Please check the examination details below before entering your candidate information

Candidate surname	Other names
StemUp Model Solution	

Centre Number | Candidate Number

Pearson Edexcel Level 3 GCE

Time 2 hours

Paper reference **9EC0/01**

Economics A

Advanced

PAPER 1: Markets and Business Behaviour

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- There are three sections in this question paper. Answer **all** questions from Section A and Section B. Answer **one** question from Section C.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

P66202A

©2022 Pearson Education Ltd.

1/1/1/1/

P 6 6 2 0 2 A 0 1 3 6

Pearson

SECTION A

Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

You are advised to spend 30 minutes on this section.

Use the data to support your answers where relevant. You may annotate and include diagrams in your answers.

1 Disney+ is a streaming service that distributes films and television series produced by the Walt Disney Studios.

	Disney+ subscribers (million)
November 2019	10
December 2019	26.5
February 2020	28.6
April 2020	50

(Source adapted from: https://www.businessofapps.com/data/disney-plus-statistics/)

(a) *Ceteris paribus*, the most likely consequence of the above data is that Disney+ will experience an increase in its:

(1)

☒ **A** fixed costs

☒ **B** income elasticity of demand

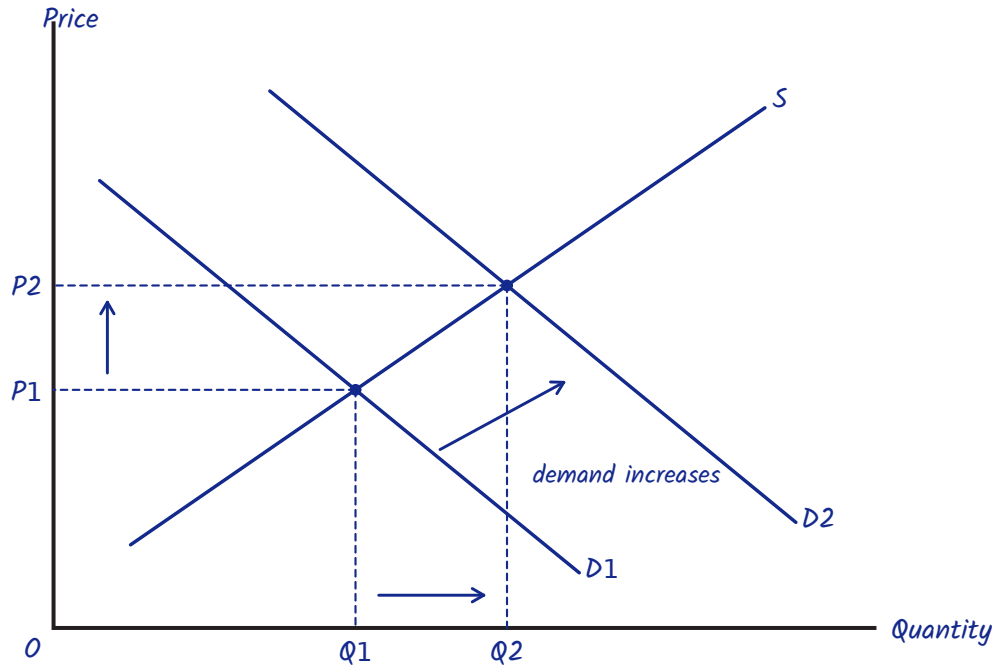
☒ **C** price elasticity of demand

☒ **D** revenue

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(b) Draw a supply and demand diagram to show the likely effect of the change in the number of subscribers on the market equilibrium for Disney+ services.

(4)



(Total for Question 1 = 5 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

2 The table below shows data on the drinks market in Chile in 2017.

Price elasticity of demand for sweetened drinks	−1.37
Cross price elasticity of demand for bottled water in response to a price change in sweetened drinks	+0.63

(Source: adapted from https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4098-x)

(a) The price of sweetened drinks increases by 5%. *Ceteris paribus*, calculate the percentage change in the quantity demanded for sweetened drinks. You are advised to show your working.

(2)

PED = %ΔQd ÷ %ΔP, so %ΔQd = PED × %ΔP

%ΔQd = −1.37 × 5%

= −6.85% (quantity demanded of sweetened drinks falls by 6.85%)

(b) The price of sweetened drinks increases by 5%. *Ceteris paribus*, calculate the percentage change in the quantity demanded for bottled water. You are advised to show your working.

(2)

XED = %ΔQd of bottled water ÷ %ΔP of sweetened drinks

%ΔQd = +0.63 × 5%

= +3.15% (quantity demanded of bottled water rises by 3.15%)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(c) Using the data on page 4, which **one** of the following is most likely?

(1)

		A decrease in the price of sweetened drinks will have the following effect on revenue:	Sweetened drinks and bottled water are:
☒	**A**	Decrease	Complements
☒	**B**	Decrease	Substitutes
☒	**C**	Increase	Complements
☒	**D**	Increase	Substitutes

(Total for Question 2 = 5 marks)

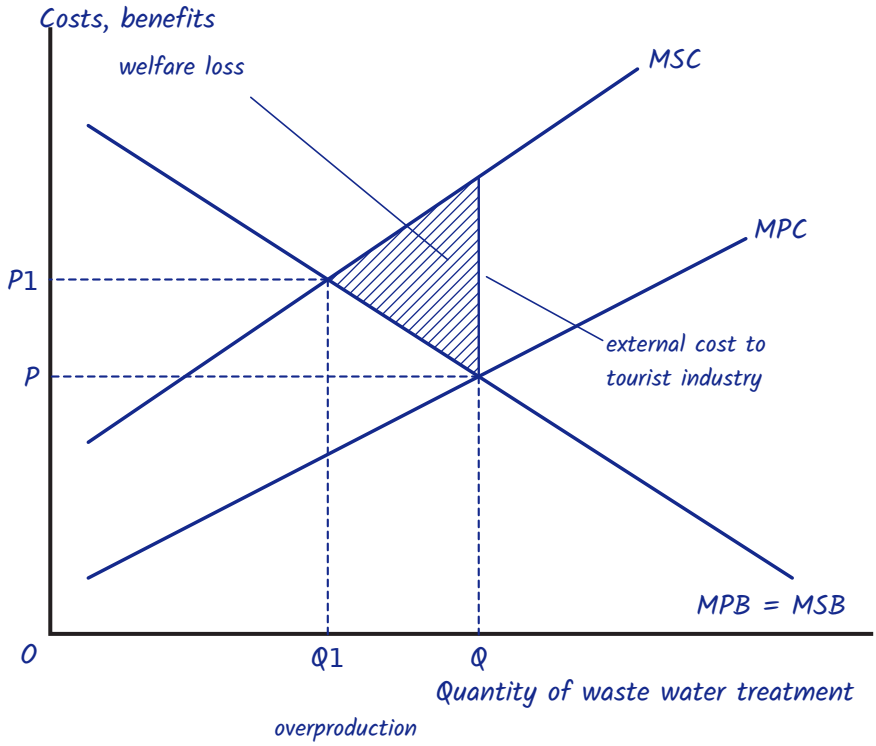
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

3 A company that provides drinking water and treats waste water has been fined £180 000 after an incident that killed about 2 500 fish. The charges relate to an illegal discharge of sewage from the waste water treatment plant that polluted nine kilometres of the River Severn, a popular tourist destination.

(Source: adapted from https://www.leaderlive.co.uk/news/wrexham/19393552.water-company-fined-today-sewage-leaked-wrexham-river-killing-2-500-fish/)

(a) Draw an externalities diagram to show the likely impact of the sewage discharge on the local tourist industry.

(4)



(b) Which **one** of the following is the most likely effect of the £180 000 fine?

(1)

To:

- ☒ **A** increase market failure
- ☒ **B** increase profits for the water company
- ☒ **C** reduce external costs
- ☒ **D** reduce government failure

(Total for Question 3 = 5 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

BLANK PAGE

QUESTION 4 BEGINS ON THE NEXT PAGE.

4 Pilgrim's Pride is the second-largest chicken supplier in the US. It will pay a $107.9 million fine for price fixing with Tyson Foods and other chicken suppliers. The firms limited production to force prices higher and harm major customers, including KFC. Pilgrim's Pride is thought to have gained at least $361 million in total revenue from the collusion.

(Source: adapted from https://www.drovers.com/news/industry/pilgrims-pride-agrees-price-fixing-fine)

(a) Draw a simple two firm/two outcome game theory model to show why the chicken suppliers may have colluded.

(4)

Revenue ($ million)	Pilgrim's: High price	Pilgrim's: Low price
Tyson: High price	Pilgrim's: $361m Tyson: $361m	Pilgrim's: $500m Tyson: $200m
Tyson: Low price	Pilgrim's: $200m Tyson: $500m	Pilgrim's: $300m Tyson: $300m

If both firms collude and charge a high price (restricting output), each earns $361 million in revenue, as Pilgrim's Pride is thought to have gained. If both compete with a low price, each earns only $300 million, which is less than $361 million.

If one firm undercuts while the other keeps a high price, the first mover gains $500 million and the firm left with the high price earns only $200 million, which is less than both $361m and $300m.

Without an agreement, each firm's dominant strategy is to charge a low price to avoid the worst outcome of $200m, so both end up at the Nash equilibrium of Low/Low with $300m each: a prisoners' dilemma. By colluding to limit production and keep prices high, both firms earn $361m and are better off, which is why the chicken suppliers colluded.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(b) Which **one** of the following is most closely associated with tacit collusion?

(1)

- ☒ **A** Overt sharing of information
- ☒ **B** Predatory pricing
- ☒ **C** Price wars
- ☒ **D** Unspoken agreements

(Total for Question 4 = 5 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

5 The makers of Fiat cars merged with the makers of Vauxhall cars in 2021. Fiat management had aggressively sought a merger to achieve economies of scale. The competition authorities in the EU investigated the merger.

(Source: adapted from https://www.thedrive.com/news/34856/the-merged-fiat-chrysler-and-peugeot-group-will-be-called-stellantis)

(a) Which **one** of the following best describes the merger of the makers of Fiat cars and Vauxhall cars?

(1)

- ☒ **A** Backward vertical integration
- ☒ **B** Forward vertical integration
- ☒ **C** Horizontal integration
- ☒ **D** Organic growth

(b) Explain **one** type of internal economies of scale that the newly merged car company may achieve.

(2)

Purchasing (bulk buying) economies: the larger merged firm buys steel and components in bulk, using monopsony buying power to negotiate lower prices from suppliers, which lowers its long-run average cost (LRAC) per car.

(c) Explain **one** likely concern the EU competition authorities may have had about the merger.

(2)

The merger increases market share and monopoly power, reducing competition in the EU car market. The merged firm could then raise prices and exploit consumers, reducing choice and consumer surplus.

(Total for Question 5 = 5 marks)

TOTAL FOR SECTION A = 25 MARKS

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

BLANK PAGE

QUESTION 6 BEGINS ON THE NEXT PAGE.

SECTION B

Read Figures 1 and 2 and extracts A and B before answering Question 6.

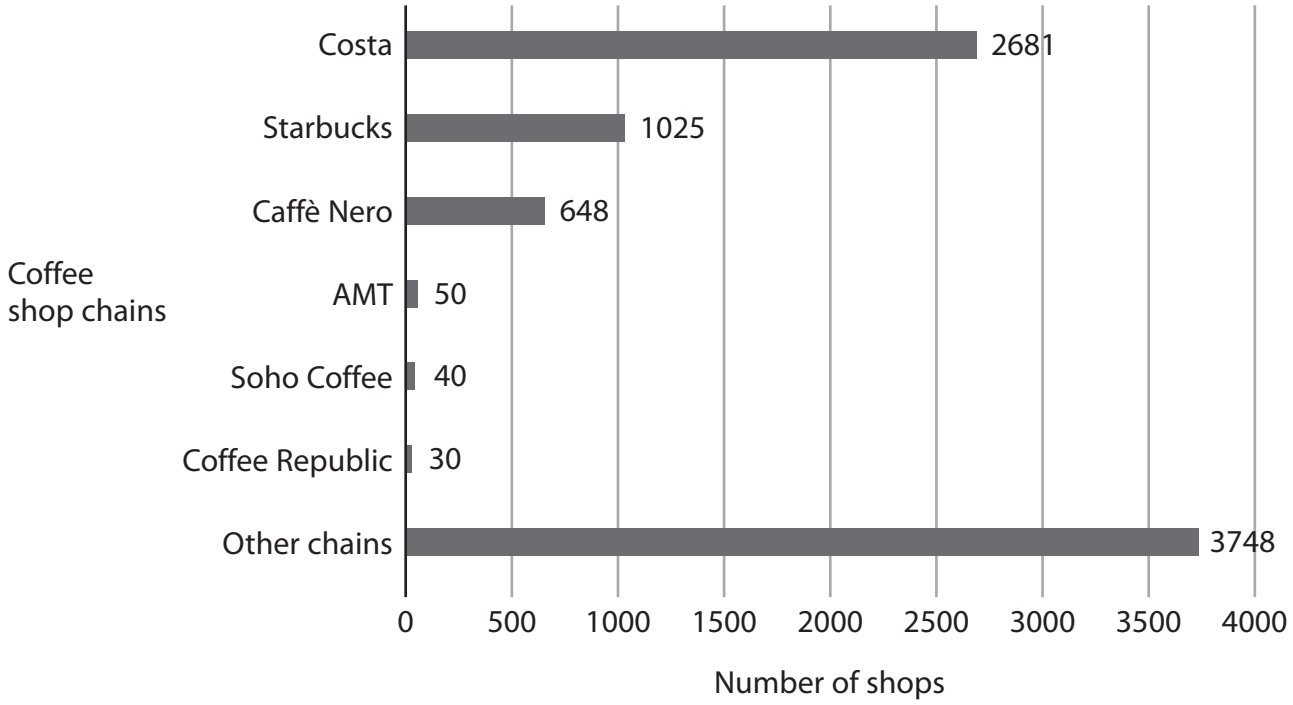
Write your answers in the spaces provided.

You are advised to spend 1 hour on this section.

Question 6

UK branded coffee shop chains market

Figure 1: Branded coffee shops by number of shops in the UK in 2021



(Source: adapted from https://www.statista.com/statistics/297863/leading-coffee-shop-chains-in-the-united-kingdom-uk-store-number/)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Figure 2: International coffee price (Arabica bean), US dollars per kilogram

Month	Price	Change
Jan 2020	3.13	–
Feb 2020	2.99	–4.47%
Mar 2020	3.27	9.36%
Apr 2020	3.41	4.28%
May 2020	3.30	–3.23%
Jun 2020	3.12	–5.45%
Jul 2020	3.24	3.85%
Aug 2020	3.60	11.11%
Sep 2020	3.67	1.94%
Oct 2020	3.35	–8.72%
Nov 2020	3.31	–1.19%
Dec 2020	3.48	5.14%

(Source: adapted from https://www.indexmundi.com/commodities/?commodity=other-mild-arabicas-coffee&months=12)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Extract A

Tough market conditions for coffee shops – but coffee quality is king

UK coffee shop chains have experienced slow growth opportunities and rising costs. In 2019 the UK market leader, Costa Coffee, opened over 60% fewer stores than in 2018, while Starbucks opened just three new stores overall in 2019.

By 2020, many costs were rising: staff shortages meant rising wages for baristas (trained coffeemakers), a 6.2% National Minimum Wage increase for over 25-year-olds and rising rents.

In a challenging UK economy, consumers placed coffee quality ahead of convenient location when choosing a coffee shop. This demonstrates the need for coffee shops to match rising expectations in the UK's increasingly crowded coffee shop market in order to stay competitive. Independent coffee shops (total 25 892 shops in 2020) remain a threat to the branded coffee shops as they pursue a unique luxury experience for customers. This will often focus on the atmosphere and customer service, luxury food and drink ranges and being a part of the local community. Independent coffee shops run on average profit as low as 2% of revenue, and many go out of business as new chains arrive in a locality.

In January 2020, Coca-Cola finalised its £3.9 billion takeover of market leader, Costa Coffee. The Coca-Cola company's stated aims are to maximise long-term returns to shareholders while being mindful of overall responsibilities such as supporting sustainable communities. Major brands, such as Costa, continue to lead coffee shop expansion in 2020 as competition intensifies.

(Source: adapted from https://www.worldcoffeeportal.com/Latest/InsightAnalysis/2020/February/5-UK-coffee-shop-market-dynamics-to-watch-in-2020)

Extract B

Greggs aiming for 'coffee shop experience'

Greggs is looking to increase its branded coffee shop market share after the British bakery chain achieved record profits and overtook Starbucks in the amount of coffee it served in the UK. Although Greggs will continue to focus on the food-to-go market, it will be investing in better coffee machines and providing WiFi. It wants one in three new outlets to have more seating. The company believes that it has the ability to take market share in two ways, by expanding its coffee range and at the same time enhancing the coffee shop experience. Greggs is modelling its plan on rival chain Pret A Manger, which has changed from focusing on food-to-go sales to mainly eating in. Greggs has transformed itself from an unremarkable seller of bread and pastries into one of the UK's most popular food-on-the-go chains, in part thanks to its embrace of vegan, gluten-free and healthy options as well as clever marketing that have changed its image.

(Source: adapted from Financial Times, 3 March 2020 https://www.ft.com/content/6fb6d73a-5d24-11ea-8033-fa40a0d65a98)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

6 (a) With reference to Figure 1, calculate the three-firm concentration ratio for branded coffee shop chains.

(5)

(b) With reference to Figure 2 and your understanding of price elasticity, examine **two** factors that may cause significant changes in the international price of coffee beans.

(8)

(c) Profit maximisation is assumed to be the business objective of most firms. With reference to Extract A, assess whether this is the case for coffee shop owners.

(10)

(d) Using a cost and revenue diagram, discuss the likely impact of 'rising costs' for coffee shops on their profitability (Extract A, line 2).

(12)

(e) With reference to the information provided, discuss whether the coffee shop market is contestable.

(15)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

6 (a) With reference to Figure 1, calculate the three-firm concentration ratio for branded coffee shop chains.

(5)

The three-firm concentration ratio is the combined market share of the three largest firms as a proportion of the whole market.

Three largest chains: Costa + Starbucks + Caffè Nero = 2681 + 1025 + 648 = 4354 shops

Other chains: 50 + 40 + 30 + 3748 = 3868 shops

Total branded coffee shops = 4354 + 3868 = 8222 shops

Three-firm concentration ratio = 4354 ÷ 8222 × 100

= 52.96%

So the three largest chains have about 53% of branded coffee shops, showing a concentrated, oligopolistic market.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(b) With reference to Figure 2 and your understanding of price elasticity, examine **two** factors that may cause significant changes in the international price of coffee beans.

(8)

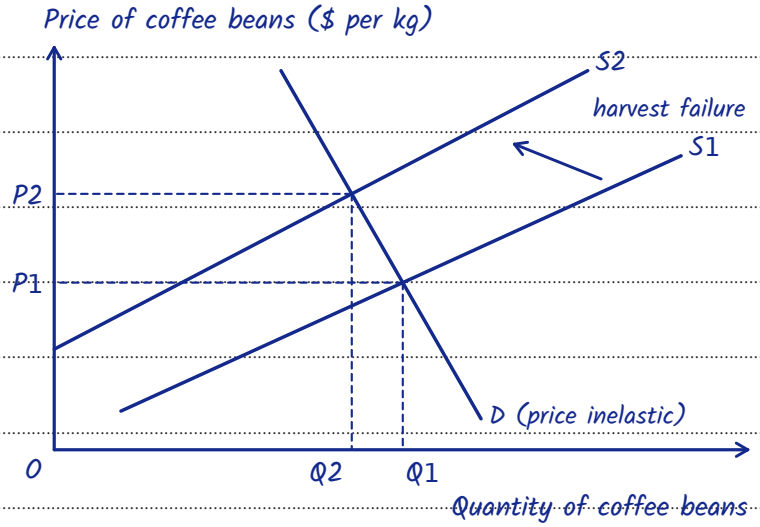


Figure 2 shows that the international price of Arabica coffee beans is volatile: it rose by 9.36% from $2.99 per kg in February 2020 to $3.27 in March, rose by 11.11% to $3.60 in August, but fell by 8.72% in October. Between April (+4.28%) and May 2020 (−3.23%) the change in price moved by 7.51 percentage points.

One factor is a change in supply due to supply-side shocks, such as poor weather, crop disease or harvest failure in producing countries, or supply chain failure such as the closure of farms and freight during 2020. A fall in supply shifts the supply curve left from S1 to S2, as in my diagram. Because demand for coffee is price inelastic (there are few close substitutes, it is habit-forming and addictive, and it takes a small proportion of income), the price rises sharply from P1 to P2 with only a small fall in quantity from Q1 to Q2. This may explain the 11.11% rise in August 2020.

A second factor is a change in demand, for example due to changes in income, tastes and preferences or speculative demand from traders buying coffee in expectation of future price rises. In 2020 the closure of cafés and coffee shops reduced demand, shifting the demand curve left. Because the supply of coffee beans

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

is price inelastic in the short run, as coffee plants take years to grow and there are time lags before output can change, a change in demand leads mainly to a large change in price, such as the 5.45% fall in June 2020.

However, the size of the price change depends on the degree of price elasticity: if demand is more price elastic when supply shifts, or supply more elastic when demand shifts, the price change is smaller. Many shocks are transitory, such as a single poor harvest, so prices return to normal over time, which is why the average price in 2020 was a fairly stable $3.32 per kg. Coffee beans are also easy to store, so stocks can be released after a poor harvest, and buffer stocks and futures markets dampen price instability. In the long run supply becomes more price elastic as farmers plant more, so price changes are smaller.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(c) Profit maximisation is assumed to be the business objective of most firms.
With reference to Extract A, assess whether this is the case for coffee shop owners.

(10)

Profit maximisation occurs where marginal cost equals marginal revenue (MC = MR), since producing one more unit beyond this would add more to cost than to revenue. It is assumed to be the aim of owners and shareholders, as it maximises their return.

Extract A suggests that for some coffee shop owners this is the case. After its £3.9 billion takeover of Costa Coffee, Coca-Cola's stated aim is 'to maximise long-term returns to shareholders', so Costa, the market leader with 2681 shops, is likely to be run to maximise profit in the long run. Faced with rising costs such as the 6.2% increase in the National Minimum Wage and rising rents, Costa opened over 60% fewer stores in 2019 than in 2018, which is consistent with protecting profits by avoiding unprofitable outlets.

However, many coffee shop owners are likely to pursue other objectives. Independent coffee shops run on average profits as low as 2% of revenue, which suggests profit satisficing or survival: they aim to make at least normal profit and stay in business in an 'increasingly crowded' market where many go out of business when new chains arrive. Their focus on a unique luxury experience, customer service, luxury food and drink and being part of the local community raises costs and lowers profit, so they satisfice to achieve customer satisfaction and community goals.

Large chains may instead pursue sales maximisation (AC = AR) or revenue maximisation (MR = 0) to increase market share, as 'major brands, such as Costa, continue to lead coffee shop expansion in 2020 as competition intensifies'. Costa could also use limit pricing to deter entry by rivals such as Greggs, which sacrifices some profit in the short run.

Evaluation depends on who the owners are and the time period. Short-term objectives

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

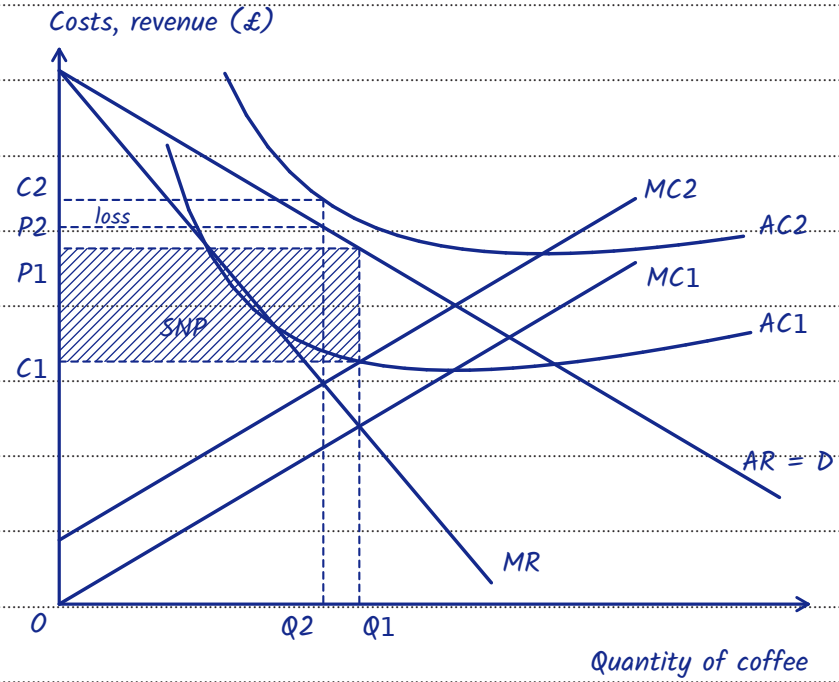
may be used to achieve long-term profitability; investing in better quality coffee raises costs now, but as consumers place coffee quality ahead of convenient location it may raise demand and profits in the long run. Coca-Cola also says it is mindful of wider responsibilities such as supporting sustainable communities, so it may satisfice to meet social and environmental goals. In large chains there is a divorce of ownership and control, so managers may pursue revenue or sales growth rather than shareholders' profits (the principal agent problem). Finally, it is difficult for coffee shops to calculate MC and MR precisely, so even if they want to profit maximise they may use rules of thumb. Overall, long-run profit maximisation is likely for chains like Costa, while independent owners are more likely to satisfice or aim for survival.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(d) Using a cost and revenue diagram, discuss the likely impact of 'rising costs' for coffee shops on their profitability (Extract A, line 2).

(12)



Profitability is the level of profit relative to revenue, where profit = total revenue – total cost. Extract A states that by 2020 many costs were rising for coffee shops: staff shortages meant rising wages for baristas, a 6.2% National Minimum Wage increase for over 25-year-olds and rising rents.

Rising rents are a fixed cost, as they do not vary with output, so they shift the average cost curve upwards but leave marginal cost unchanged. Higher wages for baristas are mainly a variable cost, because coffee shops are labour intensive and need more staff to serve more customers, so they shift both the AC and MC curves upwards, from AC1 and MC1 to AC2 and MC2 in my diagram. Higher prices of coffee beans, which rose from $3.13 to $3.48 per kg during 2020, also raise variable costs.

Initially the coffee shop maximises profit where MC1 = MR, at output Q1 and price P1 with average cost C1, making supernormal profit (SNP) shown by the shaded area (P1 – C1) × Q1. After costs rise, the profit-maximising output falls to Q2,

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

where MC2 = MR, and the price rises to P2, but average cost rises to C2, which is above P2. The supernormal profit is replaced by a loss of (C2 – P2) × Q2, so profitability falls. If price falls below average variable cost, the coffee shop would shut down in the short run, and in the long run it will exit if it cannot cover average cost. This helps explain why Costa opened over 60% fewer stores in 2019, Starbucks opened just three new stores and many independents, with profits as low as 2% of revenue, go out of business.

However, the impact on profitability may be smaller than this. Coffee beans are a small proportion of total cost, so volatile bean prices have little effect, whereas rent and labour are a high proportion of cost. Profit is also determined by revenue: if demand for coffee is price inelastic, as it is habit-forming and branded, chains can pass on higher costs as higher prices or absorb part of the rise, maintaining their margins. Large chains such as Costa, backed by Coca-Cola, enjoy economies of scale that offset higher costs, and may diversify into new products or new geographical markets.

Moreover, rising costs may cause some firms to exit, so the remaining firms gain market share and revenue, restoring profit in the long run, and rents may fall in the long run if property prices fall. There is insufficient information on the size of each cost increase relative to revenue, and some 2020 closures were due to external factors such as the pandemic. Overall, rising costs are likely to reduce the profitability of coffee shops, especially small independents with low margins, while large chains with brand loyalty and price inelastic demand can better protect their profits.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(e) With reference to the information provided, discuss whether the coffee shop market is contestable.

(15)

A contestable market is one with low barriers to entry and exit and low sunk costs, so the threat of new entrants forces existing firms to behave competitively, setting prices close to average cost and earning only normal profit in the long run. The number of firms in the market matters less than the ease of entry and exit.

There is evidence that the coffee shop market is contestable. Barriers to entry are low: a new coffee shop can rent a shop floor rather than buy property, and rent coffee machines rather than buy them, so start-up costs are low. Sunk costs are also low, since training baristas requires little expenditure and equipment can be resold or returned on leaving the market, so exit is easy. This is supported by the very large number of independent coffee shops, 25 892 in 2020, compared with 8222 branded chain shops, and Extract A states that independents 'remain a threat to the branded coffee shops' in an 'increasingly crowded' market.

Entry by firms from related markets also shows contestability. Extract B shows that Greggs, a bakery chain, is entering the branded coffee shop market simply by investing in better coffee machines, providing WiFi and adding more seating, and it has already overtaken Starbucks in the amount of coffee served in the UK. Pret A Manger has similarly changed from food-to-go to mainly eating in, and Coca-Cola's takeover of Costa shows that firms from other markets can enter. The threat of entry limits supernormal profit: independents earn profits as low as 2% of revenue, close to normal profit.

However, there are reasons why the market is not fully contestable. The branded market is highly concentrated, with a three-firm concentration ratio of nearly 53%, and Costa alone has 2681 shops. This implies a strong brand image and brand loyalty, which are barriers to entry because new entrants must spend heavily on

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

advertising and promotion to attract customers, and this spending is a sunk cost that cannot be recovered on exit. Big chains have the finance to spend on promotion that smaller independent coffee shops cannot match.

Large chains also benefit from economies of scale, such as bulk buying of coffee beans and spreading marketing costs, giving them lower average costs, so they could use limit pricing or predatory pricing to deter or force out entrants: many independents 'go out of business as new chains arrive in a locality'. The best central locations are expensive and rents are rising, so firms seeking a larger shop floor in a central location face high costs. There may also be interdependence or tacit collusion between the major chains, and Coca-Cola's financial backing makes Costa an even stronger incumbent.

The degree of contestability depends on which part of the market is considered. Entry at a small, local scale as an independent café is easy, so the overall coffee shop market is fairly contestable, but entry at a national scale to compete with Costa and Starbucks is difficult, so the branded chain segment is much less contestable. It also changes over time: firms such as Greggs with existing outlets and brands can enter with low additional sunk costs, while rising wages and rents raise barriers for small firms. Overall, the coffee shop market is contestable for independent cafés and for firms like Greggs that already have outlets, but brand loyalty, sunk advertising costs and economies of scale mean the branded chain market is only partly contestable.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(Total for Question 6 = 50 marks)

TOTAL FOR SECTION B = 50 MARKS

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

SECTION C

Answer ONE question from this section.

Write your answer in the space provided.

You are advised to spend 30 minutes on this section.

EITHER

7 Tesla held an 82% market share of the electric vehicle market in the United States during the first half of 2020.

(Source: adapted from https://electrek.co/2020/08/21/tesla-holds-us-ev-market-losing-federal-tax-credit/)

Evaluate whether a monopoly is likely to operate efficiently. Refer to at least one monopoly of your choice.

(Total for Question 7 = 25 marks)

OR

8 Some occupations in the UK are facing large labour shortages. Hard-to-fill vacancies include qualified chefs, software engineers, construction workers and qualified nurses.

(Source: adapted from https://www.ft.com/content/36baacce-ddd0-11e8-9f04-38d397e6661c)

Evaluate the factors that might influence the supply of labour in an occupation of your choice.

(Total for Question 8 = 25 marks)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 7** ☒ **Question 8** ☒

Write your answer here:

Question 7

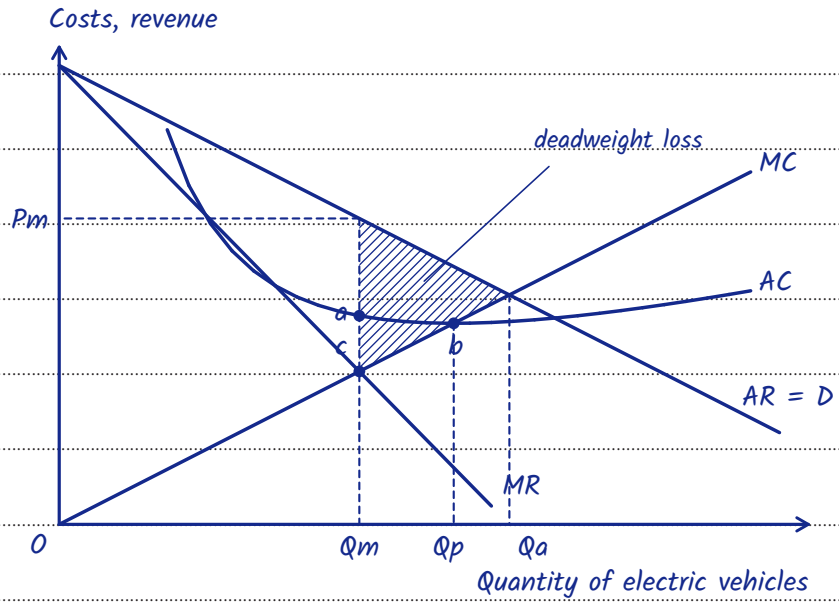
A monopoly is a single seller in a market, although in practice a firm with over 25% market share has monopoly power. Tesla, with an 82% share of the US electric vehicle market in the first half of 2020, is a clear example. Productive efficiency is producing at the lowest point of the average cost curve; allocative efficiency is where price equals marginal cost (P = MC), so resources go to the goods consumers value most; dynamic efficiency is improvement in products and processes over time, shifting the LRAC downwards; and x-inefficiency is organisational slack, where costs are above the lowest possible AC.

Traditional theory suggests that a monopoly will not operate efficiently. A profit-maximising monopolist produces where MC = MR, at output Qm and price Pm in my diagram. Output is at point a on the AC curve, not at the lowest point b (output Qp), so it is productively inefficient. The price Pm is above marginal cost at Qm (point c), so it is allocatively inefficient, and the shaded triangle shows the deadweight welfare loss, as output is restricted below Qa where P = MC. Tesla can act as a price maker, charging high prices and reducing consumer surplus.

Also, because the monopoly faces little competition, managers may become complacent, leading to organisational slack and x-inefficiency, so actual costs lie above the AC curve. Supernormal profits may not be reinvested but paid to shareholders as higher dividends, so the monopoly may be dynamically inefficient.

With high barriers to entry, such as Tesla's patents, brand loyalty and its network of charging stations, there is little threat of competition to force it to improve.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA



However, a monopoly may operate efficiently. A large firm can exploit economies of scale, such as purchasing economies from bulk buying batteries, technical economies from huge factories and robots, and monopsony power to reduce costs. Lower long-run average costs may mean it produces more cheaply than many small firms. Where the market only supports one firm at minimum efficient scale, a natural monopoly such as water supply is more productively efficient than competition.

Monopolies can also be dynamically efficient. Supernormal profits finance research and development, so Tesla can invest in battery technology and new models, which lowers costs, shifting the LRAC down, and improves product quality and choice in the long run. Without the reward of monopoly profit, firms might not take the risk of innovation.

Furthermore, a monopoly may not profit maximise. If it fears new entrants it may use limit pricing, setting a lower price closer to the allocatively efficient level, and offer good customer care, so the threat of entry acts as a surrogate for competition.

The US electric vehicle market is becoming more contestable as established car makers launch electric models, so Tesla must keep prices and costs down.

The efficiency of a monopoly therefore depends on several factors. Firstly, the degree

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

of monopoly power and the ability of consumers to switch: consumers can switch from Tesla to petrol or hybrid cars, limiting its pricing power. Secondly, the firm's objectives and the principal agent problem: if shareholders demand high dividends, profits may not be reinvested. Thirdly, government intervention: regulators can impose price caps, such as RPI – X on water companies, or taxes, forcing monopolies to cut costs. However, intervention can damage efficiency through government failure, such as regulatory capture or weak regulators with imperfect information, and price caps may reduce funds for investment. Finally, in the short run a monopoly is likely to be allocatively and productively inefficient, but in the long run dynamic efficiency gains may outweigh these static losses.

In conclusion, a monopoly is unlikely to be allocatively efficient and risks x-inefficiency, but it can be productively and dynamically efficient through economies of scale and investment. Tesla has used its profits to innovate and lower battery costs, so it has been dynamically efficient, helped by the threat of new entrants. On balance, a monopoly is most likely to operate efficiently where the market is contestable or effectively regulated; where barriers to entry are high and regulation is weak, inefficiency is more likely.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Question 8

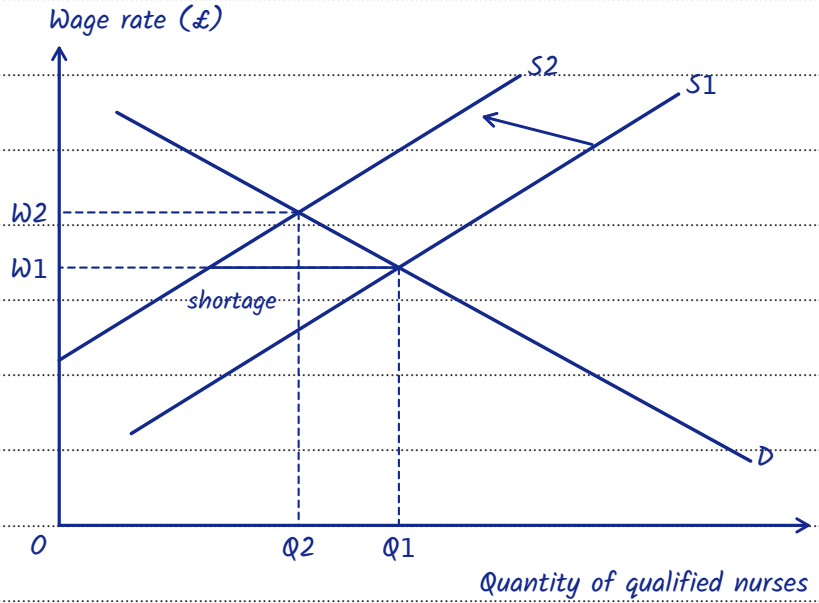
The supply of labour to an occupation is the number of workers willing and able to work in it at each wage rate. The supply curve slopes upwards because a higher wage attracts workers from other occupations. A change in the wage causes a movement along the curve, while non-wage factors shift it. I will consider qualified nurses in the UK, a hard-to-fill occupation.

The most important factor is the wage relative to other occupations. Nurses' pay is set through the NHS pay review body, and if it rises more slowly than pay in alternatives such as retail management or agency work, fewer people will train or remain as nurses. The net wage after income tax and national insurance also matters: a higher marginal tax rate reduces the reward for extra shifts, and benefits affect the incentive to work. Non-monetary factors such as job satisfaction, working conditions, shift patterns, safety and stress also matter: nursing gives high job satisfaction, but long hours and stress have caused many nurses to leave.

Secondly, the skills and qualifications required are a major barrier. Qualified nurses need a three-year degree, and replacing NHS bursaries with tuition fees and loans in England in 2017 increased the cost of training, so fewer students applied. This reduces the supply of labour, shifting the supply curve left from S1 to S2 in my diagram. At the original wage W1 there is a shortage, shown by hard-to-fill vacancies; if wages can rise, the wage increases to W2 and employment falls from Q1 to Q2.

Thirdly, net migration has a large effect. The UK has relied on nurses from the EU, and after the Brexit vote the number of EU nurses registering in the UK fell sharply, reducing supply. Fourthly, demographics: an ageing workforce and early retirement reduce supply, while more women entering the workforce increases it. High housing costs in London make it hard for nurses to live near hospitals, causing geographical

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA



immobility, and infrastructure affects the ability to commute. Flexibility, such as part-time or bank shifts, allows people with caring or study commitments to work, raising supply, and trade union power can improve pay and conditions.

Evaluating these factors, the relative wage is probably the most significant in the long run, as it affects both the rate of people entering and the rate leaving the profession. However, the supply of nurses is wage inelastic in the short run, because training takes three years, so even a large pay rise would not quickly end the shortage. Short-run supply depends more on retaining existing nurses through better conditions and flexible hours, while long-run supply depends on the cost and ease of training.

The significance of factors also changes with the state of the economy: in a recession, NHS job security makes nursing more attractive, whereas in a boom nurses may leave for better paid jobs. Government measures, such as increasing non-EU net migration through the Health and Care visa, can offset the fall in EU nurses, although language barriers and differences in qualifications limit this. Information problems and barriers to work, such as caring commitments or disability discrimination, also reduce supply for some groups.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

In conclusion, the supply of nurses depends on a combination of factors, and a combination of measures is likely to have the biggest impact. Relative pay, training costs and net migration are the key factors, but their importance differs between the short run, where retention and migration matter most, and the long run, where pay and the cost of training are decisive. The shortage will only end if the rate of nurses entering exceeds the rate leaving.

TOTAL FOR SECTION C = 25 MARKS
TOTAL FOR PAPER = 100 MARKS

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

BLANK PAGE

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA