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Surname: StemUp Model Solution

Other names:

Pearson Edexcel Level 3 GCE

Centre Number

Candidate Number

Economics A

Advanced

Paper 1: Markets and Business Behaviour

Tuesday 6 June 2017 – Afternoon

Time: 2 hours

Paper Reference **9EC0/01**

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 ▶

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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 The table shows market data for e-cigarette kits. The original equilibrium price is £23.

Price £	Quantity demanded per month (000)	Quantity supplied per month (000)	New quantity demanded per month (000)	New quantity supplied per month (000)
25	5	9	8	10
24	6	8	9	9
23	7	7	10	8
22	8	6	11	7
21	9	5	12	6

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As a result of a successful advertising campaign, demand increased by 3 000 e-cigarette kits at all prices. At the same time production costs fell leading to an increase in supply of 1 000 e-cigarette kits at all prices.

(a) Calculate the new equilibrium price and quantity following the successful advertising campaign and the fall in production costs. Use the last two columns for your working.

(4)

Demand increases by 3 000 at all prices, so add 3 to each quantity demanded; supply increases by 1 000, so add 1 to each quantity supplied (see the last two columns of the table).

At £24: new quantity demanded = 6 000 + 3 000 = 9 000 and new quantity supplied = 8 000 + 1 000 = 9 000, so the market clears.

New equilibrium price = £24

New equilibrium quantity = 9 000 e-cigarette kits per month

(b) Research conducted in New Zealand in 2014 estimated the cross elasticity of demand for e-cigarettes to be 0.16 in response to changes in the price of tobacco. This implies that a 5% increase in the price of tobacco will cause the percentage change in demand for e-cigarettes to be:

(1)

- ☐ **A** -31.25
- ☐ **B** -0.16
- ☒ **C** 0.8
- ☐ **D** 31.25

(Total for Question 1 = 5 marks)

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2 Between 2010 and 2015 the average price of tea in the UK increased from £7.20 per kilo to £8.48 per kilo. Over the same period the quantity of tea purchased fell from 97 million kilos to 76 million kilos.

(Source: http://www.theguardian.com/lifeandstyle/shortcuts/2015/aug/05/brew-do-you-think-you-are-why-tea-needs-to-copy-coffee-in-order-to-survive)

(a) Assume that the change in the quantity of tea purchased was only caused by the change in the price of tea. Calculate the price elasticity of demand for tea in response to the rise in its price. You are advised to show your working.

(2)

% change in quantity demanded = (76 − 97) ÷ 97 × 100 = −21.65%

% change in price = (8.48 − 7.20) ÷ 7.20 × 100 = +17.78%

PED = % change in Qd ÷ % change in P = −21.65 ÷ 17.78

PED = −1.2 (price elastic)

(b) Calculate the change in total sales revenue for UK tea retailers between 2010 and 2015. You are advised to show your working.

(2)

Original revenue = £7.20 × 97 million = £698.4 million

New revenue = £8.48 × 76 million = £644.5 million

Change = £644.5m − £698.4m = −£53.9 million

Total sales revenue fell by £53.9 million (a fall of about 7.7%).

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(c) Estimates for the demand for black tea in the UK suggest that it is an inferior good. This implies it has a negative:

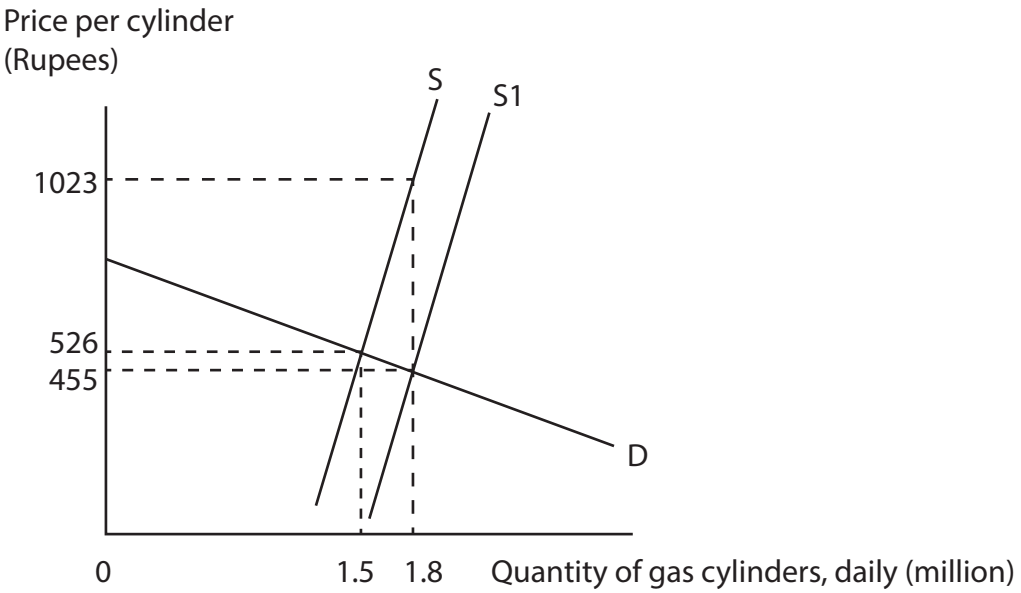
(1)

- ☐ **A** cross elasticity of demand
- ☒ **B** income elasticity of demand
- ☐ **C** price elasticity of demand
- ☐ **D** price elasticity of supply

(Total for Question 2 = 5 marks)

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3 The Indian government has introduced a subsidy on domestic cooking gas cylinders in the city of Mumbai. The diagram below shows the effect following the introduction of the subsidy.



(Source: https://www.iocl.com/products/indanegas.aspx and http://indianexpress.com/article/business/business-others/lpg-subsidy-fixed-at-rs-568-price-to-change-after-march/)

(a) Calculate the total domestic cooking gas subsidy paid daily by the Indian government. You are advised to show your working.

(2)

Subsidy per cylinder = 1023 – 455 = 568 rupees

Total subsidy = 568 × 1.8 million cylinders

= 1 022.4 million rupees per day (1 022 400 000 rupees)

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(b) Calculate the percentage share of the total subsidy received by:

(i) consumers

(1)

Consumer share per cylinder = 526 − 455 = 71 rupees

71 ÷ 568 × 100 = 12.5% received by consumers

(ii) producers

(1)

Producer share per cylinder = 1023 − 526 = 497 rupees

497 ÷ 568 × 100 = 87.5% received by producers

(c) One effect of the subsidy is to increase:

(1)

- ☒ **A** consumer surplus
- ☐ **B** market failure
- ☐ **C** public good provision
- ☐ **D** tax revenue

(Total for Question 3 = 5 marks)

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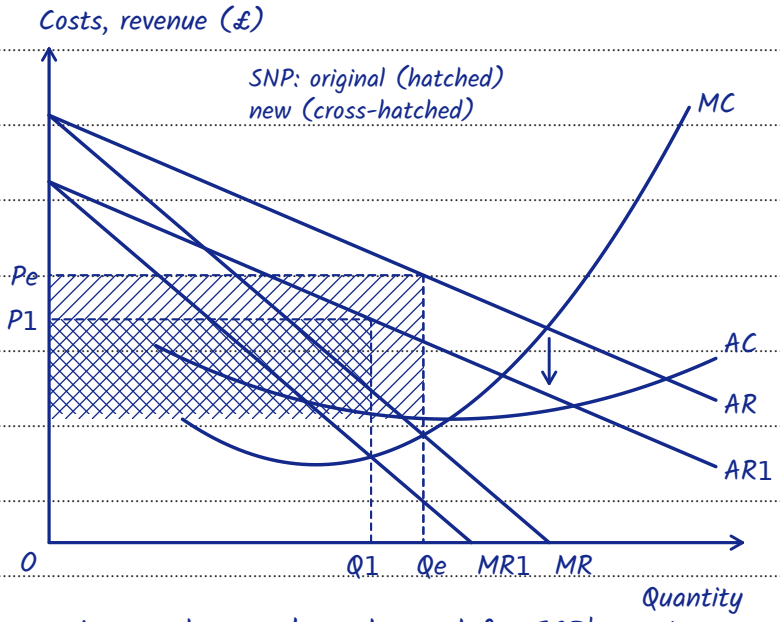
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4 In 2015 JCB, the construction equipment manufacturer, experienced a 6% fall in revenue. This resulted from a reduction in sales of construction equipment to emerging markets.

(a) Draw a cost and revenue diagram to show the likely impact of a reduction in sales of construction equipment on JCB's profits.

(4)



Lower sales to emerging markets reduce demand for JCB's equipment, so AR and MR shift left to AR1 and MR1. At the new profit maximising output where MC = MR1, output falls from Qe to Q1 and price from Pe to P1. Supernormal profit falls from the original area to the smaller cross-hatched area, so JCB's profits are likely to fall.

(b) In India JCB has a strong brand image and a 50% share of the market for construction equipment. This means the construction equipment market in India is likely to have a low level of:

(1)

- ☒ **A** concentration
- ☒ **B** contestability
- ☒ **C** private ownership
- ☒ **D** specialisation

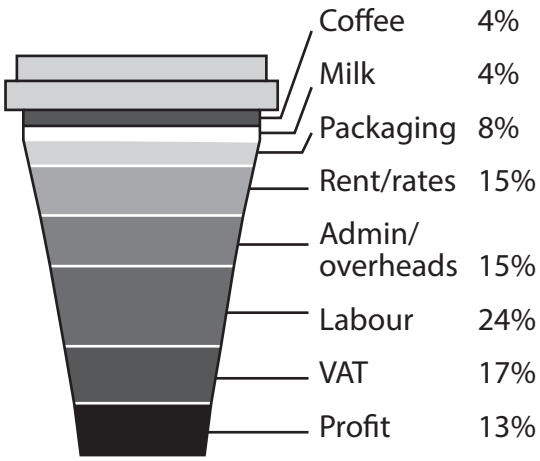
(Total for Question 4 = 5 marks)

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5 Figure 1 shows the distribution of the revenue received from the sale of a Starbucks cappuccino drink priced at £2.27 in 2015.

Figure 1



(Source: adapted from Allegra strategies research and analysis, reported in The Times, 27th January 2015)

(a) Which **one** of the following is a fixed cost to Starbucks?

(1)

- ☒ **A** Coffee
- ☒ **B** Milk
- ☒ **C** Packaging
- ☒ **D** Rent

(b) Explain the difference between fixed costs and variable costs.

(2)

Fixed costs do not change as output increases or decreases in the short run, for example Starbucks' rent and rates must be paid however many cappuccinos are sold.

Variable costs vary directly with output, rising as more is produced, for example the coffee, milk and packaging used in each drink.

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(c) With reference to Figure 1, calculate the profit (in pence) for a cappuccino drink.
You are advised to show your working.

(2)

Profit = 13% of 227p

= 13 × 227 ÷ 100 = 0.13 × 227

= 29.5p profit per cappuccino

(Total for Question 5 = 5 marks)

TOTAL FOR SECTION A = 25 MARKS

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QUESTION 6 BEGINS ON THE NEXT PAGE.

SECTION B

Read Figures 1 and 2 and the following extracts (A to C) before answering Question 6.

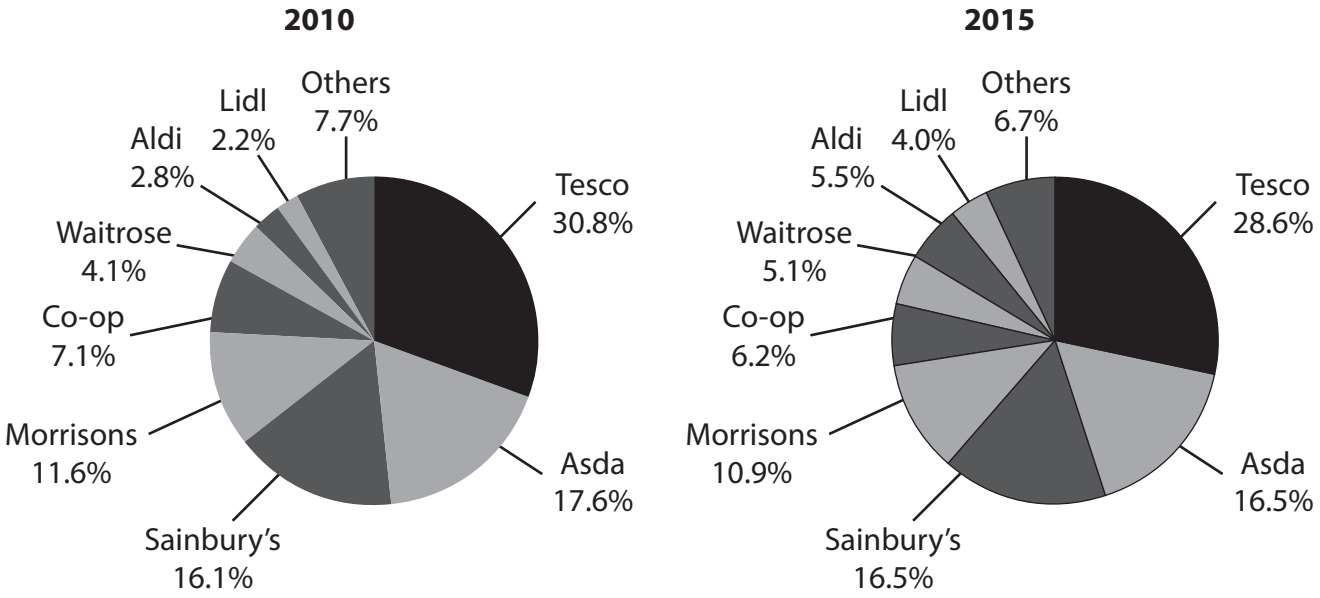
Write your answers in the spaces provided.

You are advised to spend 1 hour on this section.

Question 6

Supermarket price war, food waste and possible mergers

Figure 1: Market shares by total revenue in the UK supermarket sector, 2010 and 2015

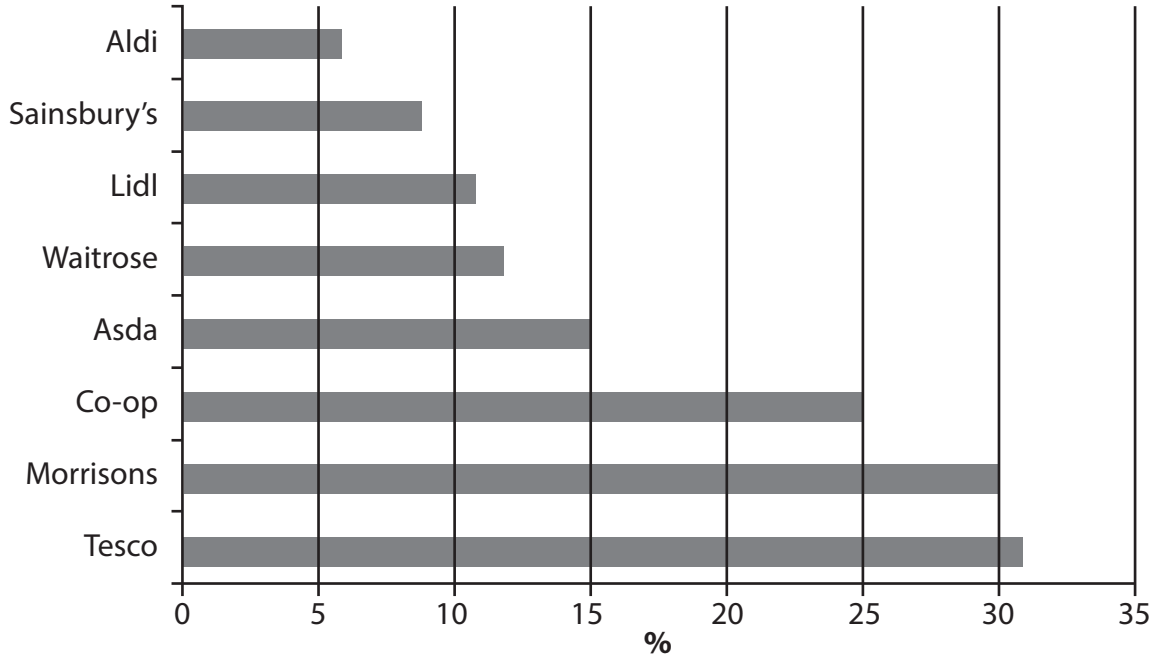


(Source: Kantar worldpanel, http://www.kantarworldpanel.com/en/grocery-market-share/great-britain/snapshot/11.10.15/)

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Figure 2: Proportion of food suppliers reporting that the following supermarkets fail to meet the Groceries Code of Conduct, 2015.



(Source: YouGov poll of more than 1100 food suppliers to supermarkets. Reported in The Times, 23 June 2015)

Extract A

Supermarket price war puts pressure on their food suppliers

The number of food suppliers (to supermarkets) struggling to remain in business has increased by more than 50% over the past year as supermarkets engage in an intense price war. It has never been tougher for the UK's food suppliers according to a study by accountants Begbies Traynor. It blames aggressive price-cutting by the supermarkets and delays in payments to food suppliers as the main causes of the difficulties. Further problems include food suppliers being forced to pay excessive amounts for packaging specified by supermarkets and funding in-store promotions. Almost 90% of struggling food suppliers are small and medium-sized businesses.

The price war has contributed to food prices paid by consumers falling by 1.7% over the past two years.

The market shares of the big four supermarkets – Tesco, Asda, Sainsbury's and Morrisons – are under pressure as shopping habits change. Many consumers are switching from one main weekly shop to shopping more frequently at local discount stores such as Aldi and Lidl or purchasing goods online from other grocery retailers.

The big four supermarkets have responded by putting more pressure on their suppliers despite an investigation by the Groceries Code Adjudicator (GCA). The GCA has the power to fine supermarkets up to 1% of their annual sales revenue if they break the Groceries Code of Conduct. A YouGov study found considerable differences between the supermarkets in meeting the Code with Aldi performing well but Tesco badly. Despite the Groceries Code, many food suppliers are reluctant to complain for fear of losing contracts with the supermarkets.

(Source: adapted from 'Supermarket price war takes toll on UK food suppliers'. Rupert Jones, The Guardian, 20th July 2015)

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Extract B

Food waste in the supply chain

A report from the British Retail Consortium reveals that supermarkets are directly responsible for around 0.2 million tonnes of food waste every year. This is due to the expiry of use-by-dates and poor handling of stock.

However, 4.1 million tonnes of food waste occurs annually in the food supply chain before it even reaches the supermarkets, indicating the existence of information gaps. The supermarkets are cooperating with food suppliers and farmers to try to reduce this waste. This involves improving forecasts for supply and demand of food and increasing the reliability of transportation and storage.

Consumers, the final stage of the supply chain, waste a further 7 million tonnes of food each year. This suggests irrational behaviour. Supermarkets are also working with consumers to reduce the waste by providing advice on how to store and use leftover food. The development of packaging designs to keep food fresher for longer is one of the innovations under way to reduce waste.

(Source: adapted from 'Supermarkets tally up food waste bill'. Will Nicholls, in Businessgreen, 19th January 2015. http://www.businessgreen.com/bg/news/2390792/supermarkets-tally-up-food-waste-bill)

Extract C

Proposed merger activity in the supermarket sector

Analysts at Société Générale, an investment bank, have recommended a merger between Sainsbury's and Morrisons. They claim it would lead to increased economies of scale and market power for the combined business. Such a merger between the third and fourth largest supermarkets in Britain would have been unrealistic a few years ago due to concerns of its impact in reducing competition. However, the chances of getting permission from the Competition and Markets Authority have increased following the growth of Aldi and Lidl. Giant mergers have been approved in other sectors such as Lloyds-HBOS (banking) and British Telecom-EE (telecommunications).

The suggested merger would have its challenges. There is considerable overlap between the locations of the stores and the enlarged company would require the rationalisation and co-ordination of hundreds of thousands of employees. A new expensive IT system is likely to be required and the underlying difficult market trends would remain in the food retailing industry.

(Source: adapted from 'Tesco-bury and AS-Morrisons. Could Britain's supermarkets be about to merge?' Graham Ruddick, in The Telegraph, 16th December, 2015. http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/11699724/Tesco-burys-and-AS-Morrisons.-Could-Britains-supermarkets-be-about-to-merge.html)

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6 (a) With reference to Figure 1 and Extract A, explain **one** likely reason for the change in the four-firm concentration ratio of the supermarket sector between 2010 and 2015.

(5)

(b) With reference to Figure 2 and Extract A, discuss the possible impact of supermarket monopsony power on both food suppliers and consumers.

(12)

(c) Examine measures the government might use to restrict the monopsony power of supermarkets.

(8)

(d) Assess the extent to which 'information gaps' (Extract B, lines 5 and 6) and 'irrational behaviour' (Extract B, line 11) are the main causes of food waste in the UK.

(10)

(e) Discuss the likely problems for Sainsbury's and Morrisons if the suggested merger between them goes ahead. Refer to Figure 1, Extract C and your own knowledge in your answer.

(15)

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(a) With reference to Figure 1 and Extract A, explain **one** likely reason for the change in the four-firm concentration ratio of the supermarket sector between 2010 and 2015.

(5)

A four-firm concentration ratio measures the combined market share of the four largest firms in a market.

In 2010 the big four (Tesco, Asda, Sainsbury's and Morrisons) had 30.8 + 17.6 + 16.1 + 11.6 = 76.1% of the market. In 2015 this was 28.6 + 16.5 + 16.5 + 10.9 = 72.5%, so the four-firm concentration ratio fell by 3.6 percentage points.

One likely reason is the growth of discount stores such as Aldi and Lidl. Extract A explains that shopping habits are changing, with many consumers switching from one main weekly shop to shopping more frequently at local discount stores. Aldi's share rose from 2.8% to 5.5% and Lidl's from 2.2% to 4.0%. Because Aldi and Lidl focus on low prices and are convenient local stores, their sales have grown faster than those of the big four, so the big four lost market share and the market became less concentrated.

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(b) With reference to Figure 2 and Extract A, discuss the possible impact of supermarket monopsony power on both food suppliers and consumers.

(12)

Monopsony power is the market power of a dominant buyer of a good or service, which allows it to drive down the price it pays its suppliers. The big supermarkets buy a large share of the food produced by UK food suppliers, so suppliers depend on them for contracts.

For food suppliers, supermarkets can use this power to force down the prices they pay, as part of the intense price war. Lower prices reduce suppliers' revenue and profit margins. Extract A also shows delays in payments to suppliers, which cause cash flow problems, and suppliers being forced to pay excessive amounts for packaging and for in-store promotions, which raises their costs. As a result the number of suppliers struggling to stay in business has risen by more than 50% in a year, and almost 90% of these are small and medium-sized businesses. Some may make losses and exit the industry, causing job losses, and lower profits leave less money for investment. Suppliers may also cut costs by reducing product quality. Figure 2 suggests this abuse is widespread among some supermarkets: around 30% of suppliers report that Tesco and Morrisons fail to meet the Groceries Code of Conduct.

For consumers, lower costs for supermarkets can be passed on as lower prices; food prices have fallen by 1.7% over two years, which increases consumer surplus and real incomes, especially for low-income households. However, if suppliers cut corners to reduce costs, the quality of food may fall, and if smaller suppliers leave the market there may be less consumer choice. Pressure on suppliers may also add to waste in the supply chain.

However, the impact may be limited. Supermarkets may be reluctant to abuse their power for fear of investigation by the GCA and fines of up to 1% of annual sales revenue. Figure 2 shows that some supermarkets, such as Aldi at only about 6% and Sainsbury's at about 9%, rarely break the Code. The sector is not a pure monopsony, as there are several large

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buyers, so suppliers can sell elsewhere, and large food suppliers or farmer cooperatives may have countervailing power, creating a bilateral monopoly. Suppliers may also improve efficiency, diversify into farm shops or online sales, or integrate vertically.

Equally, consumers may not benefit if supermarkets keep the lower costs as higher profits rather than passing them on as lower prices. In the long run, if many suppliers exit, supplies may become less reliable and prices could rise. Overall, monopsony power clearly harms smaller food suppliers, while the benefit to consumers is likely to be short term and depends on how much of the cost savings are passed on.

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(c) Examine measures the government might use to restrict the monopsony power of supermarkets.

(8)

One measure is fines. The Groceries Code Adjudicator can fine supermarkets up to 1% of their annual sales revenue if they break the Groceries Code of Conduct. This raises the cost of abusing monopsony power, for example through late payment or forcing suppliers to fund promotions, so supermarkets are deterred from doing so.

A second measure is regulation, such as requiring supermarkets to pay suppliers within a standard time, or price regulation, for example a minimum price paid to suppliers, so that fair prices are paid and suppliers stay in business. The government could also block mergers, through the CMA, that would increase monopsony power, and promote new entry and competition in the supermarket sector, giving suppliers more buyers to sell to.

However, there are limits. Asymmetric information may lead the regulator to make incorrect decisions, being too lenient or too harsh on supermarkets, and the GCA may lack resources to investigate the whole sector. It is difficult to gain accurate information from suppliers, as Extract A says many are reluctant to complain for fear of losing contracts. Regulatory capture may arise, and a minimum price could create excess supply and food waste. The CMA may also allow mergers, such as Sainsbury's and Morrisons, which would increase monopsony power. Overall, fines are the most practical measure, but only if suppliers are protected so that they report abuses.

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(d) Assess the extent to which 'information gaps' (Extract B, lines 5 and 6) and 'irrational behaviour' (Extract B, line 11) are the main causes of food waste in the UK.

(10)

Information gaps occur when economic agents do not have the full information needed to make rational decisions, causing a misallocation of resources and market failure. Irrational behaviour occurs when consumers do not act to maximise their utility, for example due to habits or impulse buying.

Information gaps are a major cause of waste in the food supply chain, where 4.1 million tonnes is wasted before food reaches supermarkets. Food suppliers lack market information, as it is difficult to predict the size of harvests, which depends on the climate, pests and disease, and there are time lags in growing crops and raising livestock, so they often over-produce. Supermarkets lack information about household demand, which depends on changing tastes and fashion, population changes and the actions of competitors, so they over-order stock which then passes its use-by date. Consumers lack information on how to store food or whether food is fit to eat after its sell-by date, so they throw away food that is still safe.

Irrational behaviour explains much of the 7 million tonnes wasted by consumers, the largest share of food waste. Consumers face computation problems: their perceived demand often exceeds their actual demand, and it is hard to compare pack sizes with the amount of food they need. Habitual behaviour means people tend to buy more than they need, believing it is better to have too much than too little. They may also be influenced by other people's behaviour, and impulse buying due to advertising and special offers such as 'buy one get one free' leads to food being bought that is never eaten.

However, there is overlap between the two causes, as better information would also reduce irrational buying. Supermarkets themselves cause only 0.2 million tonnes, which appears small compared with suppliers and households. Other factors also cause waste, such as

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misleading advertising, transport and storage problems due to road congestion, and the difficulties of importing food from overseas. It may also be rational for a supplier to over-produce if the cost of running short is greater than the cost of the waste.

In addition, in the long run both causes may decline. Supermarkets are cooperating with suppliers and farmers to improve forecasts of supply and demand, giving consumers advice on storing food and using leftovers, and developing packaging that keeps food fresher for longer. Overall, information gaps are the main cause of waste in the supply chain, while irrational behaviour is the main cause of household waste. As households waste the most, irrational behaviour is probably the single largest cause, but both together explain most food waste in the UK.

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(e) Discuss the likely problems for Sainsbury's and Morrisons if the suggested merger between them goes ahead. Refer to Figure 1, Extract C and your own knowledge in your answer.

(15)

A merger between Sainsbury's and Morrisons would be a horizontal merger between two firms at the same stage of production in the same industry. Although analysts claim it would bring economies of scale and market power, there would be several problems.

Firstly, the CMA may block the merger. According to Figure 1, Sainsbury's had 16.5% and Morrisons 10.9% of the market in 2015, so the combined firm would have a 27.4% share, above the 25% legal definition of a monopoly and close to Tesco's 28.6%. The CMA would be concerned that reduced competition leads to higher prices and less choice for consumers. A long investigation would be costly, and the firms might be forced to sell stores, so a lot of money could be spent on a merger that is then blocked or watered down.

Secondly, the merged firm could suffer diseconomies of scale, so that average costs rise as the firm grows. Extract C notes considerable overlap in store locations, so stores would need to be rationalised and closed, causing redundancy costs. The co-ordination of hundreds of thousands of employees would create communication and management problems, and a new expensive IT system is likely to be required. A cultural clash between the two firms' management and staff could reduce motivation and productivity, and expected synergies may not appear.

Thirdly, the merger may not retain consumer loyalty. Sainsbury's is positioned as a higher-quality brand and Morrisons as a lower-price one, and customers may dislike changes to brands and products and switch to rivals. Most importantly, the underlying difficult market trends would remain: consumers are switching to discount stores such as Aldi and Lidl and to online shopping, and a merger does not address this, so falling market shares may continue. Greater monopsony pressure on food suppliers could also reduce the choice of suppliers and increase the risk of a GCA investigation and fines. Other giant mergers, such

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as BT's takeover of EE, have also faced integration problems.

However, there may be benefits that offset these problems. The larger firm could gain purchasing economies of scale from bulk buying, and the rationalisation of stores and staff could increase efficiency and profitability in the long run. Increased market power would help it compete with Tesco and the discounters. The CMA may permit the merger because sufficient competition now exists from online shopping and the growth of discount stores, as Extract C suggests, and mergers such as Lloyds-HBOS and BT-EE were approved.

In the short run, the merger would cause enormous upheaval, with large costs from closing overlapping stores, redundancies and a new IT system. In the long run, sufficient cost savings could make it worthwhile. Overall, the most serious problems are the risk of the CMA blocking the merger and the fact that it does not solve the shift towards discounters and online shopping, so it is uncertain whether the merger would succeed.

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(Total for Question 6 = 50 marks)

TOTAL FOR SECTION B = 50 MARKS

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SECTION C BEGINS ON THE NEXT PAGE.

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 In 2015 a report by Public Health England recommended the imposition of a 20% tax on the sale of soft drinks that contain high levels of sugar.

Evaluate the likely microeconomic effects of such a tax.

(Total for Question 7 = 25 marks)

OR

8 'Revenue maximisation is a more realistic business objective than profit maximisation for many businesses.'

To what extent do you agree with this statement? Refer to an industry of your choice in your answer.

(Total for Question 8 = 25 marks)

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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

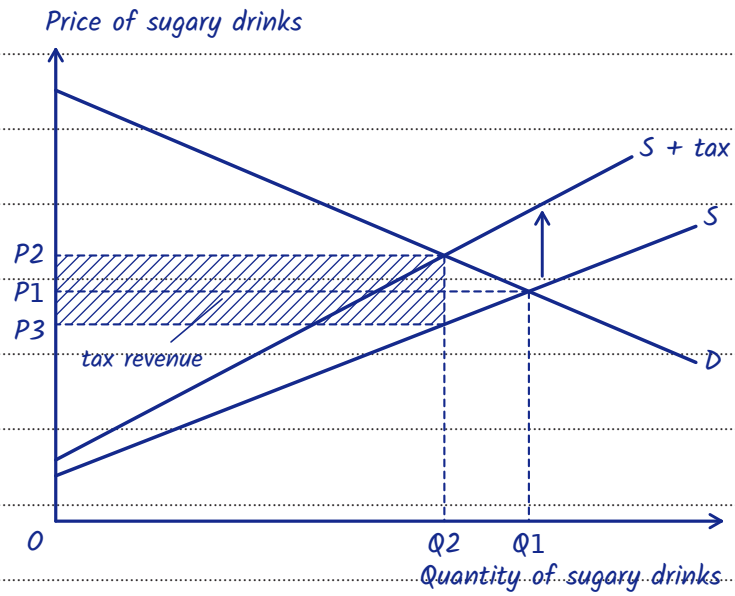
An indirect tax is a tax on expenditure on goods and services. The proposed 20% tax is an ad valorem tax, charged as a percentage of the selling price, on soft drinks with high levels of sugar. These drinks are demerit goods with negative externalities, as their consumption causes obesity, diabetes, tooth decay and heart disease, which impose costs on the NHS.

The tax increases firms' costs of production, so supply shifts from S to S + tax in my diagram. Because the tax is a percentage, the gap between the curves widens as price rises. The price consumers pay rises from P1 to P2 and the quantity of sugary drinks falls from Q1 to Q2. The shaded area is the tax revenue collected by the government. Consumer surplus falls because consumers pay more and buy less, and producer surplus falls because producers receive only P3 per unit after tax.

For consumers, the higher price should encourage them to switch to healthier substitutes such as water or low-sugar drinks, increasing demand for these. In an externality diagram, consumption moves from the market output towards the social optimum where MSC = MSB, reducing the welfare loss. Over time this should reduce obesity, diabetes and heart disease, improving the quality of life and life expectancy and raising productivity in the workforce.

For firms, the tax acts as an increase in costs, which may reduce profits. Soft drinks producers are likely to respond by investing in healthier drinks or reducing the sugar content of their products to avoid the tax, which could lead to innovation. Lower output of sugary drinks could reduce employment in this part of the industry, while employment may rise in the production of substitute products.

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The government gains tax revenue, which could be spent on healthcare services, dental care or school sport, reducing pressure on the NHS. However, the tax is regressive, as low-income households spend a larger proportion of their income on soft drinks, so it worsens income distribution.

The size of these effects depends on price elasticity of demand. If demand for sugary drinks is price inelastic, because of habit, brand loyalty or addiction to sugar, the 20% tax will cause only a small fall in consumption, so health benefits will be limited, although tax revenue will be large. If demand is price elastic, consumption falls a lot but revenue is small. The incidence of the tax also matters: where demand is inelastic, most of the burden falls on consumers, but firms such as Coca-Cola may absorb some of the tax to protect sales.

Cross elasticity of demand is also important. If consumers switch to sugary substitutes not covered by the tax, such as fruit juices, milkshakes or sweets, the health benefits will be small. The tax may be difficult to impose because soft drinks have different sugar contents, so a threshold must be set, and there could be a hidden market if people buy drinks from abroad. Price elasticity of supply matters too: firms that can easily reformulate drinks will avoid the tax.

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Time is also important. Health benefits, such as lower obesity and reduced spending on healthcare, will take many years to appear, but in the long term they could reduce government spending on healthcare and pensions for people with long-term illness.

In conclusion, a 20% tax is likely to raise prices, reduce consumption of sugary drinks, raise tax revenue and encourage firms to reformulate products. However, because demand is likely to be fairly price inelastic and substitutes exist, the impact on consumption may be small in the short run. The tax is most effective as part of a wider policy that includes education and information about sugar.

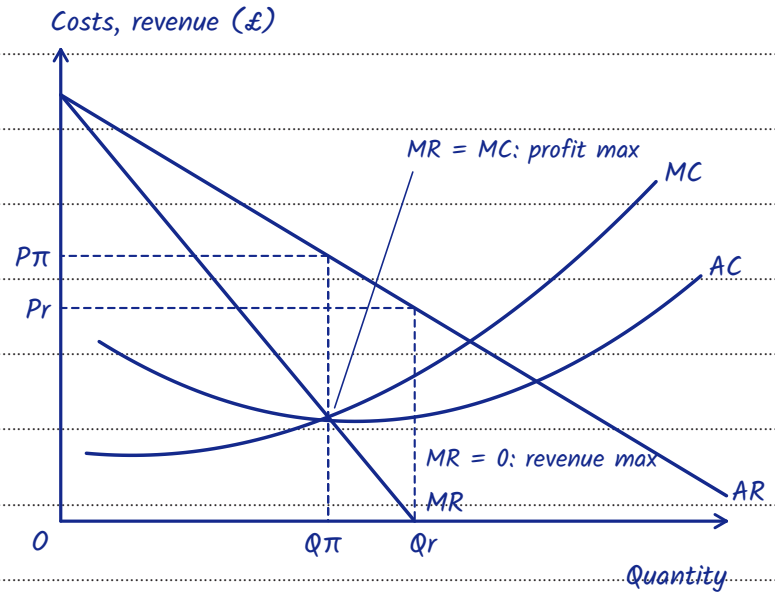
Question 8

Profit maximisation occurs at the output where marginal revenue equals marginal cost (MR = MC), shown at Qπ and price Pπ in my diagram. Revenue maximisation occurs where marginal revenue is zero (MR = 0), at the higher output Qr and lower price Pr, where total revenue is at its maximum. Using the UK supermarket industry, an oligopoly dominated by firms such as Tesco and Sainsbury's, revenue maximisation may be more realistic for many businesses.

In large firms there is often a separation of ownership from control: shareholders own the firm but directors and managers control it. This creates a principal-agent problem. Directors' salaries and bonuses are often linked to sales revenue or growth rather than profit, so they have an incentive to maximise revenue. Managers may also seek prestige and job security through a larger firm and a larger market share, rather than higher profits for shareholders.

In an oligopoly such as supermarkets, market share is seen as vital. Using game theory, if Tesco expects Asda or Aldi to cut prices, it may also cut prices to protect its market share, even if this lowers profit, which explains the recent price war. Revenue maximisation, with lower prices and lower profits, is also less likely to attract the attention of the competition

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authorities. Firms may also need cash in the short term, for example to avoid bankruptcy or fund attractive new opportunities, which makes revenue more important than profit.

However, profit maximisation may be more realistic for other businesses. Shareholders expect high share prices and dividends, and if profits fall they can vote to replace directors or sell their shares, making the firm vulnerable to a takeover. Rational business owners are expected to seek to maximise profits. In smaller firms where there is no separation of ownership from control, such as small independent grocery stores in monopolistic competition, the owner keeps the profit and so is likely to aim for profit maximisation.

Profit maximisation may also be more appropriate in a monopoly market with high barriers to entry, where there is little threat of competition, so firms can restrict output and raise price. By contrast, if the market is contestable, firms may limit prices to deter entry, choosing neither objective fully.

It also depends on the type of industry; for example, hairdressing and banking may have different goals. In reality firms find it difficult to achieve either objective, because they do not know their exact marginal revenue and marginal costs. Both objectives may require frequent price changes, which could reduce customer demand. Business owners and directors are not always rational, and conflicting objectives of different groups within firms, such as

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shareholders, managers and workers, often lead to a compromise objective such as profit satisficing, making enough profit to keep shareholders satisfied. Lack of continuity in small businesses means profit maximisation may not be sustained even if it is the objective.

In conclusion, I largely agree that revenue maximisation is more realistic for large firms in industries such as supermarkets, where ownership is separated from control and market share matters. However, for small owner-managed firms and monopolies, profit maximisation remains more realistic, and many firms in practice satisfice, so the answer depends on the size of the firm and the market structure.

TOTAL FOR SECTION C = 25 MARKS

TOTAL FOR PAPER = 100 MARKS

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