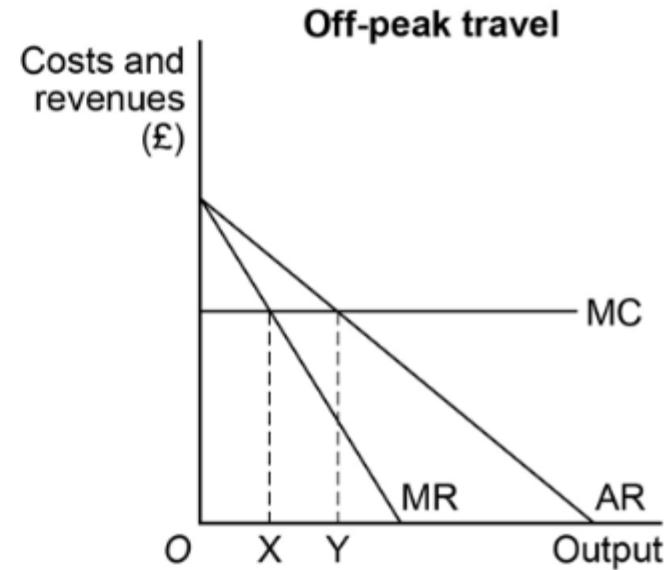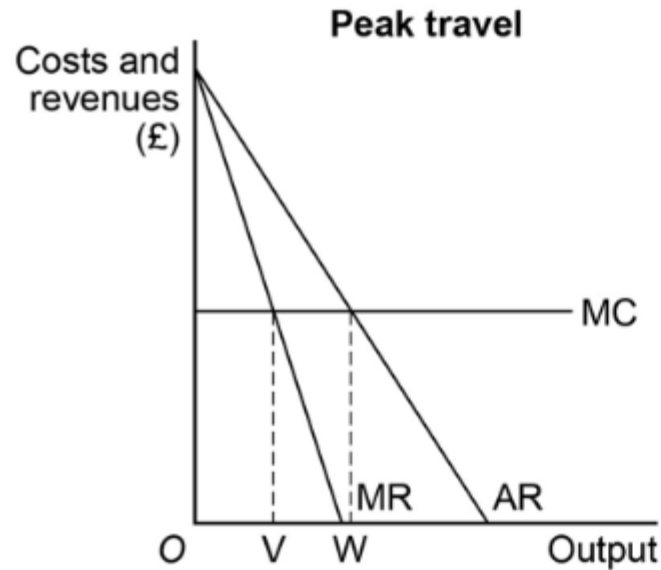
A   10 units

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The diagrams below show the peak and off-peak travel markets for a price-discriminating train operating company. The firm is a monopolist and the costs in both markets are the same.

Peak travel

Costs and revenues (£)

MC

MR   AR

O   V   W   Output

Off-peak travel

Costs and revenues (£)

MC

MR   AR

O   X   Y   Output

To maximise profits, how much should be supplied in each market?

	Peak travel	Off-peak travel	
A	OV	OX	○
B	OV	OY	○
C	OW	OX	○
D	OW	OY	○

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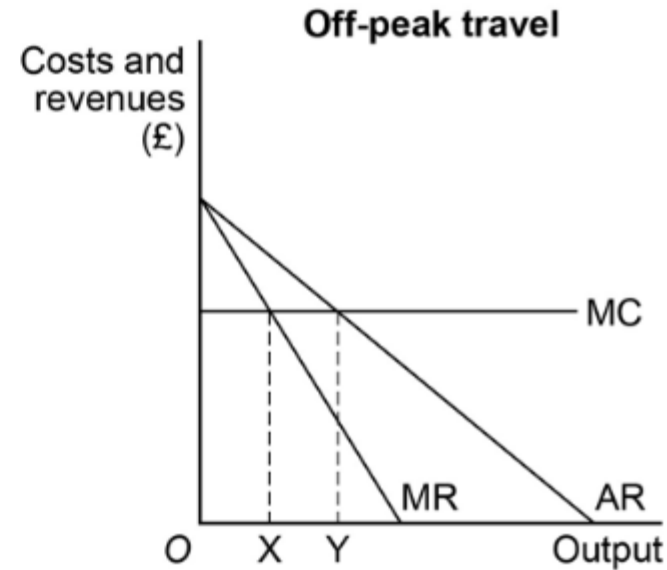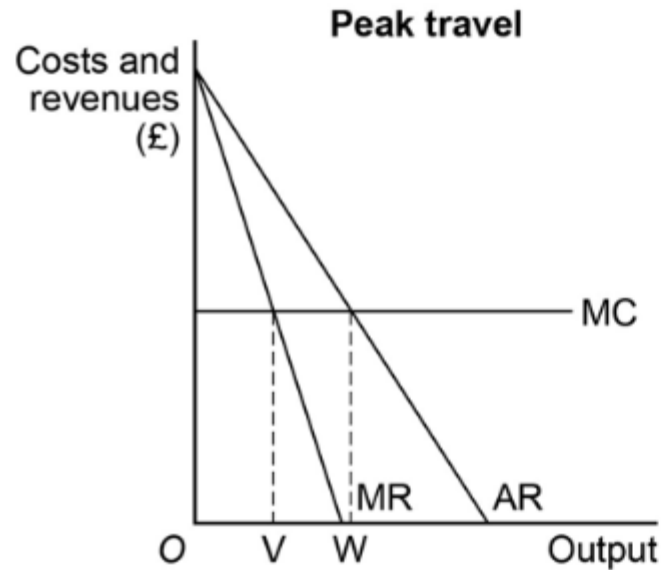
Peak travel

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Off-peak travel

Costs and revenues (£)

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To maximise profits, how much should be supplied in each market?

	Peak travel	Off-peak travel	
A	OV	OX	●
B	OV	OY	○
C	OW	OX	○
D	OW	OY	○

7 A firm cuts the price of its product. As a result, total revenue falls and marginal cost rises. Over this range of output, it can be inferred that
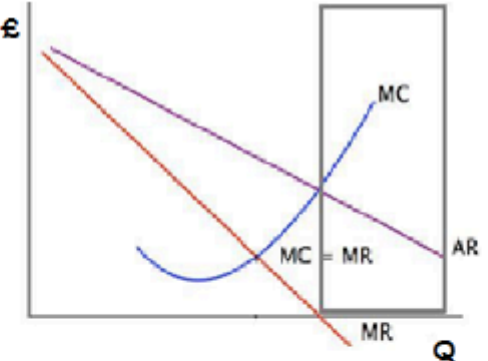
(1)

A the price elasticity of demand is relatively elastic and there are diseconomies of scale

B the price elasticity of demand is relatively inelastic and there are diminishing returns to a variable factor of production

C the price elasticity of demand is unitary and there are diseconomies of scale

D the firm's marginal profit would increase

E the firm is making a loss

Answer

Explanation

(3)

....

....

....

Question Number	Answer	Mark
7	**B**	
	Definition/identification mark: total revenue, marginal cost, e.g. ΔTC/ΔQ, or formula or definition of price elasticity of demand PED (1)	
	Explanation of price **inelastic** demand (in context of the question), e.g. if prices are cut then demand rises by a smaller proportion. Cutting price when demand is relatively inelastic means total revenue falls, or MR<0 (1)	(4)
	Explanation of the Law of Diminishing Returns e.g. output cannot rise without rising marginal cost, or, as variable factors are applied to a **fixed** factor (1) the increase in costs eventually rises (1)	
	Diagram (up to 2 marks) showing MR < 0 (1) and MC rising (1)	
	(The grey rectangle on diagram is range of operation)	
	Further analysis mark (1) e.g. marginal profit increases if output is reduced, or firm is not rational if it operates where MR<0	
	Example of elimination mark: Knock out of A or C because economies of scale are long run concepts	
	Knock out of D: if costs rose and revenue fell, profits would fall	

3 A firm faces the following cost and revenue schedule. (Spaces have been left for your working.)

Output per day	Total revenue (£)	Average revenue/ Marginal revenue (£)	Total cost (£)	Average cost (£)	Marginal cost (£)
0	0		12	–	–
1	10		22	22	10
2	20			14	
3	30			11	
4	40			10	
5	50			10	
6	60			13.5	

The firm is attempting to maximise profit. From this information it can be concluded that the firm is operating under conditions of

(1)

A monopolistic competition in the short run and will operate at 4 units

B monopolistic competition in the long run and will operate at 5 units

C perfect competition making a supernormal profit at an output of 1 unit

D perfect competition making a supernormal profit at an output of 3 units

E perfect competition making normal profit at an output of 5 units

Answer ☐

Question Number	Answer	Mark
3	Key: E	(1)
	Definition of normal profit (1) e.g. AR=AC or TR=TC or making just enough profit to keep factors in their current use. Award 1 mark for correct calculation of the columns and filled in up to at least 5 units, for TC (1) AR or MR (1) MC (1) or total profit if added (1). Observation that MC=MR is profit maximisation (1) The firm is a price taker, or faces perfectly elastic/horizontal demand (1) The firm makes normal profits where AR=AC in the long run (1) Defining characteristic of perfect competition, if not included above, e.g. very many firms in the industry, perfect knowledge, no barrier to entry or exit, homogeneous product (1) Diagram showing price taking firm, or perfect competition firm with industry diagram determining the price (1) Total revenue is increasing at a constant gradient indicating firm is a price taker (1) Knock out marks: e.g. it is not A because this is a price taker with horizontal demand curve whereas monopolistic competitor would have downward sloping demand curve due to differentiation (1) D is wrong because £3 loss is made at 3 units	
		(3)

Output per day	Total revenue (£)	Average revenue/Marginal revenue (£)	Total cost (£)	Average cost (£)	Marginal cost (£)
0	0	-	12	-	-
1	10	10	22	22	10
2	20	10	28	14	6
3	30	10	33	11	5
4	40	10	40	10	7
5	50	10	50	10	10
6	60	10	81	13.5	31