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EDEXCEL INTERNATIONAL A LEVEL ECONOMICS: QUESTIONS BY TOPIC

Consumer behaviour and demand (1.3.2)

International A Level Economics · Unit 1: Markets in action

87 questions · 307 marks · Mark schemes included
Past papers January 2019 - June 2025 · 3 specification sub-topics

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HOW TO USE THIS BOOKLET

Questions are grouped by specification sub-topic and run from the lowest to the highest mark tariff, then oldest paper first.

Click any row below to jump straight to that sub-topic or question.

On every question page, click ANSWER in the top-right corner to jump to its mark scheme; < QUESTION brings you back.

Whenever a question refers to an extract, figure or table, those exact pages are printed immediately before it ("extracts & data").

A gold bar in the left margin marks exactly where the question sits on the original page.

Diagrams, graphs, tables and data are printed exactly as they appear in the original papers.

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QUESTIONS

87 questions · 307 marks · 3 sub-topics

SUB-TOPIC 1.3.2.1

RATIONAL DECISION MAKING

Sub-topic 1.3.2.1 · 17 questions · 124 marks · lowest tariff first



- 4 In the UK mobile phone service providers have been accused of offering new consumers much cheaper deals than those offered to existing consumers. Despite this difference, many existing consumers do not change their mobile phone service provider.

Which **one** of the following explains why consumers do not change mobile phone service provider?

- ☐ A Consumers are good at computation
- ☐ B Consumers aim to maximise utility
- ☐ C Consumers exhibit habitual behaviour
- ☐ D Consumers feel valued by alternative providers

(Total for Question 4 = 1 mark)



SECTION A

Answer ALL questions in this section.

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 ☒.

- 1 Statement 1:** The consumption of single-use plastic bags in Switzerland decreased by 80% after the Government introduced a tax on them.

Statement 2: Shops should be forced to charge consumers for single-use plastic bags to reduce the amount of plastic waste.

Which **one** of the following best describes the two statements?

- ☐ **A** Both statements are positive
- ☐ **B** Statement 1 is positive and statement 2 is normative
- ☐ **C** Both statements are normative
- ☐ **D** Statement 1 is normative and statement 2 is positive

(Total for Question 1 = 1 mark)

- 2** In April 2018, the Singapore Government passed a law allowing consumers to change electricity providers. Most consumers have not switched their electricity provider despite the opportunity to save, on average, 20% on their bills.

Which **one** of the following could explain this behaviour?

- ☐ **A** Consumers are good at computation
- ☐ **B** Consumers aim to maximise their utility
- ☐ **C** Consumers are influenced by the behaviour of others
- ☐ **D** Consumers feel undervalued by their current provider

(Total for Question 2 = 1 mark)

- 3** Which **one** of the following is an example of market failure?

- ☐ **A** The free-rider problem that results in the underprovision of public goods
- ☐ **B** Higher prices create an incentive for firms to increase the production of a good
- ☐ **C** New government regulations that result in excessive administration costs
- ☐ **D** Government provision of healthcare to move towards the social optimum output

(Total for Question 3 = 1 mark)



SECTION A

Answer ALL questions in this section.

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 ☒.

1 Which **one** of the following is a role of the government in a mixed economy?

- ☐ **A** To ration resources according to the price mechanism
- ☐ **B** To charge indirect taxes on goods with external benefits
- ☐ **C** To pay subsidies to manufacturers of goods that produce external costs
- ☐ **D** To introduce a tradeable pollution permit scheme to reduce external costs

(Total for Question 1 = 1 mark)

2 In 2019 an energy consumer in the UK could save an average of £290 by changing to a different energy supplier. In 2019 over 6.4 million households changed energy supplier.

Which **one** of the following could explain this behaviour?

- ☐ **A** Consumers being valued by the original supplier
- ☐ **B** Consumers aiming to maximise utility
- ☐ **C** Consumers being poor at computation
- ☐ **D** Consumers aiming to minimise utility

(Total for Question 2 = 1 mark)



- 5 In April 2020 electricity prices increased on average by 10% in the UK. In the same month, a record number of 668 371 consumers switched to cheaper electricity suppliers.

Which **one** of the following can explain the behaviour of those consumers who switched to cheaper electricity suppliers?

- ☐ A Consumers experienced habitual behaviour
- ☐ B Consumers aimed to maximise their utility
- ☐ C Consumers had poor computational skills
- ☐ D Consumers aimed to minimise their utility

(Total for Question 5 = 1 mark)

- 6 In a particular year, a 4% rise in real incomes caused the demand for cinema tickets to increase from 250 000 to 290 000.

Which **one** of the following shows the value of income elasticity of demand?

- ☐ A -4.00
- ☐ B -0.25
- ☐ C +0.25
- ☐ D +4.00

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



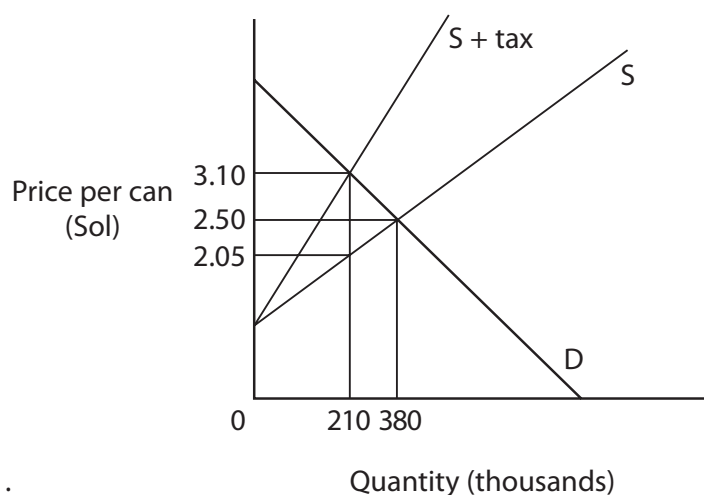
- 5 In the UK, consumers who remain loyal to their broadband provider pay, on average, an extra £113 per year.

Which **one** of the following is an example of inertia in the broadband market?

- ☐ A Consumers remain with their current provider because they cannot calculate the possible savings
- ☐ B Consumers remain with their current provider because they do not feel valued
- ☐ C Consumers remain with their current provider because they are influenced by the behaviour of their friends and family
- ☐ D Consumers remain with their current provider because they believe that the effort required to switch will be too great

(Total for Question 5 = 1 mark)

- 6 The diagram shows the market for a sugar-sweetened drink in Peru. In 2018 Peru's Government imposed an ad valorem tax on sugar-sweetened drinks.



Which **one** of the following shows the value of the consumer incidence of the tax?

- ☐ A Sol 94 500
- ☐ B Sol 126 000
- ☐ C Sol 220 500
- ☐ D Sol 228 000

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



SECTION A**Answer ALL questions in this section.**

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 ☒.

1 Which **one** of the following is a role of financial markets?

- ☐ **A** To collect tax revenues
- ☐ **B** To enable consumers to minimise their utility
- ☐ **C** To make funds available for individuals and businesses
- ☐ **D** To provide public goods

(Total for Question 1 = 1 mark)

2 In the UK, new consumers paid an average of £130 for home insurance in 2020. Consumers who had remained with the same insurance company since 2015 paid £238 for the same annual home insurance cover. Despite this, many consumers stay loyal to their insurance company.

Which **one** of the following is the most likely reason why consumers stay loyal to their insurance company?

- ☐ **A** Consumers feel undervalued
- ☐ **B** Consumers have good computational skills
- ☐ **C** The free-rider problem
- ☐ **D** Habitual behaviour

(Total for Question 2 = 1 mark)



- 4 In South Africa demand for electric blankets increased by 250% in 2022.

Which of the following combinations is the most likely impact on the market for electric blankets?

	Consumer surplus	Price
☐ A	Decrease	Decrease
☐ B	Decrease	Increase
☐ C	Increase	Increase
☐ D	Increase	Decrease

(Total for Question 4 = 1 mark)

- 5 In July 2022 Amazon, the online retailer, announced that it would increase the price of its Amazon Prime subscription service from £79 to £95 per year. This resulted in 590 000 UK consumers cancelling their Amazon Prime subscriptions.

Which **one** of the following is the most likely explanation of this behaviour?

- ☐ A These consumers experienced inertia
- ☐ B These consumers experienced habitual behaviour
- ☐ C These consumers aimed to maximise their utility
- ☐ D These consumers aimed to minimise their utility

(Total for Question 5 = 1 mark)



- 3 Procter & Gamble, a US-based international business, sells beauty, grooming, personal healthcare and fabric care goods. In 2022 it increased its prices, on average, by 10%. The quantity of items sold decreased by 6%.

Which **one** of the following explains why consumers bought fewer Procter & Gamble products?

- ☐ A Consumers aimed to maximise utility
- ☐ B Consumers aimed to minimise utility
- ☐ C Consumers suffered from habitual behaviour
- ☐ D Consumers had poor computational skills

(Total for Question 3 = 1 mark)



- 9 In Canada, two of the largest internet providers, Bell and Rogers, increased prices in 2018. Consumers could save 25% by switching to smaller internet providers. However, most consumers remained with their more expensive internet providers.

Explain **one** reason why many consumers behave in this way and remain with their current internet providers.

(Total for Question 9 = 4 marks)



SECTION C

Study Figure 1 and Extracts A and B in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'renewable resource' (Extract B, line 19). (2)
- (b) Explain what is meant by the term 'rational decision'. Refer to Extract B in your answer. (4)
- (c) Analyse why the global price of oil fell in the first quarter of 2020. Refer to Figure 1 and Extract A in your answer.
Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to Extract A, examine **two** likely effects of the high level of indirect taxation on diesel and petrol in India. (8)
- (e) With reference to Extract B, discuss the likely microeconomic effects of the subsidy paid to the manufacturers of electric cars.
Illustrate your answer with an appropriate diagram. (14)



Sources for use with Section C.

The markets for oil and electric cars

Figure 1 Global price of oil per barrel, US\$ 2016–2020



Extract A Oil price fall

The global price of oil fell in the first quarter of 2020 after governments restricted the movement of people. Many offices and factories closed, causing a significant reduction in production. With less transport and energy needed, the demand for oil decreased. Oil producing countries, led by Saudi Arabia, planned to reduce production in order to increase the price of oil. However, Russia increased its production, so Saudi Arabia responded by increasing its production.

5

In India the significant fall in the global oil price only resulted in a 7% decrease in the price of petrol and diesel. One reason for this is the high level of indirect taxation on petrol and diesel in the country. In India almost half the price of petrol and diesel is in the form of indirect taxation.

10



Extract B Canadian electric car subsidy

Road transportation accounts for 20% of Canada's carbon emissions. The Canadian Government aims to remove all petrol and diesel cars by 2040. However, in 2019 only 2% of cars were electric.

In 2019 the government introduced a \$5 000 subsidy to encourage electric car sales. This subsidy is paid to the manufacturers of electric cars. This will apply to electric cars with a price below \$45 000. There are just nine electric car models available for under \$45 000. 5

Indirect taxes are added to the price of a petrol Volkswagen (VW) Golf. With the subsidy it would be cheaper to buy the electric VW Golf. The rational decision would be to purchase the cheaper electric VW Golf. 10

A problem is that there are only 5 800 charging points that are accessible to Canada's 37 million population. By comparison, in Norway there are 176 000 charging points for the population of just 5 million. The Canadian Government is planning to spend \$130 million to increase the number of charging stations.

Electric cars have zero carbon emissions when being driven. However, to produce an electric car battery requires twice as much energy compared with the production of a petrol or diesel car battery. In addition, the electricity used to power the electric vehicle creates emissions if the electricity is generated using fossil fuels like coal. In Canada 60% of electricity is generated using hydroelectricity, a renewable resource, whereas in Norway it is 96%. 15
20

12 (a) Define the term 'renewable resource' (Extract B, line 19).

(2)

(b) Explain what is meant by the term 'rational decision'. Refer to Extract B in your answer.

(4)



-



- 8** Unilever, a manufacturer of food, personal care and home care products, experienced an increase in total costs of €4.4 billion in 2022. As a result, the company raised its prices, on average, by 13.2% in Europe. Consequently, there was a 6.8% decrease in the number of items sold by Unilever because consumers switched to cheaper alternatives.

With reference to this information, explain what is meant by the term 'rational decision making'.

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

(Total for Question 8 = 4 marks)



SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

- 13** In 2016 it was reported that 50% of gas and electricity consumers in the UK have never switched energy suppliers. It is claimed that those consumers who did switch suppliers saved up to £200 each per year.

Evaluate the reasons why many consumers do not switch energy suppliers.

(Total for Question 13 = 20 marks)

OR

- 14** In 2017 floods in Bangladesh resulted in 8 million people having to move from their homes. 100 000 houses were destroyed and many crops were lost. The Institute of Water and Flood Management claim that there had been an under-investment in flood defences.

Evaluate reasons for this under-investment in flood defences. Make reference to public goods in your answer.

(Total for Question 14 = 20 marks)



SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

- 13** In the Netherlands 68% of the price consumers pay for a litre of petrol is indirect tax. In neighbouring Germany indirect tax represents just 59%.

Evaluate the impact of these indirect taxes charged on petrol.

(Total for Question 13 = 20 marks)

OR

- 14** In the UK, in 2018, 10 million consumers travelling abroad did not take out travel insurance. This is despite 30% of consumers with travel insurance having to make a claim and the average medical bill costing £5620.

Evaluate reasons for the underconsumption of travel insurance.

(Total for Question 14 = 20 marks)



SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

- 13** In Australia a consumer of electricity would save, on average, AUS\$1 000 by switching from the most expensive to the least expensive electricity supplier. However, 30% of consumers do not switch because of the effort required and 22% do not switch because they lack the necessary information.

Evaluate possible reasons why consumers may behave irrationally.

(Total for Question 13 = 20 marks)

OR

- 14** Between Q4 2016 and Q4 2019 the global price of gold increased from \$1 275 to \$1 481 per ounce. Over the same period, the global supply of gold increased from 888.8 tonnes to 889.5 tonnes. Only 10 countries mine 62% of global output.

Evaluate reasons why the supply of gold is price inelastic.

(Total for Question 14 = 20 marks)



SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

- 13** In 2007 Ireland's Government spending as a percentage of GDP was 35.9% and by 2019 it had fallen to 25.1%.

Evaluate the possible benefits of an economy moving closer to being a 'free market economy'.

(Total for Question 13 = 20 marks)

OR

- 14** In Australia 50% of consumers are still with the bank they first joined. Banking with one of the 4 largest banks is costing consumers about AUD1 500 per year. In the UK consumers loyal to their broadband supplier pay 12% more than those who switch to better deals.

Evaluate ways that would encourage and enable consumers to make rational decisions.

(Total for Question 14 = 20 marks)



SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

13 In 2022 consumers in the UK who did not switch suppliers for different services at the end of their contracts were paying a total of £1.3 billion more than those consumers who chose to switch suppliers. It is estimated that this applied to:

- 630 000 consumers with mortgages
- 1.5 million consumers with mobile phone contracts
- 7 million broadband consumers.

Evaluate possible reasons why consumers did not switch suppliers for these services.

(Total for Question 13 = 20 marks)

OR

14 The division of labour applies to many types of production and occupation, including:

- in the textile industry, workers are responsible for specific parts of the production process
- in healthcare, workers have different roles including doctors, nurses, cleaners and administrators.

Evaluate the advantages of the division of labour for businesses **and** workers. Refer to an industry of your choice in your answer.

(Total for Question 14 = 20 marks)



SUB-TOPIC 1.3.2.2

THE DEMAND CURVE

Sub-topic 1.3.2.2 · 17 questions · 57 marks · lowest tariff first



SECTION A**Answer ALL questions in this section.**

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 ☒.

1 Which **one** of the following will cause a movement along the demand curve in the market for rice?

- ☐ **A** An increase in the global population
- ☐ **B** An increase in real incomes
- ☐ **C** A decrease in the price of noodles
- ☐ **D** A decrease in the price of rice

(Total for Question 1 = 1 mark)

2 Which **one** of the following is an advantage of a free market economy?

- ☐ **A** The profit motive gives firms the incentive to be more efficient
- ☐ **B** Public goods may be under-provided by the price mechanism
- ☐ **C** Goods may be over-provided compared with the social optimum level of output
- ☐ **D** Government intervention leads to the correction of market failure

(Total for Question 2 = 1 mark)

3 Which **one** of the following is an example of market failure?

- ☐ **A** Government provision of flood defences that is greater than the social optimum output
- ☐ **B** Doctors prescribe too many medicines because the cost is covered by health insurance
- ☐ **C** Lower prices create an incentive for firms to switch production to more profitable activities
- ☐ **D** Unintended consequences that follow the introduction of an indirect tax

(Total for Question 3 = 1 mark)



4 The table shows the total utility obtained as a consumer drinks milk.

Glasses of milk	Total utility
1	2
2	5
3	8
4	10
5	9
6	4

Which **one** of the following can be deduced from the table?

- ☐ A Utility is maximised when three glasses of milk are consumed
- ☐ B Diminishing marginal utility sets in with the consumption of the fourth glass of milk
- ☐ C Diminishing marginal utility sets in with the consumption of the fifth glass of milk
- ☐ D Utility is maximised when six glasses of milk are consumed

(Total for Question 4 = 1 mark)

- 6 The table shows the total utility received by a consumer from consuming glasses of fruit juice.

Glasses of fruit juice	Total utility
1	2
2	5
3	8
4	9
5	7
6	3

Which **one** of the following can be deduced from the table?

- ☐ A Utility is maximised when three glasses of fruit juice are consumed
- ☐ B Diminishing marginal utility sets in with the consumption of the fourth glass of fruit juice
- ☐ C Diminishing marginal utility sets in with the consumption of the fifth glass of fruit juice
- ☐ D Utility is maximised when six glasses of fruit juice are consumed

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



SECTION A

Answer ALL questions in this section.

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 ☒.

- 1 Which **one** of the following statements is a consequence of diminishing marginal utility?

- ☐ A Total utility will rise at a faster rate as more of a product is consumed
- ☐ B The supply curve for a product will slope upwards
- ☐ C The demand curve for a product will slope downwards
- ☐ D Total utility will rise at a constant rate as more of a product is consumed

(Total for Question 1 = 1 mark)

- 2 The table shows the changes in electricity generation from two sources in selected countries between 2019 and 2020.

	Coal	Solar
Italy	–31%	+12%
India	–20%	+6%
South Korea	–11%	+26%
USA	–40%	+45%

Which **one** of the following can be deduced from the table?

- ☐ A The largest percentage decline in the use of the non-renewable resource for electricity generation was in South Korea
- ☐ B The largest percentage increase in the use of the renewable resource for electricity generation was in the USA
- ☐ C In all countries the use of the non-renewable resource for electricity generation increased
- ☐ D In all countries the use of the renewable resource for electricity generation decreased

(Total for Question 2 = 1 mark)



5 In the USA the average price of an all-you-can-eat buffet is \$20.

The table shows the marginal utility gained from consuming each plate of food from the buffet for a typical consumer.

Plate	Marginal utility
1st	6
2nd	4
3rd	2
4th	1
5th	-2

At which **one** of the following would total utility be maximised?

- ☐ A 2nd plate
- ☐ B 3rd plate
- ☐ C 4th plate
- ☐ D 5th plate

(Total for Question 5 = 1 mark)



SECTION C

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 12.

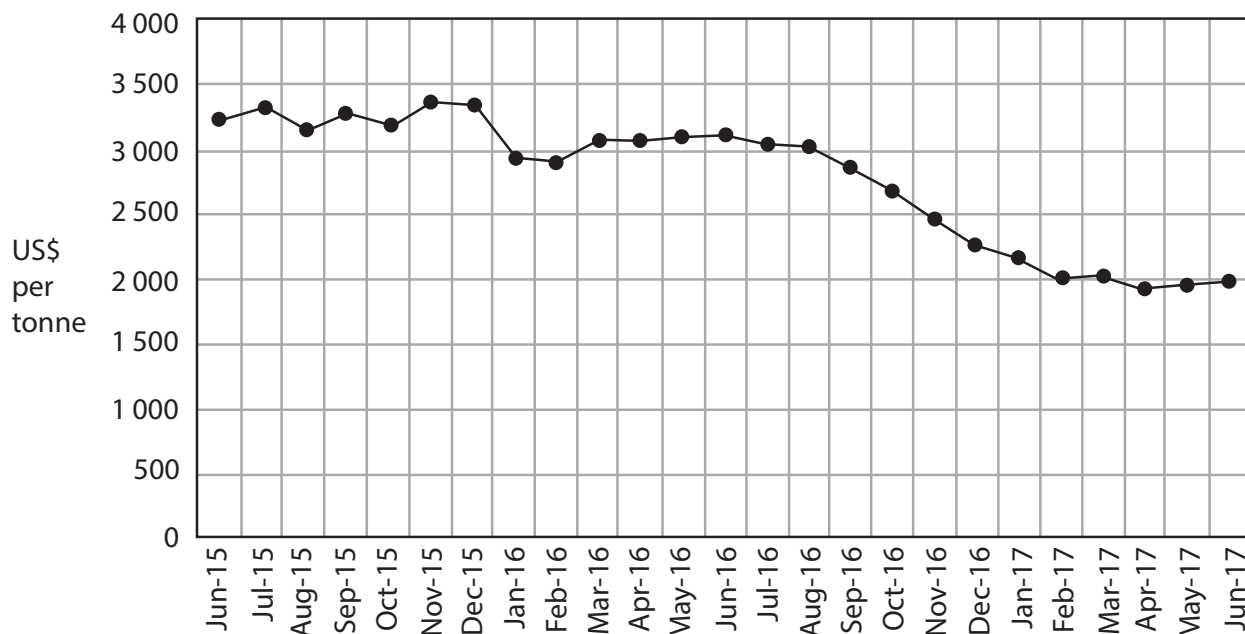
Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'substitutes' (Extract A, line 12). (2)
- (b) With reference to Extract A, explain **one** factor that is likely to influence the price elasticity of supply for cocoa beans. (4)
- (c) With reference to Figure 1 and Extract A, analyse **one** reason why the price of cocoa beans 'fell below \$2 000 per tonne' (Extract A, line 8) in April 2017. Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to Extract B, examine the external costs associated with the production of cocoa beans. (8)
- (e) With reference to Extract C, discuss the likely effects of the reduction in the minimum (guaranteed) price for cocoa. Illustrate your answer with an appropriate diagram. (14)

Sources for use with Section C.

The market for cocoa

Figure 1 - Price of cocoa beans, US\$ per tonne, June 2015 to June 2017



Extract A - The price of cocoa falls

Cocoa bean prices were high during 2015 and much of 2016 reflecting increased demand and decreased supply. For example, in 2016, consumption of cocoa exceeded production by 197 000 tonnes.

However, in 2017, production in the Côte d'Ivoire rose from 1.45 million tonnes to 1.93 million tonnes. The Côte d'Ivoire's output increased after many new cocoa trees matured. Good cocoa harvests during 2017 led to stocks being 27.3% higher than in 2016. In April 2017, cocoa bean prices fell below \$2 000 per tonne.

5

Cocoa trees take four to five years to mature and produce cocoa pods. Cocoa trees grow best in regions near the equator. This means very few countries can successfully grow the crop.

10

In contrast, the prices of substitutes for cocoa such as tea and coffee increased during 2017.

Extract B – Cocoa production can damage the environment

Poor management of land used to produce cocoa means rainforest has to be destroyed so new plantations can be started. Soil erosion, caused by growing too much cocoa, makes the land less fertile and reduces crop yield. To increase production, some farmers have started to use fertilisers which cause river pollution.

5

Farmers should be removing old cocoa trees and allowing the land to recover. Many cannot afford to do this because they need to earn revenue until the replacement trees grow. The continued use of older trees results in lower yields. Consequently farmers seek new land by destroying rainforests. In Indonesia the amount of land that is rainforest has fallen from 30% to closer to 15%. This has a significant negative impact on biodiversity.

10

However, the Rainforest Alliance trains cocoa farmers on how to manage their trees to avoid environmental damage. Between 2009 to 2015 the amount of cocoa produced by Rainforest Alliance farms increased from 2% to 16%.

Extract C – Minimum price scheme in the Côte d'Ivoire

The Côte d'Ivoire Government sets a minimum (guaranteed) price for cocoa. In 2017, it reduced the minimum price by 36% to cut government spending and reduce cocoa stocks. However, some farmers still sell cocoa at prices below the minimum price because they can receive payments more quickly than from the Government.

5



12 (a) Define the term 'substitutes' (Extract A, line 12).

(2)

(b) With reference to Extract A, explain **one** factor that is likely to influence the price elasticity of supply for cocoa beans.

(4)

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SECTION C

Study Figures 1 and 2 and Extracts A, B and C in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'substitutes' (Extract A, line 8). (2)
- (b) Explain what is meant by the term 'inelastic supply'. Refer to Figure 1 and Extract A in your answer. (4)
- (c) Analyse why the price of vanilla increased significantly between 2014 and 2018. Refer to Figure 2 and Extract A in your answer. (6)
- Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to Extract C, examine two microeconomic effects of Finland's decision to remove the sugar tax. (8)
- (e) Discuss reasons why the 'quantity of education is below the social optimum level' (Extract B, lines 2 and 3). Refer to external benefits in your answer. (14)
- Illustrate your answer with an appropriate diagram. (14)

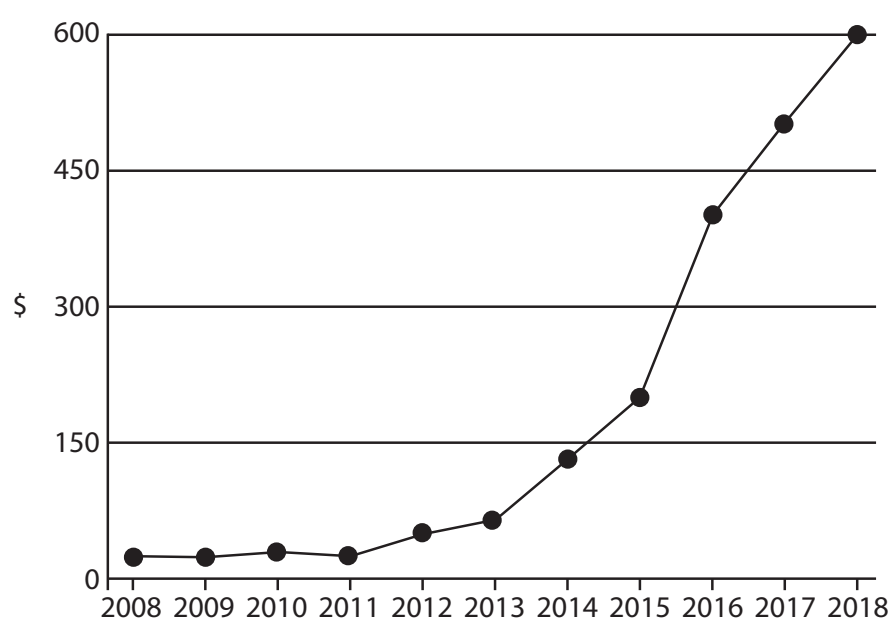
Sources for use with Section C.

The markets for vanilla, education and sugar

Figure 1 Estimated price elasticity of supply for vanilla in Madagascar and Indonesia

	Madagascar	Indonesia
Price elasticity of supply	0.48	0.52

Figure 2 US\$ price of vanilla per kilogram, 2008-2018



Extract A Vanilla price increases

Madagascar grows 80% of the world's vanilla. Few other countries have the climate to be able to grow the crop. Between 2008 and 2011 the price was so low that some vanilla growers stopped production and grew other crops instead. However, the price of vanilla increased significantly between 2014 and 2018.

5

In 2017 a cyclone in Madagascar destroyed a large quantity of the vanilla crop. As a result some farmers will not see their vanilla crops recover fully until 2020.

There are artificial substitutes for vanilla such as vanillin. However, in recent years, consumers have shown an increased preference for natural vanilla. Vanilla is a key ingredient used in ice cream, sweets, chocolate and in cosmetic products. The demand for all of these products has increased rapidly in recent years.

10

The high price attracted farmers in other countries, such as Uganda, to start growing vanilla. However, it takes three years for the plantations to mature and produce vanilla crops.

Extract B Lack of education in Madagascar

Adults in Madagascar have typically spent only 4.4 years at school. This quantity of education is below the social optimum level.

In 2012 it was estimated that 20 000 children aged 12 to 17 years old worked in the production of vanilla. This was 32% of the workforce employed in this industry. Many families need their children to work to earn an additional income. They cannot afford to lose this income by sending their children to school. Following the cyclone the price of food in Madagascar rose significantly. This increased the need for children to work.

5

Many primary schools are in a poor condition and are overcrowded. Teachers have limited or no training. Many schools are destroyed by the annual cyclones and public funds for education have been reduced.

10

Extract C Sugar tax removed in Finland

In 2011 the Government of Finland introduced an indirect tax known as a sugar tax on sweets, chocolate, ice cream and fizzy drinks. This was charged at €0.95 per kilogram or €0.11 per litre. The tax raised revenue for the government and decreased consumption of these products by approximately 5%.

5

In 2017 Finland removed the sugar tax. It had been criticised as being unfair. Manufacturers of biscuits and cakes had been unaffected by the tax giving them a competitive advantage over sweet and chocolate manufacturers. The tax revenue that would have been raised was estimated to be €109 million per year.

12 (a) Define the term 'substitutes' (Extract A, line 8).

(2)

(b) Explain what is meant by the term 'inelastic supply'. Refer to Figure 1 and Extract A in your answer.

(4)

[illegible]

SECTION C

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 12.

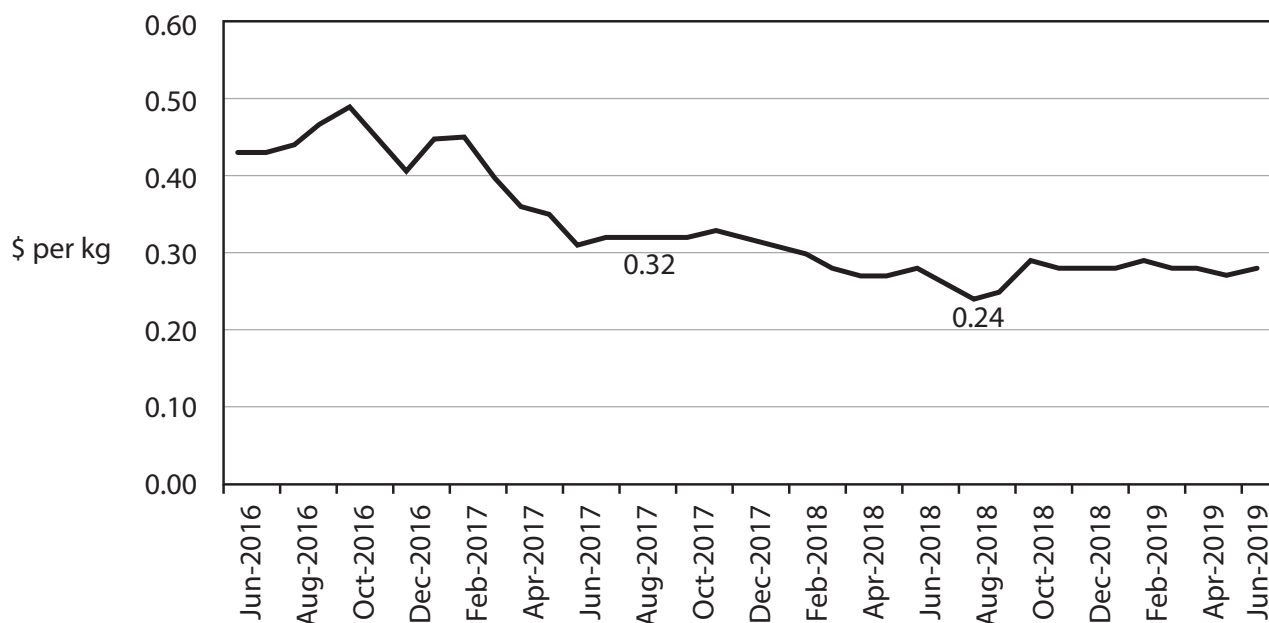
Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'substitutes' (Extract A, line 9). (2)
- (b) With reference to Extract A, explain **one** factor that is likely to influence the price elasticity of supply for sugar. (4)
- (c) With reference to Figure 1 and Extract A, analyse **two** reasons why the world price of sugar fell between August 2017 and August 2018. (6)
- Illustrate your answer with a supply and demand diagram.
- (d) With reference to Extract B, examine **two** possible effects of information gaps on the consumption of sugar. (8)
- (e) With reference to Extract C, discuss the likely effects of the increase in the subsidy for sugar production. (14)
- Illustrate your answer with an appropriate diagram.

Sources for use with Section C.

The market for sugar

Figure 1 World price of sugar, US\$ per kg, June 2016 – June 2019



Extract A Global production of sugar

Between August 2017 and August 2018 the world price of sugar fell as a result of favourable weather leading to good harvests. In 2018, India, the world's second largest sugar producer and Thailand, the world's fourth largest sugar producer, had record levels of production. In 2018 global production was 11% higher than in 2017. In 2018 world production was so high that there was a surplus of 17 million tonnes. This led to large quantities of sugar being held in storage.

5

In recent years, consumption of sugar has fallen because of increasing health concerns. There is also competition from substitutes such as artificial sweeteners. In the USA, Europe, China and Australia sugar consumption has fallen or remained unchanged.

10

Sugar is grown in 119 countries. It takes sugar cane one year to mature in countries with warm temperatures and two years in cooler countries.



Extract B Overconsumption of sugar

In the USA the recommended maximum amount of sugar consumption is 50 grams per day. In the USA average consumption is 73 grams per day. The human body can comfortably process 25 grams a day. However, any sugar consumption in excess of 25 grams per day will normally be processed into body fat. This is contributing to obesity. 5

One study found that a high sugar diet increased the risk of heart disease by 38%. Another study found that excess sugar consumption caused an increased risk of many types of cancer. A further study found that men who consumed 67 grams or more of sugar per day were 23% more likely to experience depression than men who consumed less than 40 grams per day. 10

Extract C Indian subsidy for sugar production

The Indian Government subsidises sugar growers that export sugar. Before the subsidy, exports were 620 000 tonnes per year. After the subsidy was introduced exports rose to 3.3 million tonnes per year, helping to make India the world's second largest producer of sugar. The size of the subsidy will increase from 55 rupees a tonne in 2018 to 138 rupees a tonne in 2019. This increase in subsidy is expected to increase exports to over seven million tonnes per year. Production in India was 20.3 million tonnes in 2017 and increased to 33.0 million tonnes in 2019. 5

The Governments' of Brazil and Australia have complained to the World Trade Organization that these subsidies give Indian producers an unfair advantage. They argue that these subsidies contribute to lower world prices, making the market unprofitable for many growers outside India. 10

(2)

(4)

SECTION C

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 12.

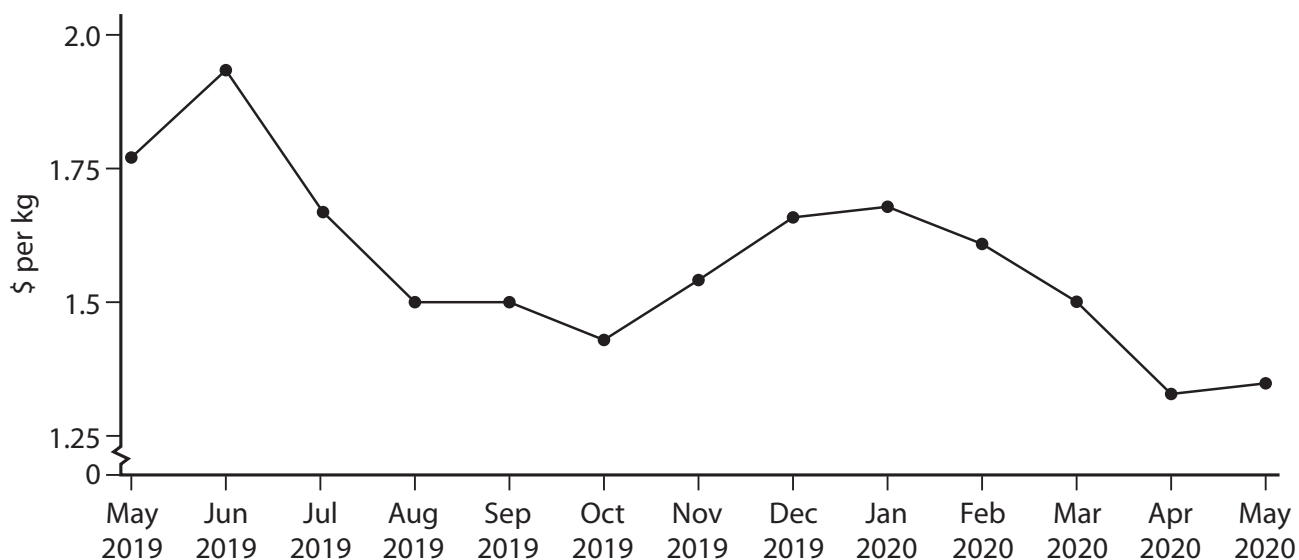
Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'complementary goods' (Extract A, line 8). (2)
- (b) With reference to Figure 1 and Extract A, analyse why 'between January and May 2020 the world price of rubber fell from \$1.67 to \$1.35 per kg'.
Illustrate your answer with a supply and demand diagram. (6)
- (c) With reference to the first paragraph of Extract B, explain what is meant by 'the supply of rubber is price inelastic'. (4)
- (d) Examine the effect on producer surplus of the change in market conditions for rubber gloves as described in Extract C. Include a diagram in your answer. (8)
- (e) With reference to Extract B, discuss the external costs associated with tyre production and consumption. (14)

Sources for use with Section C.

The markets for rubber, tyres (tires) and rubber gloves

Figure 1 World price of rubber, US\$ per kg, May 2019–May 2020



Extract A Rubber price falls as car and tyre production fall

Between January and May 2020 the world price of rubber fell from \$1.67 to \$1.35 per kg. This was caused by a significant decrease in demand for tyres that are made from rubber. Tyre production uses 75% of the world's natural rubber.

Over the same period, tyre sales fell by 35% in Europe, 42% in North America and by 33% in South America. There was a large decrease in car production in all of these regions as a result of the temporary closure of car factories. Car usage also fell, resulting in fewer tyres needing to be replaced. Cars and tyres are complementary goods.

5



Extract B Rubber production and pollution from tyres

Rubber trees grow best in a climate where there is heavy rainfall and temperatures between 20°C and 35°C. Farmers in Thailand, Indonesia, China and West Africa provide 85% of the world's natural rubber supply. Rubber trees take 6 years to produce their first crop. Consequently, the supply of rubber is price inelastic.

5

Between 2000 and 2019 the demand for rubber tyres increased resulting in deforestation. 3 million hectares of forests in the Mekong region of South East Asia were lost to make space for rubber plantations.

A research study into car emissions found that tyres emitted 1 000 times more PM2.5 particles than emissions from exhaust fumes. This study was based on testing one fully loaded car and one type of road surface.

10

Long-term exposure to PM2.5 results in:

- respiratory diseases and reduced lung function in children and adults
- increased risk of lung cancer
- cardiovascular disease affecting the heart and causing strokes.

15

Further problems are caused when tyres are sent to landfill. Tyres contain chemicals and heavy metals that are released into the environment over time. These cause cancer and genetic mutations.

Tyre recycling has helped to reduce the number of tyres in landfill from one billion in 1991 to 60 million in 2018. In the USA 43% of the recycled tyres are used to produce energy. These recycled tyres produce 25% more energy than coal. The ash from the tyres is less polluting than burning coal.

20

Extract C Profits of manufacturers of rubber gloves

Rapidly rising demand for rubber gloves across the world enabled the Malaysian rubber glove manufacturer, Top Glove, to achieve a 366% increase in profits in the second quarter of 2020. This was caused by a substantial increase in sales of rubber gloves to the healthcare sector.

5

12 (a) Define the term 'complementary goods' (Extract A, line 8).

(2)

[illegible]

(b) With reference to Figure 1 and Extract A, analyse why 'Between January and May 2020 the world price of rubber fell from \$1.67 to \$1.35 per kg'.

Illustrate your answer with a supply and demand diagram.

(6)

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- 8** Many hotels offer an all-you-can-eat breakfast buffet. 80% of hotel guests go to the breakfast buffet three times for food but only 10% visit five times.

With reference to hotel breakfasts, explain why the above information illustrates 'diminishing marginal utility'.

(Total for Question 8 = 4 marks)



SECTION B

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 7. Write your answers in the space provided on the following pages.

7 In 2018 total new car sales in China were 23.7 million.

- (a) With reference to Figure 2, calculate the 4-firm concentration ratio for the car market in China in 2018. You are advised to show your working.

(2)

- (b) With reference to the third paragraph of Extract B, explain what is meant by a 'takeover'.

(4)

- (c) With reference to Figure 1 and Extract A, analyse **two** reasons for the fall in car sales in China since 2017.

(6)

- (d) With reference to Extract A, examine the likely effects of the Chinese Government's subsidy on the profits of an electric car manufacturer.

Illustrate your answer with an appropriate diagram.

(8)

- (e) With reference to Extract A and Extract B and your own knowledge, discuss the types of non-price competition that could be used by car manufacturers to increase the sales of cars.

(14)



Sources for use with Section B.

The Chinese car market

Figure 1 New car sales in China, 2009–2019 (millions)

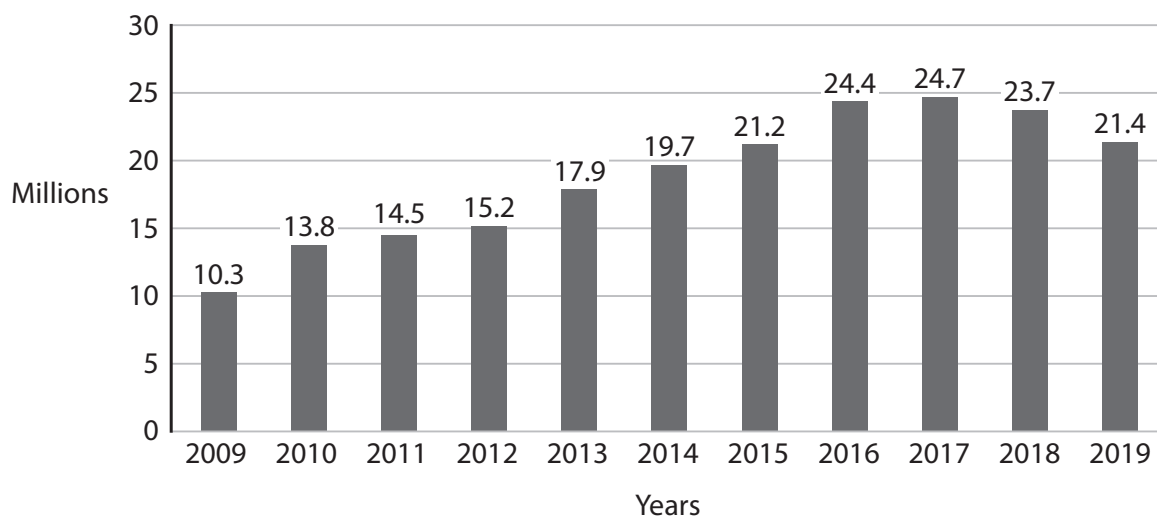
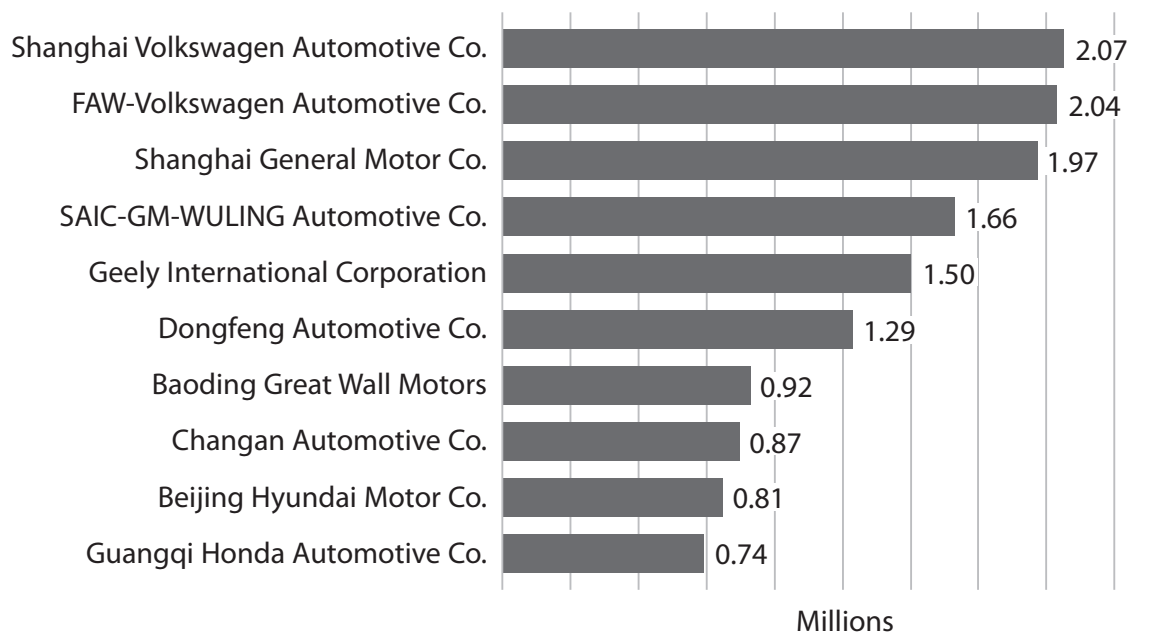


Figure 2 Major car manufacturers' sales in China, 2018 (millions)



Extract A Developments in the Chinese car market

In 2019 more cars were sold in China than in any other country. In that year, the Chinese car market accounted for 30% of total global car sales. Chinese manufacturers produced 42% of the cars sold in China in 2019. In 2018 23.7 million cars were sold in China, compared to only 4.4 million in Japan, 15.6 million in Europe and 17.2 million in the United States. 5

In 2018 car sales in China declined by 4%, the first reduction in 20 years. One reason for this was the slowdown in China's rate of economic growth. In 2009 real GDP rose by 9.4%, but in 2018 the rate of growth had fallen to 6.6%.

The decline in sales is also because of the increased availability of substitutes. Chinese car buyers are increasingly looking for low-cost alternatives to buying new cars. Many consumers are switching from car ownership to using car-hailing taxi apps instead. There are now over 100 different car-hailing platforms in China with over 330 million consumers. The price of these services is very low and the app makes them very easy to order. China is becoming the largest car-hailing taxi market in the world. 10
15

Growth in the electric and hybrid car market is promising, as younger consumers demand more environmentally friendly transportation. The Chinese Government is heavily subsidising electric cars, offering up to 90 000 yuan per car, in an attempt to encourage more production. The aims of the subsidies are to reduce air pollution to meet carbon performance targets and to improve the quality of electric cars. The Government is also increasing the number of public charging points available for electric cars. Local governments incentivise consumers to purchase electric cars by offering free licence plates and free parking. 20

Extract B Competition in the Chinese car market

A connected-car is one that has its own internet connection. This allows the car to share internet access and data with other devices inside and outside the car. The global connected-car market is expected to grow by 270% by 2022. Market research by Kantar TNS suggested 79% of the Chinese consumers planned to buy a connected-car in the future. 5

In 2018 BMW, a leading German luxury car manufacturer, started a joint venture with Alibaba Group, a Chinese multinational firm specialising in technology. Their aim was to develop a range of luxury connected-cars. Drivers are able to shop online, watch movies, listen to music and book appointments in their new BMW. Quality and innovation are very important in the Chinese car market. Consumers are very influenced by reputation and social media when choosing a car to purchase. 10

Chinese car manufacturer Geely is the main producer of connected-cars. Geely has a 6.3% market share of the total Chinese car market. The business produces highly connected-cars with ultra-modern design. The company targets its cars at younger consumers. The company is trying to expand internationally and recently bought the majority share in Lotus, a British sports car brand. The takeover should help Geely increase its sales in Europe. However, its main objective is to grow its market share in China. 15

(6)





SECTION B

Study Figures 1 and 2 and Extracts A, B and C in the Source Booklet before answering Question 7.

Write your answers in the space provided on the following pages.

- 7** (a) With reference to Figure 1, calculate the percentage point change in the four-firm concentration ratio between 2020 and 2021. (2)
- (b) With reference to Extract A, analyse **two** reasons why India has become the world's second largest smartphone market. (6)
- (c) With reference to Extract B, explain what is meant by 'economies of scale'. (4)
- (d) With reference to Figure 2 and Extract B, examine the likely impact on the profits of Samsung of opening a smartphone factory in India.
Use an appropriate diagram in your answer. (8)
- (e) With reference to Extract C, Figure 2 and your own knowledge, discuss the benefits of non-price competition for consumers and businesses in the Indian smartphone industry. (14)

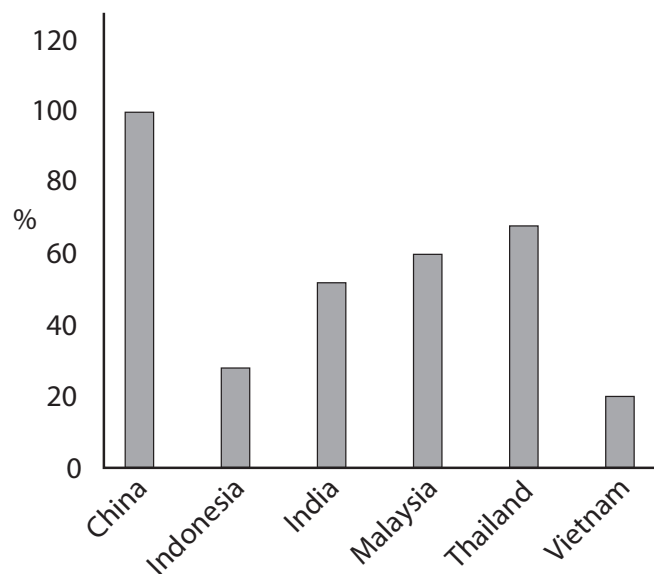
Sources for use with Section B

The Indian mobile phone market

Figure 1 Market shares of mobile phone companies in India, 2020 and 2021

	2020	2021
Xiaomi	26%	21%
realme	11%	17%
Samsung	20%	16%
vivo	15%	13%
OPPO	10%	9%
Others	18%	24%

Figure 2 Hourly labour cost for selected countries as a percentage of China's hourly labour costs, September 2018



Extract A The Indian smartphone market

In October 2021 India's population was 1.38 billion, the second largest in the world after China. India's per capita real income increased from US\$ 1 000 in 2015 to US\$ 1 301 in 2020. It is predicted that incomes will continue to rise steadily over the next few years. India's large population and increasing disposable incomes have made it the world's second largest smartphone market. Over half the population of India owns a smartphone. It is expected that the market will grow from US\$ 25.1 billion in 2018–19 to US\$ 80 billion in 2025–26.

5

Extract B The production of smartphones in India

The manufacture of smartphones in India has increased significantly, making it the second largest manufacturing country after China. If production continues to rise at its current rate, India will soon become the global leader in smartphone production.

5

The Indian Government has been encouraging foreign direct investment (FDI) through the "Make in India" programme. This scheme offers tax relief for any companies manufacturing in India. The scheme also introduced a 12.5% tax on any imported phone components needed in the manufacturing process. This has caused an increase in the local production of handsets and phone components. Also, it is estimated that wages for skilled workers are 15% less in India than in China. As a result, Samsung Electronics, a South Korean company, opened the world's largest smartphone factory in India. The company will benefit from economies of scale and from reduced transport costs when selling its products in India, the Middle East and Africa. Foxconn, a Taiwanese company, moved its production of the new Apple iPhone from China to India to reduce long-run average costs.

10

15

There are several challenges facing smartphone producers in India. For example, the supply of components is insufficient to meet the level of demand. This forced some businesses to import more expensive and heavily taxed components from China. In addition, the power supply is not always reliable, reducing output and efficiency. Transportation can also be slow and costly. Poor roads and railways mean that it takes a long time for manufactured goods to reach the coast to be transported to other countries.

20

Extract C Competition in the smartphone industry

The smartphone industry in India is dominated by a few large businesses because smaller businesses find it difficult to compete on quality, functions and variety of smartphones. The large smartphone businesses mainly use non-price competition in order to increase market share. These strategies include advertising and branding, innovation, design and after-sales service.

5



(6)



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SECTION B

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 7.

Write your answers in the space provided on the following pages.

- 7** (a) With reference to Figure 1, calculate the percentage change in Deliveroo's total revenue between 2017 and 2021. You are advised to show your working. (2)
- (b) With reference to Figure 2, explain the market structure of the UK food delivery market in 2021. (4)
- (c) With reference to Extract B, analyse **two** factors that influence the demand for online food delivery. (6)
- (d) With reference to Figure 1 and the first paragraph of Extract B, examine **two** reasons why Deliveroo is making a loss. (8)
- Illustrate your answer with an appropriate diagram(s).
- (e) With reference to the information provided, discuss the strategies used by food delivery businesses to increase their market shares. (14)
- Refer to game theory analysis in your answer.

Sources for use with Section B

The food delivery market

Figure 1 Deliveroo's annual total revenue and loss, £ million, 2017–2021

Year	Total revenue	Loss
2017	277	199
2018	476	232
2019	771	317
2020	1 163	223
2021	1 824	298

Figure 2 Market share (%) of food delivery businesses in the UK, 2017–2021, (percentage share based on revenue)

	2017	2021
Just Eat	68	40
Deliveroo	12	27
Uber Eats	6	27
Dominos	5	3
Others	9	3



Extract A Deliveroo's market share in the UK

Deliveroo is a food delivery business operating mainly in western Europe. Consumers use an app to order food from a restaurant. Once the food has been prepared, a Deliveroo courier collects the food and delivers it to the consumer.

Deliveroo has three main competitors in the UK's food delivery market: Just Eat, Uber Eats and Dominos. All businesses provide consumers with an app to access their services. 5

During the global health crisis, Deliveroo experienced significant growth in its market share. This was because it differentiated itself by introducing home deliveries of groceries together with orders for takeaway meals. By the end of the crisis, Uber Eats and Just Eat had also introduced grocery deliveries to households. 10

Furthermore, the three largest businesses in the UK have been engaged in a price war and expensive advertising campaigns. The aim of these strategies was to increase market share and to force other competitors to leave the market.

Extract B Costs and revenues

In 2021 Deliveroo made a loss of £298 million. Marketing costs and fixed costs increased from £358.5 million in 2020 to £628.7 million in 2021. Costs are expected to continue to rise in the short-run because of the increase in the price of fuel and high rates of inflation across Europe. In the first six months of 2022, although Deliveroo's revenue was increasing, this was at a slower rate than the increase in its costs of production. 5

The average value of an order for a takeaway meal fell in many countries because consumers reduced the number of luxury items they purchased. In the European Union in June 2022 the annual growth in wages was 4.5% but the annual inflation rate was 9.6%. 10

However, demand for online food delivery and takeaway meals is expected to increase rapidly between 2023 and 2030. There are several reasons for this expected increase in demand including:

- An increase in the number of people living in cities. For example, from 2015 to 2025, there is expected to be a 7.6% increase in the population living in cities in the UK 15
- Greater consumer preference for online ordering associated with an increase in internet connectivity and smartphone usage. For example, online ordering and food delivery is growing at an annual rate of between 15% and 20% in the UK
- Increased advertising by food delivery businesses. For example, Just Eat's marketing expenditure in the first half of 2021 totalled £252 million compared with £83 million in the first half of 2020. 20



(6)

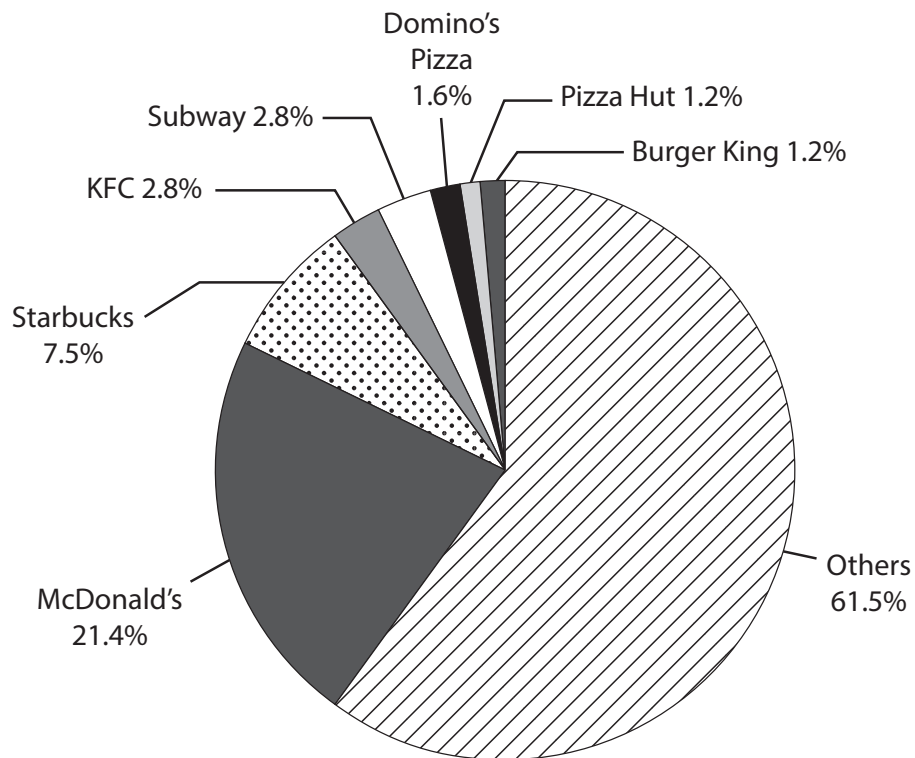


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SECTION B

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 7.
Write your answers in the space provided on the following pages.

- 7** (a) With reference to Figure 1, calculate the 4-firm concentration ratio of the global fast-food industry.
You are advised to show your workings. (2)
- (b) With reference to Extract C, explain what is meant by organic growth. (4)
- (c) With reference to Extract A, analyse **two** reasons why the global fast-food market is expected to grow. (6)
- (d) With reference to the last paragraph of Extract B, examine the likely impact on McDonald's profits by switching 'to suppliers that use more ethical and sustainable methods of production'.
Illustrate your answer with an appropriate diagram. (8)
- (e) With reference to Figure 1, Extract C and your own knowledge, discuss the likely effects of McDonald's opening CosMc's on its competitors. (14)

Sources for use with Section B**The fast-food industry****Figure 1 Global market share of companies in the fast-food industry, 2023**

Extract A The global fast-food market

The global increase in fast-food consumption has been caused by several factors:

- a rise in the number of people living in cities. For example, between 2010 and 2021, the population living in cities increased from 3.59 billion to 4.59 billion
- changes in people's lifestyles has led to limited time for individuals to spend preparing meals 5
- the affordability of fast food has made it popular as a result of slow wage growth and increased living costs
- the large marketing expenditures and branding strategies of the companies in the fast-food industry. For example, in 2020, fast-food companies spent \$4.5 billion on advertising 10
- greater use of mobile applications by consumers to order fast food for home delivery. For example, in 2023, Zomato was downloaded 52 million times and Uber Eats 41 million times.

However, in many countries there is an increased awareness of health risks associated with consuming fast food, such as heart disease and obesity. This has led to changes in consumer behaviour as evidenced by an increase in demand for fresh food and organic food that use locally sourced ingredients. 15

Extract B McDonald's

McDonald's Corporation is an American business that operates over 40 275 restaurants worldwide. It produces a range of fast foods including burgers, fries, salads and drinks. In 2023 its assets were valued at \$170 billion and it was the fourth-largest employer globally, employing over 1.9 million workers. McDonald's has over 70 million customers daily, selling an average of 80 burgers every minute. 5

In recent years, McDonald's has had to adapt its products to meet changing consumer preferences. McDonald's has made significant changes to provide healthy options for its customers. For example, it has expanded its menu to include salads, fruit bags and lower-calorie alternatives. 10

Moreover, McDonald's has switched to suppliers that use more ethical and sustainable methods of production. As a result, McDonald's costs of production have increased. The purpose of this change of suppliers was to make a positive impact on the planet. For example, McDonald's now uses:

- deforestation-free supply chains for beef 15
- sustainable fisheries for fish
- sustainable palm oil production
- locally-sourced ingredients to reduce its carbon footprint.



Extract C McDonald's opens CosMc's

In December 2023 McDonald's opened a new café called CosMc's. It sells a variety of drink and food options. CosMc's has a menu of drinks such as coffees and teas, with the ability to customise them. There are also limited food choices for on-the-go eating. McDonald's aims to compete with Starbucks in the growing beverage market and plans to open CosMc's in 10 different locations, mainly in Texas, USA, by December 2024. McDonald's is planning to establish 10 000 new CosMc's cafés worldwide by 2027.

5

Acknowledgements**Figure 1 adapted from:**

<https://www.zippia.com/advice/burger-king-statistics/>

Extract A adapted from:

<https://www.foodbusinessnews.net/articles/22941-fast-foods-future>

<https://www.fortunebusinessinsights.com/fast-food-market-106482>

https://www.reportlinker.com/market-report/Food-Services/9301/Fast-Food?term=fast%20food%20statistics&matchtype=b&loc_interest=&loc_physical=1006925&utm_group=standard&utm_term=fast%20food%20statistics&utm_campaign=ppc&utm_source=google_ads&utm_medium=paid_ads&utm_content=transactionnel-3&gad_source=1&gclid=Cj0KCQiAtaOtBhCwARIsAN_x-3KQ6IPGiHO3NjUBbVH-IBGUv39amVw5J1Drqhoe_falcV_B46MrgW8aAnhVEALw_wcB

Extract B adapted from:

<https://corporate.mcdonalds.com/corpmcd/home.html>

<https://officechai.com/learn/the-biggest-employers-in-the-world-by-workforce/>

<https://www.enterpriseappstoday.com/stats/mcdonalds-statistics.html>

<https://www.theguardian.com/business/2007/jul/05/lifeandhealth.consumerandethicalliving>

Extract C adapted from:

<https://www.independent.co.uk/voices/mcdonalds-cosmcs-cafe-independent-coffee-shops-capitalism-b2461310.html>

<https://www.independent.co.uk/life-style/cosmcs-mcdonalds-menu-spinoff-b2460726.html>



(6)



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SECTION C

Study Figure 1 and Extracts A, B and C in the Source Booklet before answering Question 12.

Write your answers in the spaces provided on the following pages.

- 12** (a) Define the term 'supply' (Extract A, line 8). (2)
- (b) With reference to Extract A, explain **one** advantage of Apple using energy produced from renewable resources. (4)
- (c) With reference to Figure 1 and Extract B, analyse **two** reasons why the 'world price of lithium increased by 191%' (Extract B, line 2).
Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to the last paragraph of Extract C, examine **two** likely effects on smartphone manufacturers of the growth in the market for refurbished smartphones. (8)
- (e) With reference to Extract C, discuss the microeconomic effects of the increase in smartphone manufacturing between 2011 and 2021. Refer to external costs in your answer.
Illustrate your answer with an externalities diagram. (14)

Sources for use with Section C

Renewables, lithium and smartphones

Extract A Apple's renewable commitment

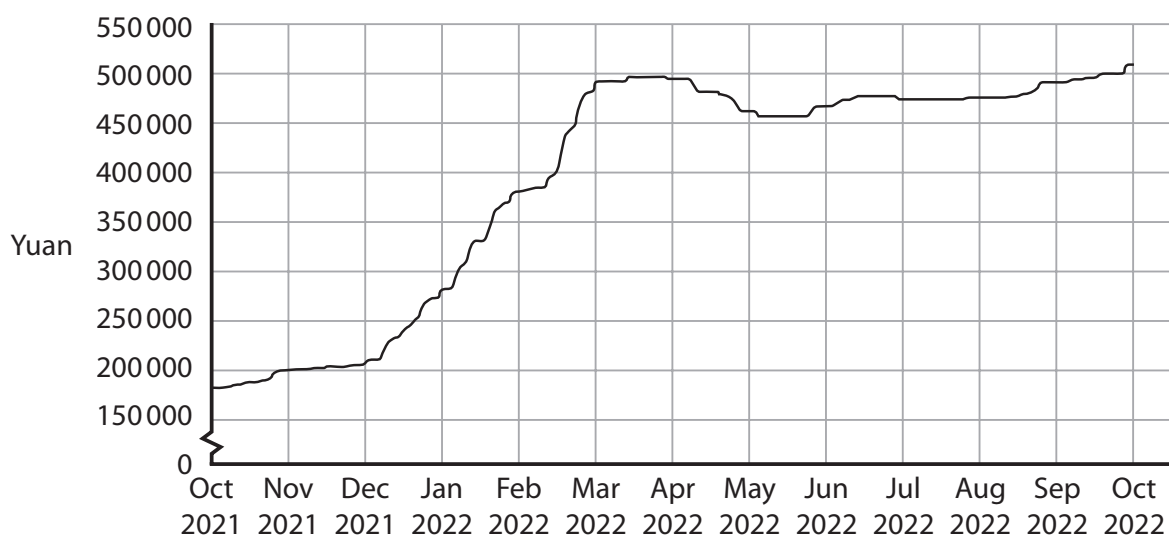
In 2020 100% of the energy used directly by Apple was from renewable resources. In 2022 it announced that 213 of its suppliers had agreed to use only renewable resources to power production. Examples of Apple's commitment to renewable energy include:

- investment in a 2 300 acre solar project in Texas
- a data centre in Denmark powered by a solar park and wind farm
- Apple's supplier, Keiwa, in Japan using renewable energy from a wind farm.

5

The global supply of energy produced from renewable resources is expected to increase by 8% in 2022.

Figure 1 World price of lithium, yuan per tonne, October 2021 to October 2022



Extract B Demand for lithium

Between October 2021 and October 2022 the world price of lithium increased by 191%. Lithium production increased by 20% but demand increased by significantly more.

With rising oil prices many consumers switched from petrol and diesel cars to electric cars. These electric vehicles require lithium in the batteries. In 2021 global sales of electric vehicles increased by 108% to 6.75 million and in China sales grew by 157.5%. Sales of smartphones, that also use lithium batteries, increased by 11.4% in 2021 to 1.5 billion. 5

Extract C Smartphone manufacturing

Between 2011 and 2021 smartphone production increased from 472 million to 1 433 million. Globally 4.5 billion people owned a smartphone by the end of 2022. In 2022 smartphones will produce 146 million tonnes of CO₂ emissions which is 0.5% of global carbon emissions. These emissions are produced in the manufacturing, transportation, usage and recycling of smartphones. 5

Smartphone devices contain several precious and rare earth metals. The environmental costs of mining these metals can be significant. Extracting iron, aluminium and copper produces huge amounts of liquid and solid waste. For example, in 2015 33 billion litres of waste was spilt from an iron ore mine in Minas Gerais, Brazil. In addition, mining gold is a major cause of deforestation. 10

Smartphone manufacturers are producing phones which last longer but are more expensive. As a result consumers do not replace their smartphones so frequently. The market for smartphones that have been refurbished* is forecast to be worth \$65 billion by 2024. Typically, a consumer can sell a one-year-old smartphone for 50% of its original price. The manufacturer can sell the same refurbished smartphone for 80% of its original price. Unwanted smartphones in developed countries are desired in emerging countries. 15

* a refurbished smartphone is one that has been repaired and rebuilt.

(8)



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

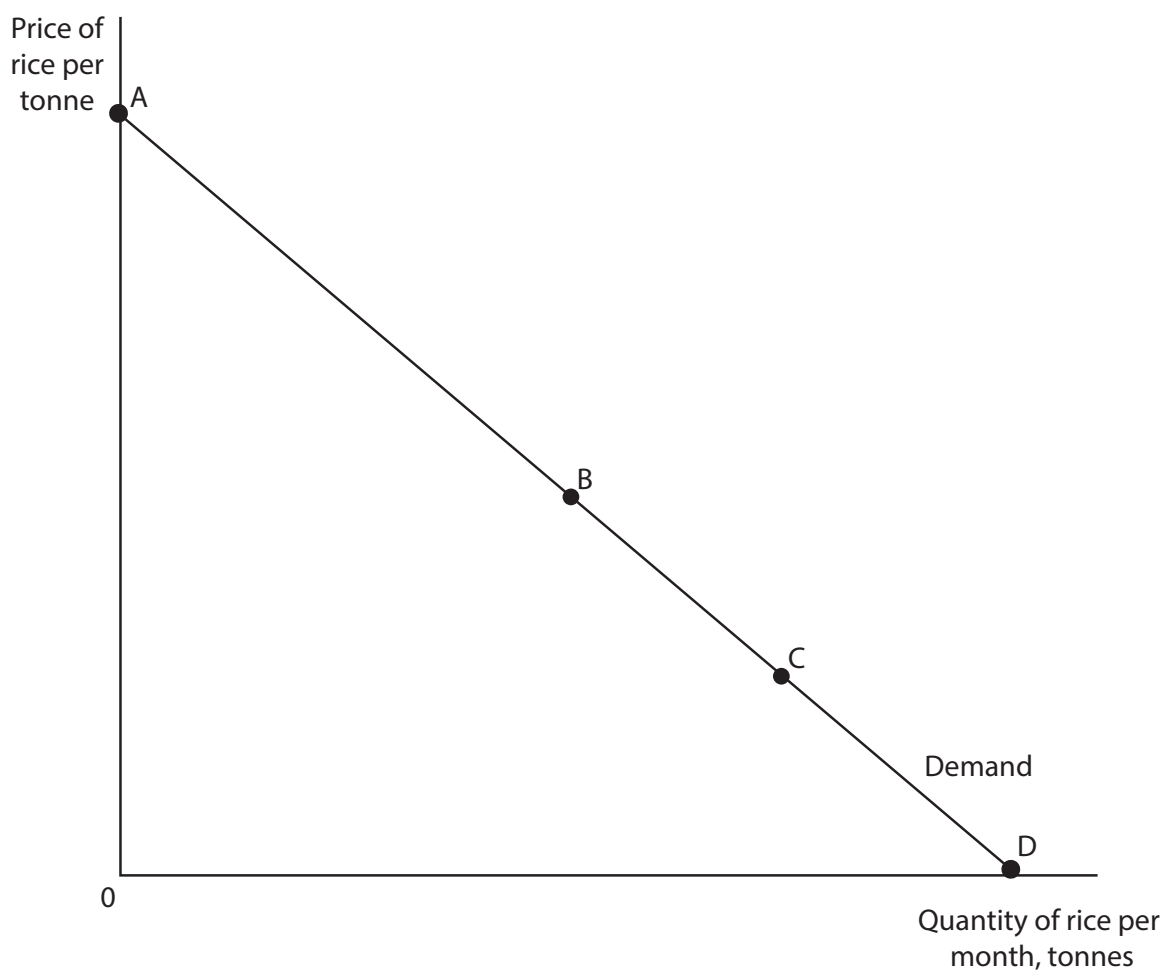
SUB-TOPIC 1.3.2.3

PRICE, INCOME AND CROSS ELASTICITIES OF DEMAND

Sub-topic 1.3.2.3 · 53 questions · 126 marks · lowest tariff first



5 The diagram shows a demand curve for rice.



At which point on the demand curve will the price elasticity of demand be unitary?

- ☐ A
- ☐ B
- ☐ C
- ☐ D

(Total for Question 5 = 1 mark)

- 6 The table shows the estimated income elasticity of demand for various goods and services in the USA.

Item	Estimates of income elasticity of demand
Cheese	-0.51
Public transport	-0.36
Ice cream	+0.83
Motor cars	+2.56

(Source: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1102&context=agecon_cornhusker)

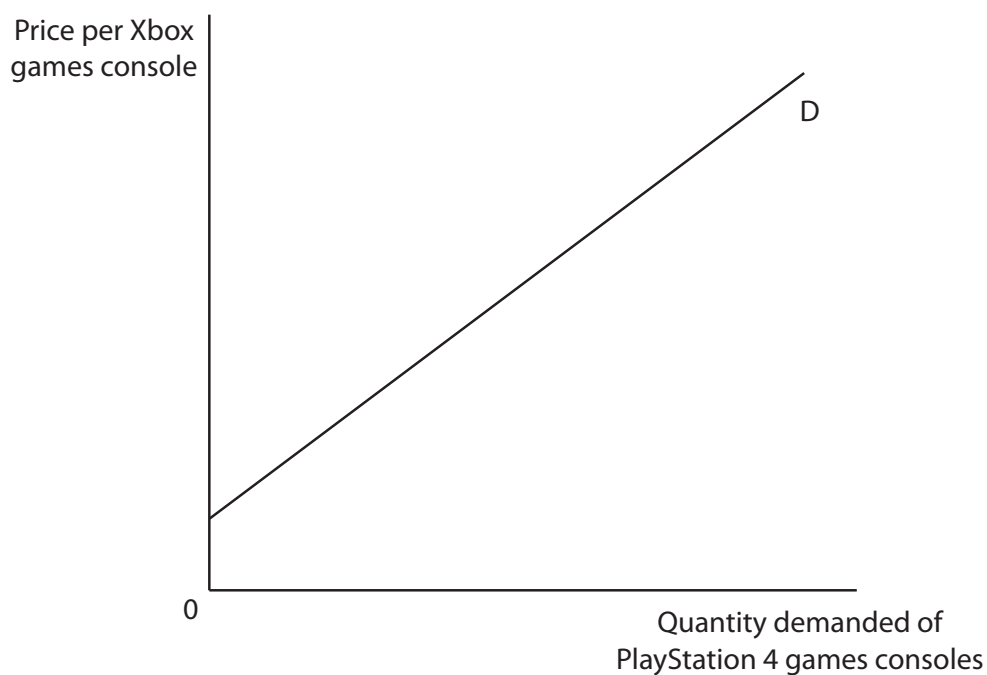
Which **one** of the following can be deduced from the table?

- ☐ A Cheese has relatively price inelastic demand.
- ☐ B Public transport is a normal good.
- ☐ C An increase in real income will result in a less than proportionate decrease in demand for ice cream.
- ☐ D A decrease in real income will result in a more than proportionate decrease in the demand for motor cars.

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS

- 5 The diagram shows the relationship between the price of Xbox games consoles and the quantity demanded of PlayStation 4 games consoles.



It can be deduced from the diagram that the two goods are

- ☐ A complementary goods
- ☐ B inferior goods
- ☐ C substitute goods
- ☐ D unrelated goods

(Total for Question 5 = 1 mark)

- 5 The table shows the estimated price elasticity of supply for cotton in selected countries.

Australia	0.46
Egypt	0.16
India	0.31
Mexico	1.08

(Source: <http://www.fao.org/3/a-ah470e.pdf>)

Which **one** of the following can be deduced from the table?

- ☐ A Supply is price elastic in India
- ☐ B Supply is price inelastic in Mexico
- ☐ C Supply is least responsive to a change in price in Egypt
- ☐ D Supply is most responsive to a change in price in Australia

(Total for Question 5 = 1 mark)

- 6 In 2017 the average price of a smartphone increased by 5% in Western Europe. This resulted in a 4% decrease in the sales of smartphones in this region.

Ceteris paribus, the price elasticity of demand for smartphones in this region is equal to

- ☐ A -1.25
- ☐ B -0.80
- ☐ C +0.80
- ☐ D +1.25

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



- 6 The table shows the estimated price elasticity of demand for air travel. Short-haul is air travel within the same continent and long-haul is air travel to a different continent.

	Estimates of price elasticity of demand
Short-haul business travellers	-0.70
Long-haul business travellers	-0.27
Short-haul leisure travellers	-1.52
Long-haul leisure travellers	-1.04

(Source: https://www.fin.gc.ca/consultresp/Airtravel/airtravStdy_-eng.asp)

Which **one** of the following can be deduced from the table?

- ☐ **A** An increase in the price of flights for long-haul business travellers will increase total revenue for airlines
- ☐ **B** An increase in the price of flights for short-haul leisure travellers will increase total revenue for airlines
- ☐ **C** Long-haul business travellers are more responsive to a change in price than short-haul business travellers
- ☐ **D** Long-haul leisure travellers are more responsive to a change in price than short-haul leisure travellers

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



6 The table shows the estimated income elasticity of demand for various items.

	Income elasticity of demand
Cars	+2.46
Furniture	+1.48
Petrol	+0.48
Public transport	-0.37

Which **one** of the following can be deduced from the table?

- ☐ A A 10% increase in income leads to a 24.6% decrease in demand for cars
- ☐ B A 10% increase in income leads to a 14.8% decrease in demand for furniture
- ☐ C A 5% increase in income leads to a 2.4% increase in demand for petrol
- ☐ D A 5% increase in income leads to a 1.85% increase in demand for public transport

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



- 6 The table shows the estimated income elasticity of demand for selected food items in the UK.

Food item	Income elasticity of demand
Butter	+0.20
Coffee	+0.16
Margarine	−0.37
Tea	−0.02

(Source: <https://pdfs.semanticscholar.org/c384/d29d9fb4993d265c9bed5be20f6d984b09c3.pdf>)

Which **one** of the following can be deduced from the data?

- ☐ A A decrease in real income will result in a more than proportionate decrease in demand for butter
- ☒ B An increase in real income will result in a less than proportionate increase in demand for coffee
- ☐ C A decrease in real income will result in a more than proportionate increase in demand for margarine
- ☐ D An increase in price will result in a less than proportionate decrease in demand for tea

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



3 The table shows the price elasticity of demand for four household appliances.

Household appliances	Price elasticity of demand
Clothes dryers	-0.14
Dishwashers	-0.37
Refrigerators	-0.48
Washing machines	-0.32

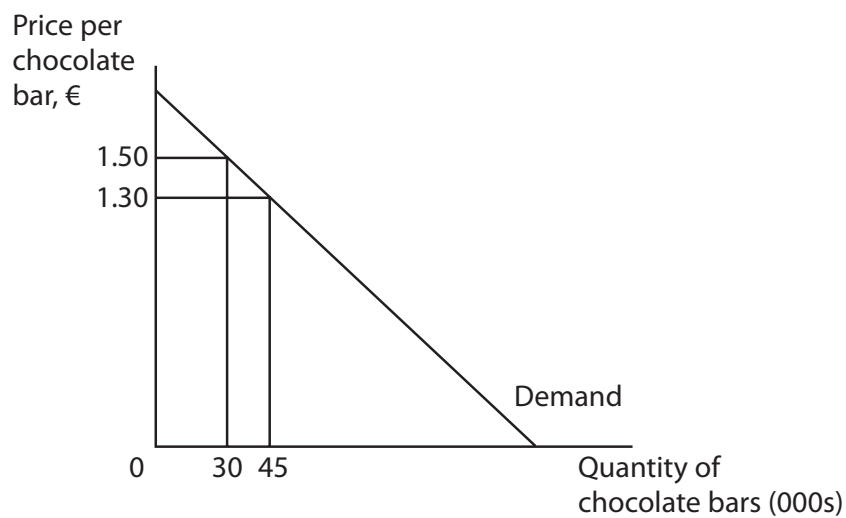
(Source adapted from: <https://www.osti.gov/servlets/purl/929429>)

Which **one** of the following can be deduced from the table?

- ☐ A The demand for clothes dryers is price elastic
- ☐ B The demand for dishwashers is perfectly price inelastic
- ☐ C The demand for refrigerators is price inelastic
- ☐ D The demand for washing machines is perfectly price elastic

(Total for Question 3 = 1 mark)

4 The diagram shows the demand curve for a chocolate bar in Spain.



Retailers reduce the price of the chocolate bar from €1.50 to €1.30.

Which **one** of the following can be deduced from the diagram?

- ☐ A Total revenue will rise by €13 500
- ☐ B Total revenue will rise by €58 500
- ☐ C Total revenue will decrease by €6 000
- ☐ D Total revenue will decrease by €45 000

(Total for Question 4 = 1 mark)

- 6 The table shows the cross elasticity of demand for selected drinks with respect to sugar-sweetened drinks in Chile.

Drink	Cross elasticity of demand
Water	+0.63
Milk	+0.25
Coffee	+0.12

(source: <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-017-4098-x/tables/5>)

Which **one** of the following can be deduced from the table?

- ☐ A The demand for coffee will be most responsive to a change in the price of sugar-sweetened drinks
- ☐ B The demand for water will be most responsive to a change in the price of sugar-sweetened drinks
- ☐ C An increase in the price of sugar-sweetened drinks will lead to a more than proportionate increase in the demand for milk
- ☐ D An increase in the price of sugar-sweetened drinks will lead to a decrease in the demand for water, milk and coffee

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



3 The table shows the estimated income elasticity of demand for four items.

Item	Income elasticity of demand
Caribbean holidays	+2.02
Healthcare	+0.70
Electricity	+0.40
Bus travel	−0.70

Which **one** of the following can be deduced from the table?

- ☐ A Caribbean holidays are an inferior good
- ☐ B Demand for healthcare is income elastic
- ☐ C Electricity is a normal good
- ☐ D Demand for bus travel is price inelastic

(Total for Question 3 = 1 mark)



- 3 The table shows the estimated cross elasticity of demand in Indonesia for four goods with respect to a change in the price of rice.

Goods	Cross elasticity of demand
Vegetables	-0.05
Meat	-0.19
Fish	+0.40
Maize	+1.25

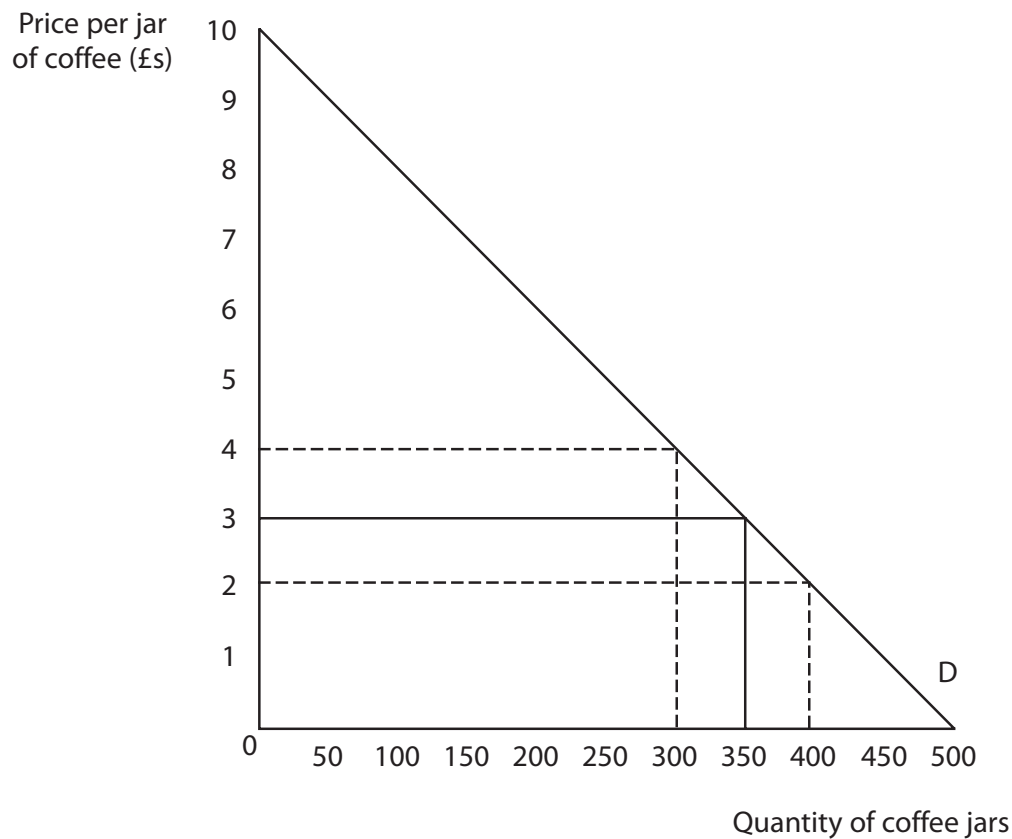
(Source adapted from <https://econbeh.blogspot.com/2019/05/some-estimates-of-cross-price-elasticity.html>)

Which **one** of the following can be deduced from the table?

- ☐ A Vegetables and rice are normal goods
- ☐ B Meat and rice are inferior goods
- ☐ C Fish is a complement for rice
- ☐ D Maize is a substitute for rice

(Total for Question 3 = 1 mark)

- 4 The diagram shows the demand curve for a 500 g jar of coffee. The price is currently £3 and 350 jars are sold.



Which **one** of the following can be deduced from the diagram?

- ☐ A The demand for coffee is income inelastic
- ☐ B The supply of coffee is price elastic
- ☐ C An increase in the price of a jar of coffee by £1 will increase total revenue
- ☐ D A decrease in the price of a jar of coffee by £1 will increase total revenue

(Total for Question 4 = 1 mark)

- 5 In April 2020 electricity prices increased on average by 10% in the UK. In the same month, a record number of 668 371 consumers switched to cheaper electricity suppliers.

Which **one** of the following can explain the behaviour of those consumers who switched to cheaper electricity suppliers?

- ☐ A Consumers experienced habitual behaviour
- ☐ B Consumers aimed to maximise their utility
- ☐ C Consumers had poor computational skills
- ☐ D Consumers aimed to minimise their utility

(Total for Question 5 = 1 mark)

- 6 In a particular year, a 4% rise in real incomes caused the demand for cinema tickets to increase from 250 000 to 290 000.

Which **one** of the following shows the value of income elasticity of demand?

- ☐ A -4.00
- ☐ B -0.25
- ☐ C +0.25
- ☐ D +4.00

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



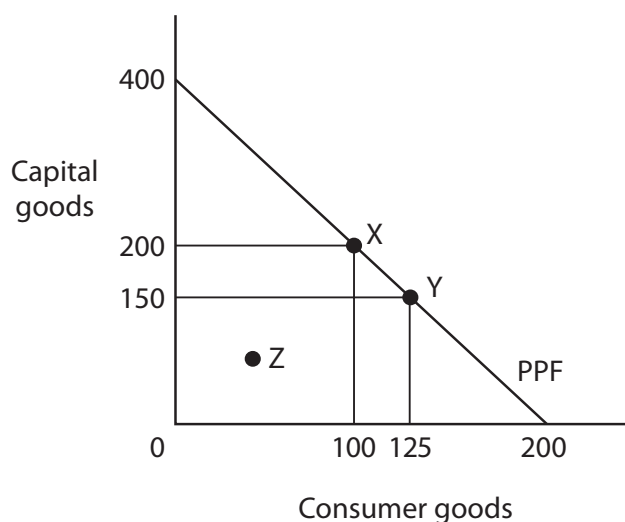
- 3 In the Netherlands the cross-elasticity of demand for organic meat with respect to a change in the price of non-organic meat is +0.5.

Which **one** of the following can be deduced from this information?

- ☐ A Organic meat and non-organic meat are substitutes
- ☐ B Organic meat and non-organic meat are normal goods
- ☐ C Organic meat and non-organic meat are unrelated goods
- ☐ D Organic meat and non-organic meat are complements

(Total for Question 3 = 1 mark)

- 4 The diagram shows the production possibility frontier for an economy currently operating at point X.



Which **one** of the following can be deduced from the diagram?

- ☐ A Point Z is unobtainable when using all available resources
- ☐ B Point Y would generate higher economic growth than point X
- ☐ C The movement from point X to point Y has an opportunity cost of 50 capital goods
- ☐ D The movement from point X to point Y has an opportunity cost of 25 consumer goods

(Total for Question 4 = 1 mark)

- 3 The table shows the estimated price elasticity of demand for railway tickets for use on underground trains in selected Mexican cities in 2020.

City	Price elasticity of demand
Guadalajara	-0.32
Mexico City	-0.25
Monterrey	-0.23

(Source adapted from: https://www.nber.org/system/files/working_papers/w28244/w28244.pdf)

Which **one** of the following can be deduced from the table?

- ☐ **A** The demand for railway tickets in Guadalajara is price elastic
- ☐ **B** A decrease in the price of railway tickets in Mexico City will decrease total revenue
- ☐ **C** An increase in the price of railway tickets in Monterrey will decrease total revenue
- ☐ **D** The demand for the railway tickets in all three cities will decrease in response to an increase in income

(Total for Question 3 = 1 mark)

SECTION A

Answer ALL questions in this section.

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 ☐.

1 Which **one** of the following combinations of characteristics best describes private goods?

- ☐ A Rival and excludable
- ☐ B Rival and non-excludable
- ☐ C Non-rival and excludable
- ☐ D Non-rival and non-excludable

(Total for Question 1 = 1 mark)

2 It was estimated that the price elasticity of demand for cereals was -0.6 and for fruit it was -0.7 .

Which **one** of the following factors is most likely to cause demand for a product to be price inelastic?

- ☐ A There are legal constraints on manufacturing the product
- ☐ B There are large stocks of the product available
- ☐ C The product has many substitutes
- ☐ D The product lacks substitutes

(Total for Question 2 = 1 mark)



- 3 The table shows the average percentage change in the price of tickets for National Basketball Association (NBA) games and the percentage change in the quantity of tickets sold. The data compares the percentage changes between 2021 and 2022.

Average percentage change in the price of tickets for NBA games	+10.2%
Percentage change in the quantity of tickets sold at NBA games	–18.0%

Which **one** of the following can be deduced from the table?

- ☐ A Demand for NBA tickets is price inelastic
- ☐ B Demand for NBA tickets is price elastic
- ☐ C Demand for NBA tickets is income elastic
- ☐ D Demand for NBA tickets is income inelastic

(Total for Question 3 = 1 mark)

- 6 The table shows the cross elasticities of demand for selected vehicle types with respect to the price of diesel vehicles in Norway.

Vehicles	Cross elasticity of demand
Battery electric	+0.48
Hybrid	+0.32

(Source: adapted from <https://etrr.springeropen.com/articles/10.1186/s12544-020-00454-2/figures/6>)

Which **one** of the following can be deduced from the table?

- ☐ A A 10% increase in the price of diesel vehicles will result in a 4.8% decrease in the quantity of battery electric vehicles demanded
- ☐ B A 10% increase in the price of diesel vehicles will result in a 0.32% increase in the quantity of hybrid vehicles demanded
- ☐ C A 5% increase in the price of diesel vehicles will result in a 3.2% decrease in the quantity of hybrid vehicles demanded
- ☐ D A 5% increase in the price of diesel vehicles will result in a 2.4% increase in the quantity of battery electric vehicles demanded

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



- 3 The table shows the estimated price elasticity of demand for different car types in Norway.

Car type	Price elasticity of demand
Diesel	-0.99
Petrol	-1.08
Electric	-1.27

Which **one** of the following can be deduced from the table?

- ☐ A Demand for all three car types is price inelastic
- ☐ B Demand for all three car types is price elastic
- ☐ C An increase in the price of diesel cars will result in an increase in the total revenue for diesel car manufacturers
- ☐ D An increase in the price of electric cars will result in an increase in the total revenue for electric car manufacturers

(Total for Question 3 = 1 mark)

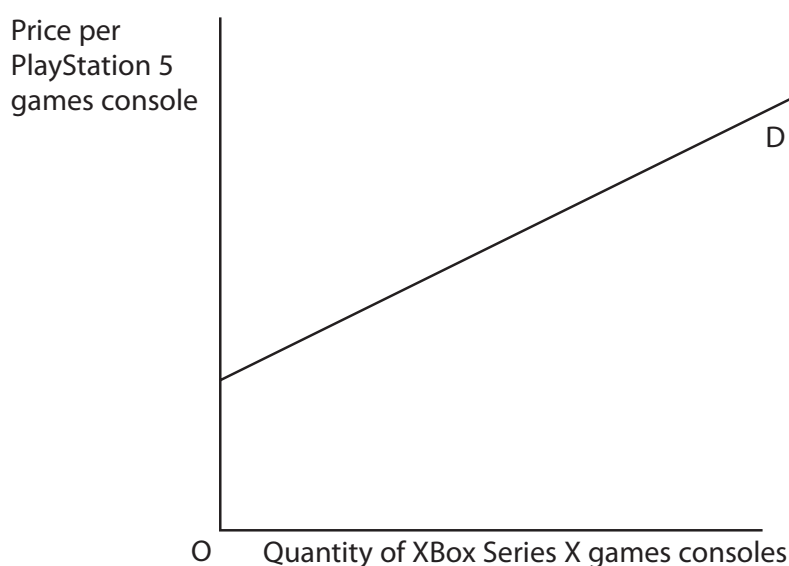
- 5 Before the global financial crisis of 2008, commercial banks expected that their governments would not allow them to fail because of the threats to the rest of the economy. This meant that some staff at banks took excessive risks when lending and investing.

Which **one** of the following concepts best describes the behaviour of staff at these banks?

- ☐ A Inertia
- ☐ B The free-rider problem
- ☐ C Moral hazard
- ☐ D Market bubble

(Total for Question 5 = 1 mark)

- 6 The diagram illustrates the relationship between the price of PlayStation 5 games consoles and the quantity demanded of Xbox Series X games consoles.



Which **one** of the following can be deduced from the diagram about the relationship between PlayStation 5 games consoles and Xbox Series X games consoles?

- ☐ A They are substitutes
- ☐ B They are complements
- ☐ C They are unrelated goods
- ☐ D They are inferior goods

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



SECTION A

Answer ALL questions in this section.

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 ☒.

1 Which **one** of the following is a characteristic of symmetric information?

- ☐ A Buyers have more information than sellers
- ☐ B Sellers have more information than buyers
- ☐ C Buyers and sellers have the same level of information
- ☐ D Buyers and sellers experience market failure

(Total for Question 1 = 1 mark)

2 70 million citizens in Bangladesh live in areas where there is a risk of flooding.

The Government of Bangladesh plans to spend \$400 billion to build 600 kilometres of sea defences.

Sea defences are an example of which **one** of the following?

- ☐ A Consumer goods
- ☐ B Free goods
- ☐ C Private goods
- ☐ D Public goods

(Total for Question 2 = 1 mark)

3 The cross elasticity of demand for Pepsi Cola with respect to a change in the price of Coca-Cola is estimated to be +0.62 in North America.

Which **one** of the following can be deduced from this information?

- ☐ A Pepsi Cola and Coca-Cola are complements
- ☐ B Pepsi Cola and Coca-Cola are substitutes
- ☐ C Pepsi Cola and Coca-Cola are unrelated goods
- ☐ D Pepsi Cola and Coca-Cola are normal goods

(Total for Question 3 = 1 mark)

SECTION A

Answer ALL questions in this section.

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

1 Which **one** of the following has an opportunity cost of zero?

- ☐ A An economic good
- ☐ B A free good
- ☐ C A public good
- ☐ D A capital good

(Total for Question 1 = 1 mark)

2 In 2021 the UK's tradeable pollution permits scheme issued 4.4 million permits to airline companies. However, the industry only required 3.3 million permits.

Which **one** of the following is the likely result of supplying this number of permits?

- ☐ A The market price of permits will decrease
- ☐ B The market price of permits will increase
- ☐ C Airline companies will leave the market as a result of increased costs
- ☐ D Airline companies will have more incentive to invest in cleaner technology

(Total for Question 2 = 1 mark)

3 In North America the cross elasticity of demand for coffee with respect to a change in the price of milk was estimated to be -0.04 .

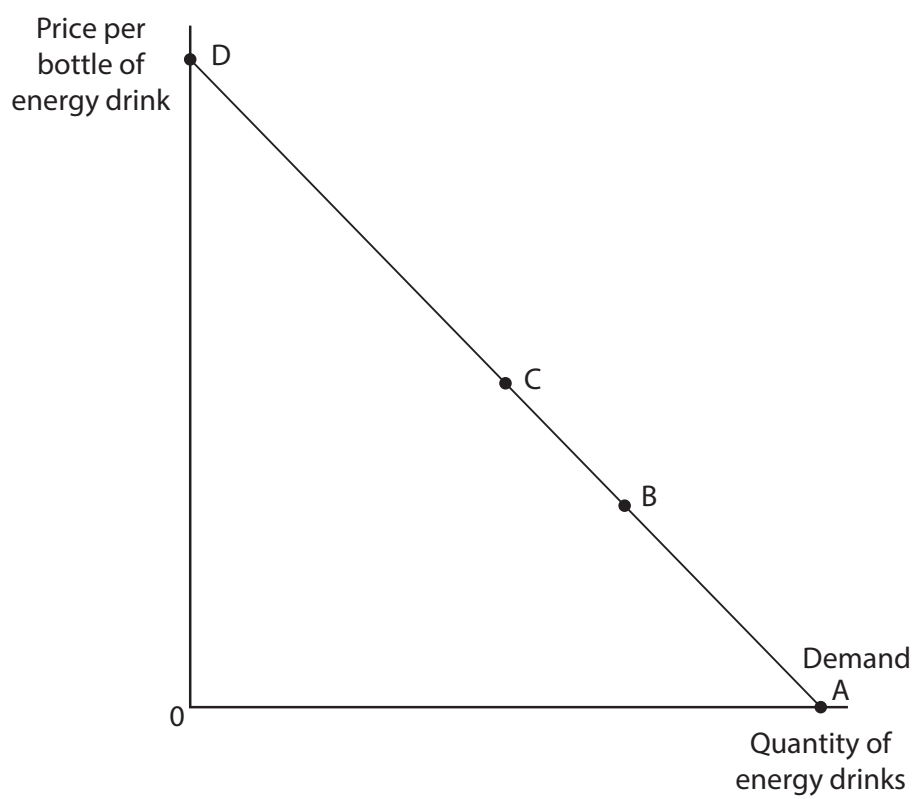
Which **one** of the following can be deduced from this information?

- ☐ A Coffee and milk are inferior goods
- ☐ B Coffee and milk are substitute goods
- ☐ C Coffee and milk are unrelated goods
- ☐ D Coffee and milk are complementary goods

(Total for Question 3 = 1 mark)



4 The diagram shows the demand curve for bottled energy drinks.



Which **one** of the following points has the value of -1 for price elasticity of demand?

- ☐ A
- ☐ B
- ☐ C
- ☐ D

(Total for Question 4 = 1 mark)

- 6 The table shows the estimated cross elasticity of demand for selected drinks with respect to a change in the price of soft drinks in Chile.

Drink	Cross elasticity of demand
Milk	+0.25
Coffee	+0.10
Water	+0.63

Which **one** of the following can be deduced from this information?

- ☐ A All three goods are complements of soft drinks
- ☐ B All three goods are substitutes for soft drinks
- ☐ C All three goods are normal goods
- ☐ D All three goods are luxury goods

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



- 6 The table shows the estimated cross elasticities of demand for selected types of vehicle with respect to a change in the price of petrol vehicles in Norway.

Types of vehicles	Cross elasticity of demand
Electric	+0.19
Plug-in hybrid	+0.25
Diesel	+0.64

(Source: adapted from <https://etrr.springeropen.com/articles/10.1186/s12544-020-00454-2>)

Ceteris paribus, which **one** of the following can be deduced from this information?

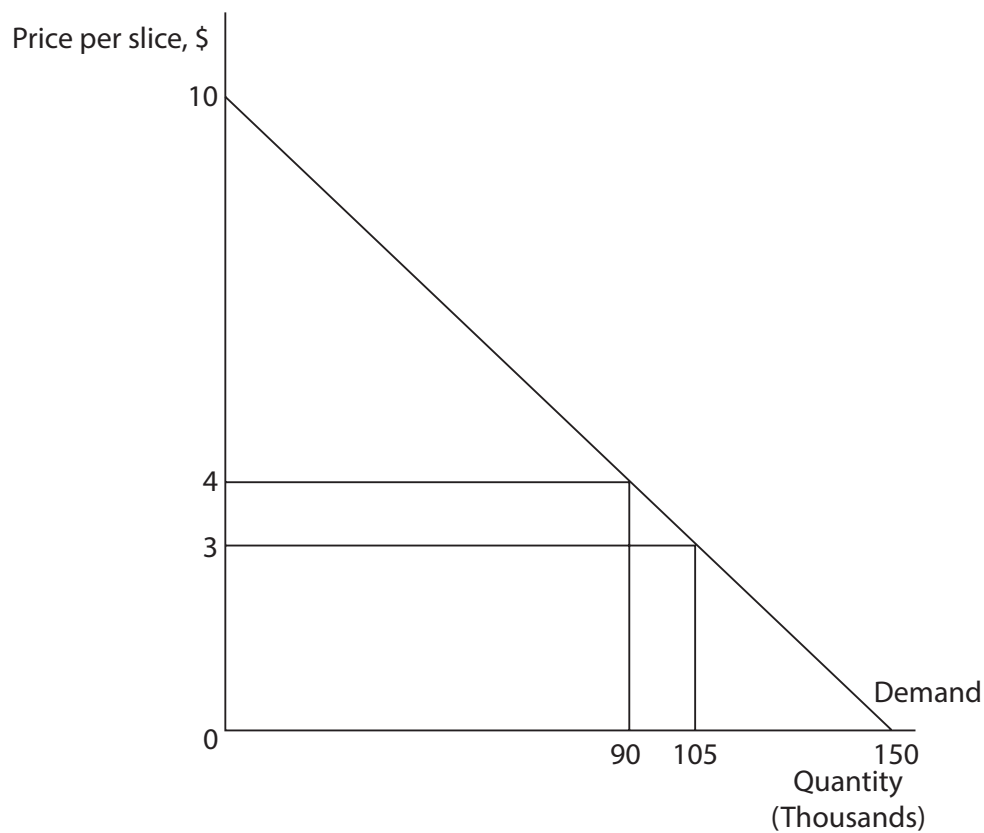
- ☐ A All three types of vehicle are normal goods
- ☐ B All three types of vehicle are inferior goods
- ☐ C All three types of vehicle are complements of petrol vehicles
- ☐ D All three types of vehicle are substitutes for petrol vehicles

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



4 The diagram shows the market for a slice of vegan cheesecake.



The price of a slice of vegan cheesecake was originally \$3. If the price is increased to \$4, which **one** of the following can be deduced from the diagram?

- ☐ **A** Total revenue would decrease by \$90 000
- ☐ **B** Total revenue would decrease by \$45 000
- ☐ **C** Total revenue would increase by \$45 000
- ☐ **D** Total revenue would increase by \$90 000

(Total for Question 4 = 1 mark)

- 6 The table shows the estimated price elasticity of demand for a bar of chocolate produced by selected chocolate bar manufacturers.

Manufacturer	Price elasticity of demand
Lindt	-1.1
Mars	-1.3
Mondelez	-1.6
Hershey	-2.1

(Source adapted from: <https://kylascanlon.com/2020/01/19/chocolate-at-any-cost-the-price-elasticity-of-the-candy-industry/>)

Ceteris paribus, which **one** of the following can be deduced from this information?

- ☐ **A** The demand for all four chocolate bars is price inelastic
- ☐ **B** All four chocolate bars are inferior goods
- ☐ **C** A 5% increase in the price of a Mars chocolate bar will result in a 6.5% decrease in the quantity demanded
- ☐ **D** A 5% increase in the price of a Mondelez chocolate bar will result in an 8% increase in the quantity demanded

(Total for Question 6 = 1 mark)

TOTAL FOR SECTION A = 6 MARKS



SECTION C

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'price elasticity of demand'. (Figure 2) (2)
- (b) Between 2020 and 2021 real incomes increased by 6.8% in Beijing.
With reference to Figure 2, explain whether chicken is a normal good or an inferior good. (4)
- (c) With reference to Figure 1 and the first paragraph of Extract A, analyse **one** demand reason and **one** supply reason why the price of chicken increased by 147% between May 2020 and May 2022.
Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to the second and third paragraphs of Extract A, examine **two** external costs associated with chicken production. (8)
- (e) With reference to Extract B and your own knowledge, discuss the impact of the introduction of an indirect tax on 'junk food'.
Illustrate your answer with an appropriate diagram. (14)



Sources for use with Section C

The markets for chicken and 'junk food'

Figure 1

Global price of chicken, \$ per kilogram, May 2020 to May 2022

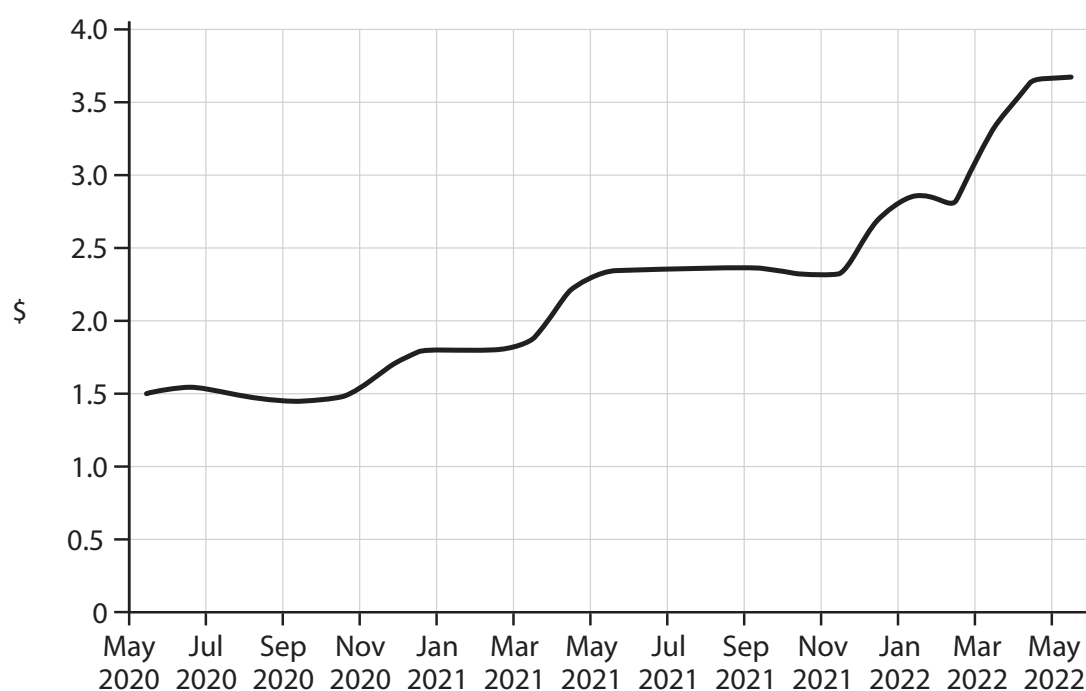


Figure 2

Estimated price elasticity of demand and estimated income elasticity of demand for chicken in Beijing, China for 2021

Price elasticity of demand	-0.55
Income elasticity of demand	+1.04

Extract A The global price of chicken

Between May 2020 and May 2022 the price of chicken increased by 147%. Problems in corn and wheat production resulted in a 20% increase in the cost of chicken feed. In addition, an outbreak of bird flu meant that, between October 2021 and December 2022, 140 million chickens globally could not be sold for consumption. At the same time, chicken became a more popular choice for consumers because it is considered to be a healthier option than other meats. 5

The production of one kilogram (kg) of chicken:

- uses 957 litres of water
- uses 0.9kg of grain to feed the chickens
- produces 0.7kg of carbon dioxide. 10

Globally, 345 billion kg of chickens are produced per year. Consequently, chicken production has a substantial impact on the environment. However, compared to 1965, producing the same amount of chicken has a 50% less negative impact on the environment. 15

Extract B ‘Junk food’ consumption

‘Junk food’ is a term used for foods that are high in calories, salt, sugar or fat and are low in nutrients. It includes burgers, fried chicken, pizza, chips and ice cream. Between 2020 and 2021, the global market for fast food (that includes junk food) grew from \$862 billion to \$972 billion and it is expected to grow further to \$1 467 billion by 2028. The World Health Organization (WHO) estimated that junk food contributed to 770 million people being obese in 2020. By 2030 it estimates that there will be over 1 billion obese people. Obesity increases the risk of cancer, heart disease and diabetes. In developed countries, treating obesity-related issues accounts for 8.4% of expenditure on healthcare. 5

Several governments have introduced taxes on junk food. For example: 10

- In 2011 the Government of Denmark introduced a tax on foods containing high levels of fat. This caused an increase in the price of these foods and resulted in job losses. As a result, the Government abandoned this tax in 2012
- In 2011 the Government of Hungary imposed taxes on food containing high levels of salt and sugar. This resulted in a 73% reduction in consumption of these foods. Demand for bottled water, fruit and vegetables increased 15
- In 2013 the Government of Mexico introduced a tax on high-calorie foods. This resulted in a 7% decline in junk food consumption between 2013 and 2018.

The WHO has recommended that more countries should introduce indirect taxes on junk food as a means of improving health. 20

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12 (a) Define the term 'price elasticity of demand'. (Figure 2)

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(b) Between 2020 and 2021 real incomes increased by 6.8% in Beijing.

With reference to Figure 2, explain whether chicken is a normal good or an inferior good.

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10 In September 2017, Centrica increased the price of gas and electricity by 12.5%. Before the price rise Centrica had 12 800 000 customers but this fell by 800 000 after the price increase.

Ceteris paribus, calculate the price elasticity of demand for gas and electricity from Centrica. Show your workings.

(Total for Question 10 = 4 marks)



SECTION C

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'free good' (Extract A, line 7).

(2)

Between 2008 and 2016 weekly household real income increased by 2.7% in Australia.

- (b) With reference to Figure 1, explain the likely change in quantity demanded of lamb between 2008 and 2016.

(4)

- (c) With reference to Figure 2 and Extract A, analyse **one** reason why the price of lamb increased during 2017.

Illustrate your answer with a supply and demand diagram.

(6)

- (d) With reference to Extract B, examine the external costs resulting from increased meat production.

(8)

- (e) With reference to Extract B, discuss the likely effects of the introduction of an indirect tax on meat.

Illustrate your answer with an appropriate diagram.

(14)



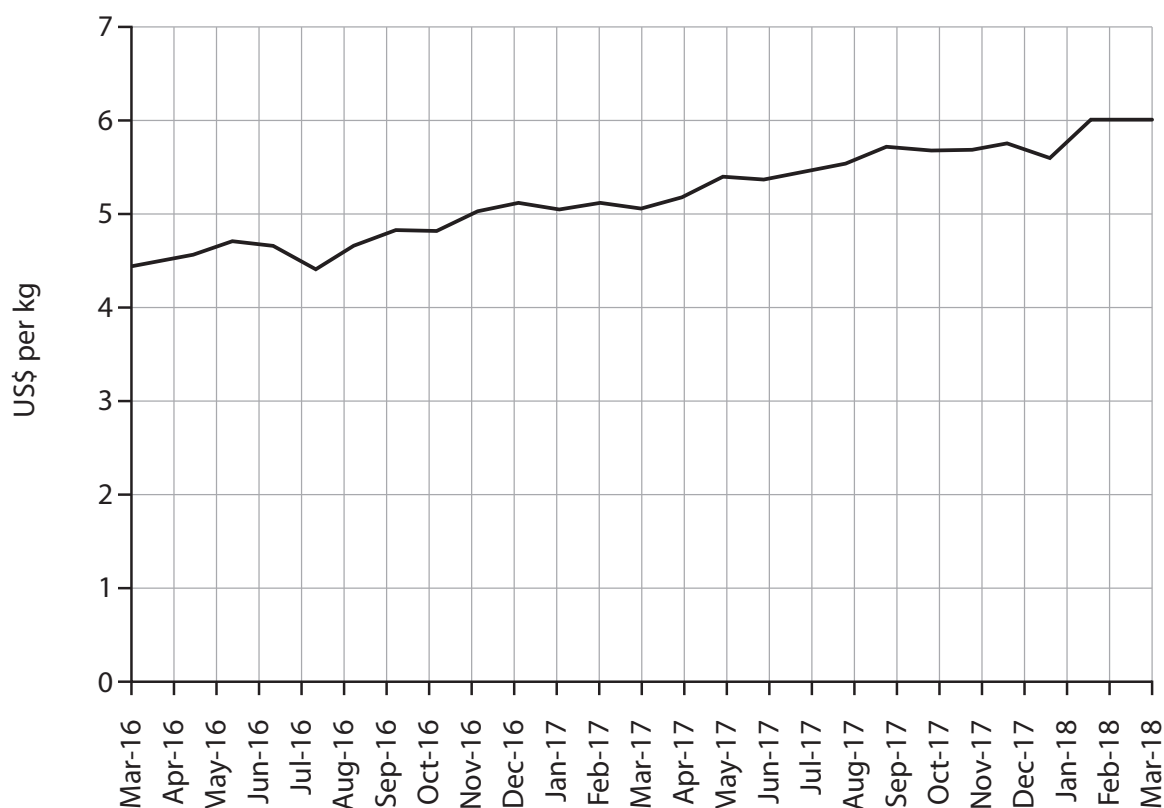
Sources for use with Section C.

The market for meat

Figure 1 Australian consumers' income elasticity of demand for lamb

	Income elasticity of demand (estimated)
Lamb	- 0.146

Figure 2 World price of lamb, US\$ per kg, March 2016 to March 2018



Extract A The price of lamb

The rise in the price of lamb has come at a time when supply is stable. Higher demand for lamb has been caused by a number of factors. Rising global incomes led to a 28% increase in demand for Australian lamb in 2017. At the same time demand has risen in the USA. Successful advertising campaigns have also contributed to increased demand.

5

The lambs in Australia are often allowed to walk and graze freely and most of their food is wild grass which is considered to be a free good.



Extract B Indirect tax on meat needed to address climate change

Meat consumption continues to increase around the world and meat production has risen in response. However, meat production has a damaging effect on the environment causing water pollution and 15% of all global greenhouse gas emissions. Excessive use of antibiotics to treat animals is also leading to a decline in the effectiveness of antibiotics used to treat human illnesses. 5

Many people consume too much meat, seriously damaging their health. This results in an increase in obesity, diabetes and cancer. For example, consuming 100 grams of red meat per day increases the risk of developing diabetes by 19%.

The Paris climate agreement set limits on the amount of global greenhouse gas emissions. However these targets will be missed unless taxes are used to restrict production and consumption. 10

One study looked at the impact of the introduction of a global meat tax. This study found a 40% tax on beef, a 20% tax on dairy products and a 8.5% tax on chicken would reduce emissions and save 500 000 lives a year. 15

The problems associated with meat production are not well-known by the public. One way to reduce emissions without the need for a tax would be for governments to provide the public with information on the external costs associated with meat production and consumption.

12 (a) Define the term 'free good' (Extract A, line 7).

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Between 2008 and 2016 weekly household real income increased by 2.7% in Australia.

(b) With reference to Figure 1, explain the likely change in quantity demanded of lamb between 2008 and 2016.

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- 10** The table shows the gross weekly earnings of Chinese workers and the number of visits abroad by Chinese citizens in 2016 and 2017.

	2016	2017
Gross weekly earnings (income)	¥1 299	¥1 373
Number of visits abroad by Chinese citizens	122 million	127 million

(Source: <https://ieconomics.com/china-wages> and <https://www.travelchinaquide.com/tourism/2016statistics/outbound.htm>)

Using the data in the table, calculate the income elasticity of demand for visits abroad by Chinese citizens. Show your workings.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

(Total for Question 10 = 4 marks)

- 10** The table shows the average annual income for workers in Singapore and the quantity of new car sales in Singapore in 2016 and 2017.

	2016	2017
Average annual income	S\$65 796	S\$67 032
Quantity of new car sales	109 091	112 114

Using the data in the table, *ceteris paribus*, calculate the income elasticity of demand for new cars in Singapore. Show your workings.

[illegible]

(Total for Question 10 = 4 marks)



11 The cross elasticity of demand for Pepsi cola with respect to Coca Cola is estimated to be +1.24.

Explain the likely impact of a 10% increase in the price of Coca Cola on the demand for Pepsi cola.

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS

SECTION C

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'equilibrium' (Extract A, line 2). (2)
- (b) With reference to Extract A, explain the impact of the availability of substitutes on the price elasticity of demand for palm oil. (4)
- (c) With reference to the information provided, analyse **two** reasons why the price of palm oil decreased in 2018. (6)
- Illustrate your answer with a supply and demand diagram.
- (d) With reference to Figure 2 and Extract A, examine the likely price elasticity of supply for palm oil. (8)
- (e) With reference to Extract B, discuss the externalities associated with the production of palm oil. (14)
- Illustrate your answer with an appropriate diagram.

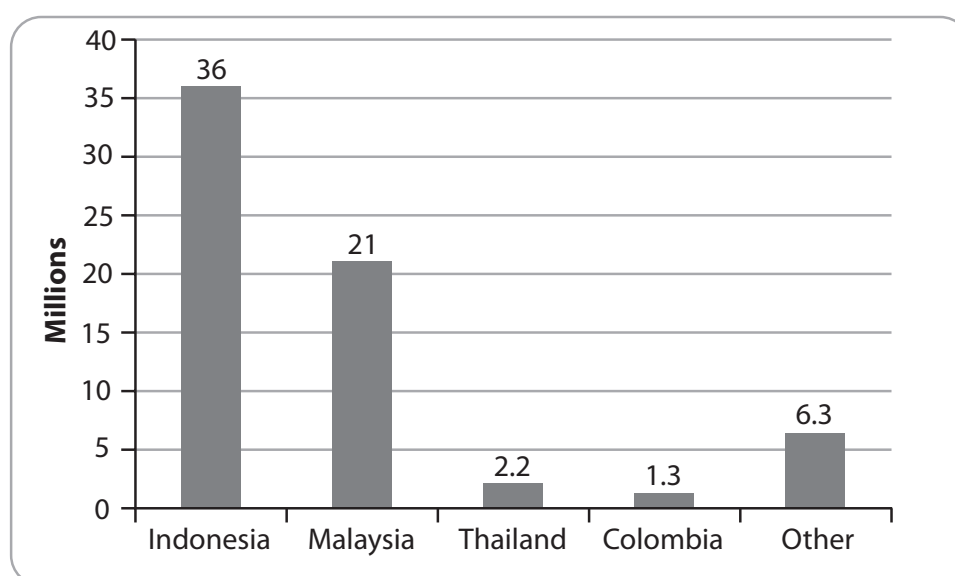
Sources for use with Section C.

The global market for palm oil

Figure 1 Price changes of selected vegetable oils, 2018

Type of vegetable oil	% price change
Palm	-25.94
Rapeseed	-12.71
Soybean	-17.75
Sunflower	-12.81

Figure 2 Global palm oil production in 2017 (million tonnes)



Extract A Palm oil price falls

The equilibrium price of palm oil decreased in 2018. The price of competing vegetable oils, including rapeseed, soybean and sunflower also fell in 2018. Palm oil is used in the production of biodiesel, a substitute for crude oil. Lower crude oil prices during 2018 caused a fall in the demand for biodiesel.

5

More palm oil was produced in 2018 than was consumed. This abundant supply led to a stockpile of three million tonnes. When first planted, palm trees can take up to 30 months to produce fruit. The fruit can then be harvested twice a year and converted into palm oil.

Extract B Palm oil production

Palm oil production more than tripled between 1998 and 2018. It is now used in many goods including processed foods, cosmetics, detergents, chocolate and biodiesel.

Palm oil requires one-tenth of the land, one-seventh of the fertiliser and only one-sixth of the energy to produce the same amount of oil as soybean. In Indonesia and Malaysia more than 4.7 million workers are employed directly in the palm oil industry. A further 11 million workers are employed indirectly.

5

The rapid and poorly managed expansion of production has caused large-scale deforestation. The clearing and burning of tropical rainforests has also caused significant greenhouse gas emissions.

10

Palm oil production in Indonesia and Malaysia has led to habitat and biodiversity loss. Endangered animals have been negatively affected. For example, between 2001 and 2017 the population of orangutans fell by 100 000 in these countries. Orangutans spend 95% of their time in trees and Indonesian rainforests have been disappearing rapidly. In western Indonesia 69% of elephant habitats have been lost and there are only 100 rhinos left in the wild.

15

12 (a) Define the term 'equilibrium' (Extract A, line 2).

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(b) With reference to Extract A, explain the impact of the availability of substitutes on the price elasticity of demand for palm oil.

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- 10** The cross elasticity of demand for tea with respect to a change in the price of coffee is +0.52. Between March 2019 and March 2020 the price of coffee increased by 32%.

Ceteris paribus, calculate the percentage change in the quantity demanded of tea following the change in the price of coffee. Show your workings.

(Total for Question 10 = 4 marks)



10 In 2019 Netflix increased the price of its basic subscription streaming service from \$7.99 to \$8.99 in the USA. It was estimated that there would be an 8% decrease in the number of consumers with Netflix subscriptions.

Ceteris paribus, calculate the price elasticity of demand for the basic subscription for Netflix. Show your workings.

(Total for Question 10 = 4 marks)



9 In the USA the price elasticity of demand for residential natural gas is -0.1 .

Explain **one** reason why the price elasticity of demand for residential natural gas is only -0.1 .

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

(Total for Question 9 = 4 marks)



11 The cross elasticity of demand for meat with respect to fish is estimated to be +0.13 in Bangladesh.

Explain the likely impact of a 10% increase in the price of fish on the demand for meat in Bangladesh.

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS



10 In February 2021, British Gas increased the price of gas by 22%. As a result, the number of British Gas customers decreased by 350 000 to 17 000 000.

Ceteris paribus, calculate the price elasticity of demand for gas from British Gas. Show your workings.

[illegible]

(Total for Question 10 = 4 marks)



11 The cross elasticity of demand of milk with respect to sugar-sweetened drinks is +0.25.

Explain the likely impact of a 5% increase in the price of sugar-sweetened drinks on the market for milk.

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS



10 The table shows average household income per month in Singapore and the total quantity of cinema tickets purchased by its citizens in 2020 and 2021.

Year	Average household income	Quantity of cinema tickets
2020	S\$ 4 022	4.7 million
2021	S\$ 4 166	7.6 million

(Source: adapted from <https://www.statista.com/statistics/199983/us-vehicle-sales-since-1951/> and [https://dqydj.com/individual-income-by-year/#:~:text=Average%20Individual%20Income%20by%20Year%20%20%20Year,%20%20%2463%2C214.03%20%2056%20more%20rows%20\)](https://dqydj.com/individual-income-by-year/#:~:text=Average%20Individual%20Income%20by%20Year%20%20%20Year,%20%20%2463%2C214.03%20%2056%20more%20rows%20))

Ceteris paribus, calculate the income elasticity of demand for cinema tickets. Show your working.

(Total for Question 10 = 4 marks)



SECTION B

Answer ALL questions in this section in the spaces provided.

- 7** In Laos consumers' real incomes decreased by 12.32% during 2021. The income elasticity of demand for a domestic holiday was +1.36.

Draw a diagram to illustrate the likely impact of this change in consumers' real incomes on the equilibrium price and quantity for domestic holidays in Laos.

(Total for Question 7 = 4 marks)



SECTION C

Study Figures 1 and 2 and Extracts A and B in the Source Booklet before answering Question 12.

Write your answers in the space provided on the following pages.

- 12** (a) Define the term 'price elasticity of demand'. (Figure 2) (2)
- (b) Between 2020 and 2021 real incomes increased by 6.8% in Beijing.
With reference to Figure 2, explain whether chicken is a normal good or an inferior good. (4)
- (c) With reference to Figure 1 and the first paragraph of Extract A, analyse **one** demand reason and **one** supply reason why the price of chicken increased by 147% between May 2020 and May 2022.
Illustrate your answer with a supply and demand diagram. (6)
- (d) With reference to the second and third paragraphs of Extract A, examine **two** external costs associated with chicken production. (8)
- (e) With reference to Extract B and your own knowledge, discuss the impact of the introduction of an indirect tax on 'junk food'.
Illustrate your answer with an appropriate diagram. (14)



Sources for use with Section C

The markets for chicken and 'junk food'

Figure 1

Global price of chicken, \$ per kilogram, May 2020 to May 2022

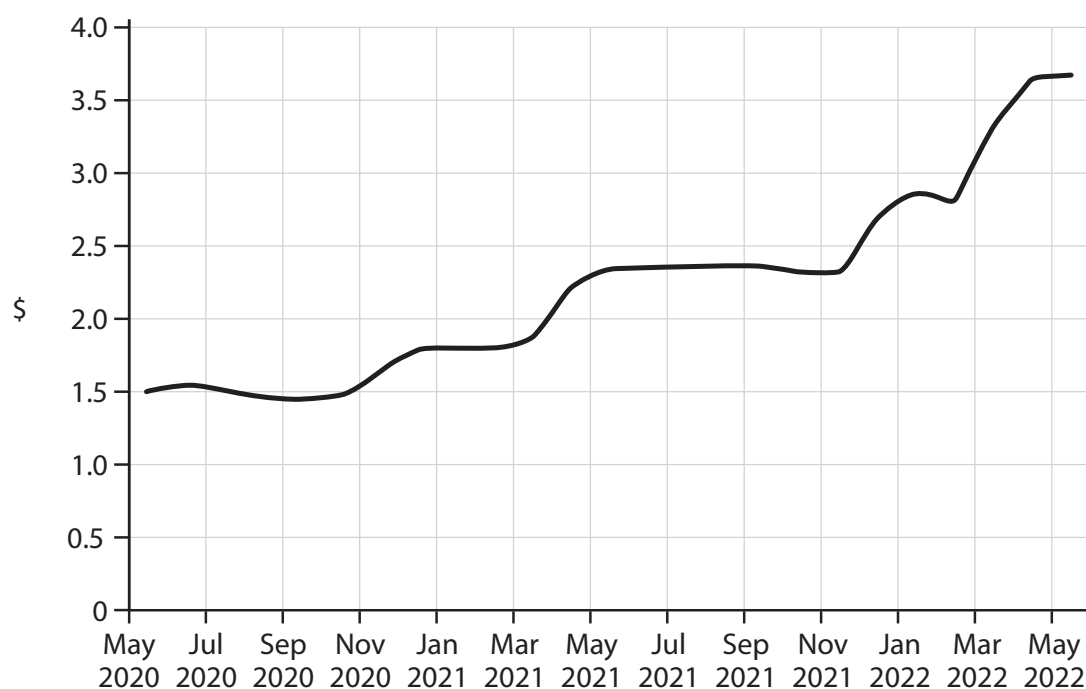


Figure 2

Estimated price elasticity of demand and estimated income elasticity of demand for chicken in Beijing, China for 2021

Price elasticity of demand	-0.55
Income elasticity of demand	+1.04

Extract A The global price of chicken

Between May 2020 and May 2022 the price of chicken increased by 147%. Problems in corn and wheat production resulted in a 20% increase in the cost of chicken feed. In addition, an outbreak of bird flu meant that, between October 2021 and December 2022, 140 million chickens globally could not be sold for consumption. At the same time, chicken became a more popular choice for consumers because it is considered to be a healthier option than other meats. 5

The production of one kilogram (kg) of chicken:

- uses 957 litres of water
- uses 0.9kg of grain to feed the chickens
- produces 0.7kg of carbon dioxide. 10

Globally, 345 billion kg of chickens are produced per year. Consequently, chicken production has a substantial impact on the environment. However, compared to 1965, producing the same amount of chicken has a 50% less negative impact on the environment. 15

Extract B ‘Junk food’ consumption

‘Junk food’ is a term used for foods that are high in calories, salt, sugar or fat and are low in nutrients. It includes burgers, fried chicken, pizza, chips and ice cream. Between 2020 and 2021, the global market for fast food (that includes junk food) grew from \$862 billion to \$972 billion and it is expected to grow further to \$1 467 billion by 2028. The World Health Organization (WHO) estimated that junk food contributed to 770 million people being obese in 2020. By 2030 it estimates that there will be over 1 billion obese people. Obesity increases the risk of cancer, heart disease and diabetes. In developed countries, treating obesity-related issues accounts for 8.4% of expenditure on healthcare. 5

Several governments have introduced taxes on junk food. For example: 10

- In 2011 the Government of Denmark introduced a tax on foods containing high levels of fat. This caused an increase in the price of these foods and resulted in job losses. As a result, the Government abandoned this tax in 2012
- In 2011 the Government of Hungary imposed taxes on food containing high levels of salt and sugar. This resulted in a 73% reduction in consumption of these foods. Demand for bottled water, fruit and vegetables increased 15
- In 2013 the Government of Mexico introduced a tax on high-calorie foods. This resulted in a 7% decline in junk food consumption between 2013 and 2018.

The WHO has recommended that more countries should introduce indirect taxes on junk food as a means of improving health. 20

12 (a) Define the term 'price elasticity of demand'. (Figure 2)

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(b) Between 2020 and 2021 real incomes increased by 6.8% in Beijing.

With reference to Figure 2, explain whether chicken is a normal good or an inferior good.

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SECTION C

Study Figures 1 and 2 and Extracts A, B and C in the Source Booklet before answering Question 12.

Write your answers in the spaces provided on the following pages.

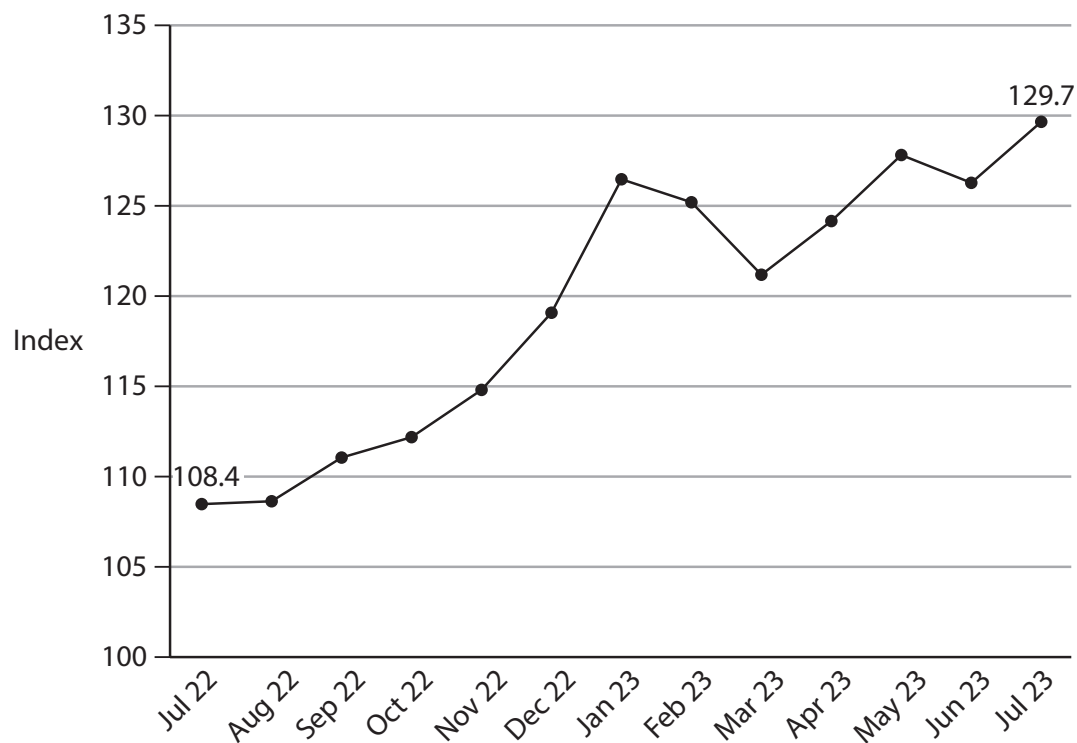
- 12** (a) Define the term 'capital goods'. (Extract C, line 5) (2)
- (b) With reference to Figure 1 and Extract A, analyse **two** reasons why the price of rice increased between July 2022 and July 2023.
Illustrate your answer with a supply and demand diagram. (6)
- (c) With reference to Figure 2, explain whether demand for **each** of the four selected food groups is price elastic or price inelastic. (4)
- (d) With reference to Extract B, examine **two** external costs associated with rice production. (8)
- (e) With reference to Extract C, discuss the benefits of subsidies paid to rice growers.
Illustrate your answer with an appropriate diagram. (14)



Sources for use with Section C.

The market for rice

Figure 1: Index of the world price for rice, July 2022 to July 2023 (July 2016 = 100)



Extract A Rice price rising

The global price of rice increased by over 19.6% between July 2022 and July 2023. Rice consumption in Africa and Asia is growing rapidly, as populations increase and incomes rise. In 2022 the population grew by 2.45% in Africa and by 0.83% in Asia. This compared to a 0.06% increase in Europe. In 2022 average real income growth was approximately 4% in Asia and 3.85% in Africa. In advanced economies the average increase in real incomes was only 2%.

5

Figure 2: Estimated price elasticities of demand in Japan for selected food groups

Food item	Estimate of price elasticity of demand
Vegetables	-0.77
Fish	-0.70
Meat	-0.52
Rice	-1.82

Extract B The impact of rice production

Rice production contributes 12% of global methane emissions and 1.5% of all greenhouse gas emissions. Vietnam's paddy fields, where the rice is grown, produce more carbon emissions than the country's transportation network.

Producing one kilogram of rice requires 2 500 litres of water. Rice production uses over 33% of the world's irrigation water. 5

Rice growers often use an insecticide to protect the crop from insects. In the USA these insecticides contributed to a 44% decline in the bee population in 2020.

On average, 90% of rice is consumed in the country in which it is grown. This limits the environmental damage caused by transporting rice abroad. 10

Extract C Indian Government intervention in the market for rice

The rice sector contributes \$51.58 billion to the Indian economy. India exports rice to 150 countries.

The Government supports rice growers by providing subsidies. These subsidies are used by farmers to invest in capital goods and to purchase fertiliser and water used in production. This can lead to over-farming that results in lower quality rice crops. 5

In 2021 the Indian Government spent \$6.9 billion on subsidising rice production.

In 2022 the Government decided to reduce expenditure on these subsidies. However, this caused mass protests from farmers that led to the Government increasing these subsidies to their previous levels. 10

(c) With reference to Figure 2, explain whether demand for **each** of the four selected food groups is price elastic or price inelastic.

(4)



MARK SCHEMES

official mark schemes, in the same order as the questions



4	–	The only correct answer is C A is not correct because if consumers were good at computation they would calculate the benefits of switching and be more likely to switch B is not correct because if they maximised utility they would switch to the cheaper deal D is not correct because if consumers feel valued by alternative providers they would switch to them	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because this area represents part of the fall in total revenue for firms B is not correct because total revenue falls by the area P_eUVP_1 and VUQ_eQ_1 C is not correct because this area shows producer surplus and not consumer surplus	(1)
6	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because this represents the total government spending C is not correct because this is the total revenue earned by firms from customers D is not correct because this is the total revenue earned by firms from both customers and the government subsidy	(1)

Section A

Question Number	Quantitative skills assessed	Answer	Mark
1	–	The only correct answer is B A is not correct because statement 2 is normative and not positive C is not correct because statement 1 is positive and not normative D is not correct as statement 1 is positive and statement 2 is normative	(1)
2	–	The only correct answer is C A is not correct because if consumers were good at computation they would calculate that they could save 20% and switch B is not correct because if people aimed to maximise utility they would switch as the money they have could be spent on other goods D is not correct because if consumers felt undervalued by their current provider they would be more likely to look for a provider that does value them	(1)
3	–	The only correct answer is A B is not correct because this is a function of the price mechanism C is not correct because this is government failure D is not correct because this is the government correcting the market failure	(1)

Section A

Question	Quantitative skills assessed	Answer	Mark
1	–	The only correct answer is D- To introduce a tradeable pollution permit scheme to reduce external costs A is not correct because rationing occurs without government intervention within the price mechanism B is not correct because indirect taxes would be used for goods with external costs C is not correct because subsidies would be paid to encourage external benefits	(1)
2		The only correct answer is B- Consumers aiming to maximise utility A is not correct because being valued by the original supplier would mean they would not change supplier C is not correct because being poor at computation would mean they cannot calculate the benefit from changing supplier and would not change D is not correct because changing supplier will save money that can be used to gain utility from purchasing other goods	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C- The demand for refrigerators is price inelastic A is not correct because the demand for clothes dryers is price inelastic B is not correct because the price elasticity of demand for dishwashers is not zero D is not correct because washing machines have price inelastic demand	(1)
4	QS6: Calculate total revenue QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A- Total revenue will rise by €13 500 B is not correct because €58 500 is the total revenue after the price is reduced to €1.30 C is not correct because revenue will rise as demand is elastic in this section of the demand curve	(1)

		D is not correct because a decrease in price will result in a fall in total revenue/from £1 050 to £800	
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because if consumers experienced habitual behaviour they would remain with their existing supplier C is not correct because if consumers are poor at computation, they would not be able to calculate their savings from switching D is not correct because a rational consumer maximises utility	(1)
6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because income increases and quantity demanded increases so this would result in a positive YED value B is not correct because the calculation is the wrong way round and with both positive values needs a positive answer C is not correct because the calculation is the wrong way round	(1)

		B is not correct because at point Y there are fewer capital goods so the growth rate will be slower. D is not correct because the movement to Y results in a gain of 25 consumer goods	
5		The only correct answer is D A is not correct because this is an example of poor computation B is not correct because they are more likely to switch if they do not feel valued C is not correct because this is an example of herding/being influenced by others' behaviour	(1)
6	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because this is the producer incidence C is not correct because this is the tax revenue earned by the government/includes both consumer and producer incidence D is not correct because this multiplies the Sol 0.60 by the wrong quantity (380 000)	(1)

Section A

Question	Quantitative skills assessed	Answer	Mark
1		The only correct answer is C A is not correct because it is the government's role to collect tax revenues B is not correct because financial markets have no role in minimising utility D is not correct because the government provides public goods	(1)
2	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because if consumers felt undervalued they are more likely to leave B is not correct because if consumers have good computational skills they will calculate the fact they are paying £108 more C is not correct because the free-rider problem relates to the underprovision of public goods	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because the demand for the railway tickets in Guadalajara is price inelastic C is not correct because an increase in the price of railway tickets in Monterrey will increase total revenue D is not correct because there is no data on income provided	(1)



Section A

Question	Quantitative skills assessed	Answer	Mark
1		The only correct answer is A B is not correct because private goods are excludable C is not correct because private goods are rival D is not correct because this describes a public good	(1)
2	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because legal constraints on production will affect elasticity of supply B is not correct because large stocks will affect elasticity of supply C is not correct because a product with many substitutes will result in highly elastic demand	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because the PED value is between -1 and -infinity C is not correct because there is no data on the change in income D is not correct because there is no data on the change in income	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because both consumer surplus and price will increase B is not correct because consumer surplus will increase D is not correct because price will increase	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because if consumers experienced inertia they would not have used the energy to cancel their subscription B is not correct because if consumers experienced habitual behaviour they would keep their Amazon subscription D is not correct because rational consumers maximise their utility by switching	(1)

Section A

Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because this is a government failure C is not correct because this is a government failure D is not correct because the market is functioning efficiently	(1)
2	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because the maximum price is below the equilibrium so resulting in excess demand, not excess supply B is not correct because the maximum price is below the equilibrium so resulting in excess demand, not excess supply C is not correct because the higher price results in a contraction of demand and an extension of supply so excess demand decreases	(1)
3	QS2: Calculate, use and understand percentages, percentage changes and percentage point changes QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because the consumers would buy fewer products to maximise utility C is not correct because habitual behaviour would not result in consumers buying fewer products D is not correct because poor computational skills mean consumers would not be able to calculate the savings and would not buy fewer products	(1)

Question	Explain one reason why many consumers behave in this way and remain with their current internet providers.	Mark
	Answer	
9	Knowledge 1, Application 1, Analysis 2 Knowledge & Analysis 1 mark for knowledge and a further 2 marks for linked analysis e.g.: • Irrational behaviour is where consumers fail to maximise their utility (1) • Rational behaviour is where consumers maximise their utility (1) • People may be influenced by others' behaviour (1) where they stay with the same provider because their friends and family do (1) • People exhibit habitual behaviour (1) where they have used the same internet provider and are in a habit of using them/ loyal to the provider (1) • Consumers experience inertia (1) where they lack the energy or desire to go through the process of switching internet providers (1) • Consumers have poor computational skills (1) meaning they find it difficult to calculate the amount they can save by switching (1) • Consumers feel valued by current internet providers (1) so remain loyal to them (1) • Consumers may not have information about the possible savings (1) and therefore may be unaware that they could get a better deal by switching provider (1) Application Up to 1 mark for applying to Canada's internet providers, e.g.: • Consumers can save 25% by switching to smaller providers (1) • Consumers tend to stay with more expensive providers (1)	(4)

Section C

Question Number	Answer	Mark
12 (a)	Knowledge 2 Up to 2 marks for defining a 'renewable resource', e.g.: • A resource that can be used again and again (1) • A resource that does not deplete with use (1) • A resource that does not run out (1) • A resource that is naturally replenished (1) • A resource that is infinite (1) • An example is hydroelectricity (1) NB: do not reward other examples not in Extract B	(2)

Question Number	Answer	Mark
12 (b)	Knowledge 2 Application 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 2 marks for definition of rational decision making: • Rational decision-making is where consumers maximise (1) utility/benefits/satisfaction (1) Application Up to 2 marks for application to Extract B: • Consumers would purchase the E-Golf/ With added indirect taxation the VW Golf is more expensive than the subsidised electric VW Golf (1) • Consumers will save money on the purchase of an electric car/on the lower running and fuel costs which can then be spent on other goods and services that gain utility (1)	(4)



Question	With reference to switching banks, explain the difference between 'herding' and 'inertia'.	Mark
	Answer	
8	Knowledge 2, Application 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for understanding of 'herding' - Where consumers make choices based on the decisions of others /friends/family (1) 1 mark for understanding of 'inertia' - Where people think the effort of switching is too great / are too lazy to switch (1) Application 2 marks for reference to data - Herding - 39% use the same bank as their parents (1) - Inertia - 13% said that switching was too much time and effort (1)	(4)



Question	With reference to this information, explain what is meant by 'rational decision making'.	Mark
8	Answer	
	Knowledge 2, Application 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for understanding of 'rational decision-making' - Where consumers maximise utility/satisfaction/benefit where producers maximise profit (1) 1 mark for link to how behaviour is rational - Switching to cheaper alternatives for better value (1) - Customers want to avoid the new higher prices (1) - By spending less enabling them to purchase other goods (1) - Consumers are good at computation so can calculate the savings from buying alternative products (1) - Consumers lack loyalty/habitual behaviour so when they see a better deal they will be happy to switch (1) - The higher price results in a smaller decrease in quantity demanded so revenues will rise (1) - If the increase in revenue is greater than the change in costs then profits will increase (1) Application Up to 2 marks for reference to data 6.8% decrease in the number of items sold (1) - Increase in total costs of €4.4 billion (1) - Unilever increased prices, on average, by 13.2% in response to higher costs (1)	(4)

Section D

Question Number	In 2016 it was reported that 50% of gas and electricity consumers in the UK have never switched energy suppliers. It is claimed that those consumers who did switch suppliers saved up to £200 each per year. Evaluate the reasons why many consumers do not switch energy suppliers.
13	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Rational consumers – will maximise their utility. • Irrational consumers – fail to maximise utility. • They will maximise their utility by switching gas and electricity suppliers as they would save £200- they could use this money to purchase other goods and services to increase their utility- customers are not acting rationally. • The influence of other people's behaviour (herding) may mean people do not switch as their friends may also avoid switching/ their friends and family may use a supplier so they continue to do so too. • Habitual behaviour- customers will have used their gas and electricity supplier and will continue to use them as they are used to doing so/ they become loyal to their gas and electricity supplier. • Inertia- customers may not have the energy to go through the process of searching for and transferring to another supplier. • Poor computational skills may exist where they cannot calculate the £200 saving from switching. • Customers may feel valued by their current supplier so they continue to remain with them. • Other benefits may exist from remaining with a provider such as loyalty schemes. • Asymmetric information/ information gaps may exist where customers do not have enough information to calculate possible benefits. • Customers may trust a provider more and receive better customer service and be willing to pay the extra to receive their level of service. • Suppliers of gas and electricity that keep more customers may advertise or brand more. • For some customers on higher income/ wealthier the proportion of their income devoted to gas and electricity bills is relatively low so the likely savings are relatively insignificant. • When switching, the process may not go smoothly so people do not feel confident about switching.



Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context, using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
		Evaluation (8 marks) – indicative content • Magnitude – depends on the proportion of total gas and electricity bills that the £200 saving makes up. • Time frame – in the short-term people may not react to the lower prices elsewhere but over time they may be able to react. • People may have signed up to contracts which mean they have to wait before they can benefit from the savings. • £200 is an average and for many they may save much less. • Some customers may not be offered the better deals. • Governments have attempted to make it easier to switch with less difficulty so more may switch. • Maximum price controls may reduce the need or incentive to switch. • Websites are available that make it easier to switch/ provide information on the savings you can make which should encourage more to switch. • Businesses now have make it easier to compare the different



		providers pricing making bills less complex. • 50% have never switched but the other 50% have so this is not an issue for all customers.
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.



Question Number	In 2017 floods in Bangladesh resulted in 8 million people having to move from their homes. 100 000 houses were destroyed and many crops were lost. The Institute of Water and Flood Management claim that there had been an under-investment in flood defences. Evaluate reasons for this under-investment in flood defences. Make reference to public goods in your answer.
14	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Public goods defined- non-rival and non-excludable. • Non-rival: one person's consumption does not negatively impact on another consumption. • Non-excludable: one person's consumption does not prevent another from consuming. • Flood defence is a public good as ◦ If flood defence is in place then protecting one house does not prevent the protection of another house ◦ If flood defence is protecting one house it does not reduce the protection offered to the next house • Free riders: if one person puts in place flood defences others will benefit. • This means private individuals are unlikely to contribute to flood defences, as they know they would benefit anyway if they do not contribute/ or that others would benefit if they did. • This leads to an under-provision and under-investment in the public good of flood defences. • This is an example of market failure as there is an inefficient allocation of resources. • The cost of flood defences may exceed the costs of damage from flooding. • There may be imperfect market information- where people do not know the benefits of flood defence/ costs of not putting in place flood defences. • May be a lack of Government funds to afford flood defences/ May be difficult to effectively defend against flooding. • Bangladesh is a low-income country and finance for flood defences is limited. • May lack technology/ engineers to put in place flood defences

Question Number	Indicative content
14	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Asymmetric information- where one party has more information than another • Information gap- where consumers lack information about the risks of being uninsured • 10 million consumers not taking out travel insurance may lack information to make decision to be insured • 30% of consumers have to make a claim, yet many do not take out insurance – consumers may not be aware about the numbers that need to claim • £5 620 average medical bill claim-consumers unlikely to be aware of these costs when travelling abroad • The lack of information could lead to underconsumption compared to social optimum quantity of output • Without insurance if someone had a plane cancelled they would have to pay for replacement travel/if injured they would have to pay for their own medical treatments • Consumers may lack funds/ face high opportunity costs- have to give up consumption of other goods • Rational consumers maximise utility • The decision not to insure may be based on the assessment of risks, benefits and costs of insurance - may be rational behaviour • It may be rational decision given high costs associated with taking out travel insurance • Irrational consumers do not maximise utility • Decision not to insure may be due to computational issues/ inertia/ herding/ habitual behaviour in not purchasing • Lack of perfect information means consumers unable to assess decision

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
	Evaluation (8 marks) – indicative content - Information gaps may be filled by insurance companies and governments sharing information on costs - Internet helps provide better information on likely costs if a consumer has an accident on holiday - Some of the 10 million not taking insurance may be on low risk/ short holidays and be less likely to insure - May be rational as some may perceive the likelihood of successfully making a claim to be low - Magnitude- 10 million is a large number of consumers not taking out insurance/ may be a smaller numbers compared to the number of travellers in a given year	

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Section D

Question Number	Indicative content
13	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Quantitative skills assessed QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge, application and analysis (12 marks) – indicative content • ‘Irrational behaviour’ - where consumers fail to maximise utility • A consumer could save on average AUS\$1 000 Reason consumers are irrational • 30% of consumers do not switch due to the effort required • Inertia - where the consumer does not want to put in the effort to be able to move • 22% do not switch because they lack the necessary information • Information failure - where a lack of information means the consumer may not realise the saving they can make by switching electricity supplier • Poor computational skills - it is difficult to calculate the savings that can be made by moving to a different electricity supplier • The influence of other people's behaviour (herding) - consumers may remain with suppliers because their friends and family use the same supplier • Habitual behaviour - where consumers use a supplier for a period of time and continue to use them out of habit • The need to feel valued - the current supplier may make them feel valued so they continue to buy from them despite the higher price • Framing and bias - people make a decision based on the way the options are presented to them- so may be persuaded to take the more expensive supplier because the way the supplier sold it to them

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context, using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.

Evaluation (8 marks) – indicative content Reasons the decision is rational: • There may be costs of substituting between suppliers • Not switching may be a rational decision- other factors beyond price may determine decision e.g. quality of service • Contracts may exist which mean consumers are unable to switch until the contract expires • Consumers may choose electricity based on other factors- e.g. ethical stance of the company, if they use renewable energy • Consumers may have a supplier providing dual fuel (gas and electricity) that offer discounts • High income earners will find AUS\$1 000 to be an insignificant saving over a year and it is rational not to switch as it is a small proportion of their earnings Other evaluative comments: • Measurement problem - difficult to measure the precise size of the benefit which may vary for different consumers • Magnitude - large benefit may create an incentive for more to substitute • Time - over time consumers may realise the benefits of substituting suppliers		
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question	Evaluate ways that would encourage and enable consumers to make rational decisions.
14	Indicative content QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Define rational decisions- where consumers maximise utility/welfare/satisfaction • Utility- satisfaction achieved by consumers • Banking 50% never moved banks- despite paying AUD1500 more per year • Broadband loyal customers pay 12% more than those that switch in UK Barriers to rational behaviour and ways that would encourage and enable consumers to make rational decisions • The influence of other people's behaviour (herding) ○ Ensure banks/electricity/gas/broadband providers explain the best deal available to them ○ Hopefully as they switch to better deals will advise other people to switch too • Habitual behaviour ○ Provide information on the costs of loyalty e.g. AUD1500/ 12% higher price ○ Other providers might offer incentives to switch- bonuses/ cash payment • Inertia ○ Regulation and laws ensure banks and electricity/gas/broadband suppliers provide tariff information so that consumers can easily compare tariffs ○ Comparison sites then compare deals on different networks and the process happens automatically without any effort from the consumer • Poor computational skills ○ Provision of websites- which calculate savings and compare banks/electricity/gas/broadband suppliers deals ○ Regulation and laws that insist banks and electricity/gas/broadband suppliers provide information on their best deals and are clear about the tariff they are on • The need to feel valued ○ Other providers may provide incentives- bonuses

	Other ways to encourage rational behaviour • Subsidies provided to comparison sites- lowering their costs and enabling them to provide more support to consumers • Subsidising smaller banks outside big 4 to enable them to advertise to gain more consumers with better deals • The government could introduce a maximum price if it is felt the price is too high- reduces the price but does not necessarily improve rationality. • State provision- e.g. Government provide electricity and gas to prevent consumers from being overcharged • Regulation- to ensure that banks/electricity/gas/broadband providers have rules that make it harder for them to exploit. • Support companies to provide information to help consumers to make rational decisions • Provision of information so people are aware of costs/benefits of switching so better able to make rational decisions Answers must look at ways to encourage rational behaviour to access Level 2	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
	Evaluation (8 marks) – indicative content • Different consumers will be able to save more or less than this amount • Some may save much less and therefore it is rational to stay with the current provider • Automatic switching may not always work and could cost the consumer as they may not be switched to the lowest priced deal	

		• Websites- may be captured by industries paying them incentives to highlight their deals despite them not being the best deal • Other providers may provide incentives- bonuses which add to the costs of the business reducing profitability • Subsidies create an opportunity cost and this might be better spent on improving efficiency of energy generation • A maximum price reduces the price but does not necessarily improve rationality • State provision- costly for the government and without competition they may be less efficient • Regulation- even with these rules consumers may not be able to calculate or have inertia and therefore still not switch • Provision of information may be ignored as people follow others or have inertia • People may in fact be acting rationally- there may be other loyalty schemes, customer service, quality benefits of their loyalty • A lower price is not always the best/rational choice as quality and after sales service need to be considered
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Section D

Question	In 2022 consumers in the UK who did not switch suppliers for different services at the end of their contracts were paying a total of £1.3 billion more than those consumers who chose to switch suppliers. It is estimated that this applied to: • 630 000 consumers with mortgages • 1.5 million consumers with mobile phone contracts • 7 million broadband consumers. Evaluate possible reasons why consumers did not switch suppliers for these services. Indicative content
13	Quantitative skills assessed QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Definition of rational consumers – consumers who maximise utility • Definition of irrational consumers- consumers who fail to maximise utility • Consumers who did not switch suppliers for different services at the end of their contracts were paying £1.3 billion more than those who did switch suppliers • Affected 630 000 consumers with mortgages/1.5 million consumers with mobile phone contracts/7 million broadband consumers • Prices may have been increased by all providers- so less benefit from switching • Information failure- where there is asymmetric information- where one party (bank/mobile provider/ broadband provider) has more information than another (consumer) or there is an information gap where consumers do not have information • Complexity of bills makes it hard to compare options to see if better deals exist • Some consumers may have been unable to switch as they were locked into long/fixed-term contracts Reasons why consumers may not aim to maximise utility: • The influence of other people's behaviour (herding) – consumers may stay with the bank/mobile/broadband provider that their parents/ friends/ peers are using • Habitual behaviour- consumers may be used to using a brand, be in a habit of purchasing from a supplier and have loyalty • Inertia- consumers may not want to spend the time and effort finding a better deal- so they stay with a supplier that charges them more • Poor computational skills- the consumers may not be able to calculate possible savings from switching or the costs of the current deal, therefore they do not know how much they could save • The need to feel valued- consumers may feel valued by their current provider/ they may be part of loyalty schemes / they value the level of customer service offered • Framing and bias- when the information on service options is framed in a way that makes consumers select the more expensive option

N.B. Award a maximum of level 3 if only one reason is given N.B. Award a maximum of level 3 if there is no reference to these services		
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models. Use of generic material or irrelevant information or inappropriate examples. Descriptive approach, which has no chains of reasoning.
Level 2	4–6	Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models. Limited application of knowledge and understanding to economic problems in context. A narrow response or superficial, only two-stage chains of reasoning in terms of cause and/or consequence.
Level 3	7–9	Demonstrates accurate knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer. Analysis is clear and coherent. Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.
Level 4	10–12	Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models. Ability to link knowledge and understanding in context using appropriate examples which are fully integrated to address the broad elements of the question. Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.
Evaluation (8 marks) – indicative content - Information gaps have been reduced- by provisions of information from suppliers that have been enforced by regulators/ government - The influence of other people's behaviour (herding)- it may be that family and friends are helping each other make more rational decisions - Habitual behaviour- often this loyalty is rational as it comes from good levels of customer service - Inertia- websites now exist that will make comparisons for consumers and enable them to switch more easily - Poor computational skills – banks/ providers have often been made to make information clearer/ websites exist that help calculate the costs of different options - The need to feel valued- information on customer service is increasingly freely available may encourage customers to switch to those offering better customer service if consumers feel this will result in them being more valued - Framing and bias- competition authorities will challenge providers who mislead by framing the options in a better light - The decision to not switch may be rational- e.g. if all bank providers increased charges		

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	4–6	Evidence of evaluation of alternative approaches. Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	7–8	Evaluation recognises different viewpoints and/or is critical of the evidence, leading to an informed judgement. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

Question	The division of labour applies to many types of production and occupation, including: • in the textile industry, workers are responsible for specific parts of the production process • in healthcare, workers have different roles including doctors, nurses, cleaners and administrators. Evaluate the advantages of the division of labour for businesses and workers. Refer to an industry of your choice in your answer. Indicative content
14	Quantitative skills assessed QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make, but this does not imply that any of these must be included. Other relevant points must also be credited. Knowledge, application and analysis (12 marks) – indicative content • Division of labour-breaking down production into tasks and each task is completed by a different worker • In textile production, one worker might focus on cutting, sewing, dyeing, packaging - enabling them to become experts at that job • In healthcare: ◦ doctors performing specialist operations ◦ nurses providing personal care ◦ cleaners ensuring safe and secure environment ◦ administrators completing paperwork • Firms that use the division of labour will find output increases as workers specialise in different jobs • The productivity improves as output per worker rises because workers do not need to keep changing tasks • With rising output per worker on the same pay costs to make each product will fall • More efficiency as less resources/time are wasted • With lower costs per unit the firms may be able to charge a lower price/ generate higher profit per sale • Some tasks can be simplified such that a machine can do the job- this automation may result in reduced labour costs • Workers need to be trained on fewer tasks, reducing the time spent on training and therefore reducing cost of training • Healthcare workers can train in a more specialised area/for more hours so can develop expertise and become more skilled • Workers can focus on jobs that best fit their abilities, thereby making them more productive and employable • As workers become more expert in that one task, they can demand higher salaries/wages e.g. cardiologists, paediatricians, surgeons N.B. Award a maximum of level 3 if there is not reference to both business and workers

Section A

Question	Quantitative skills assessed	Answer	Mark
1	–	D	(1)
2	–	A	(1)
3	–	B	(1)
4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	D	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	C	(1)
6	QS8: Make calculations of elasticity and interpret the result	A	(1)

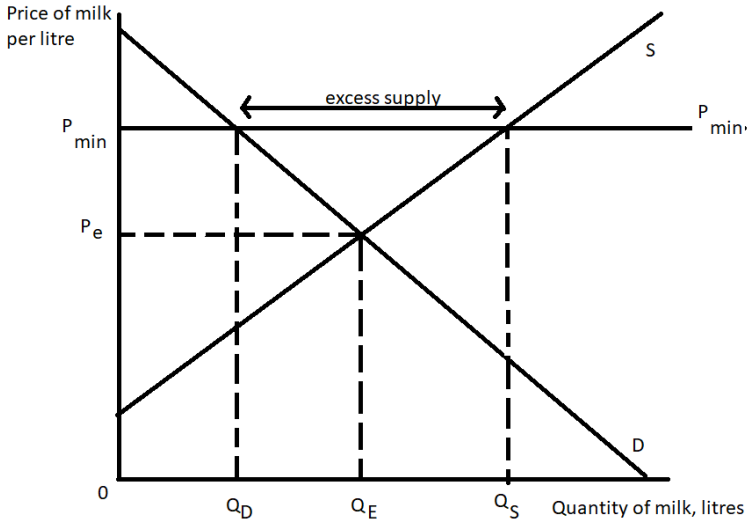
Section A

Question Number	Quantitative skills assessed	Answer	Mark
1		The only correct answer is B <i>A is not correct as this is successful government intervention</i> <i>C is not correct as this is market failure</i> <i>D is not correct as this is market failure</i>	(1)
2	–	The only correct answer is C <i>A is not correct as this economy only has price mechanism allocating resources</i> <i>B is not correct as this economy only has the government allocating resources</i> <i>D is not correct as this is where firms do not maximise profit and consumers do not maximise utility</i>	(1)
3	–	The only correct answer is D <i>A is not correct as forwards markets are found for commodities and currencies</i> <i>B is not correct as forwards markets are found for commodities and currencies</i> <i>C is not correct as forwards markets are found for commodities and currencies</i>	(1)
4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B <i>A is not correct as utility is maximised at 4 glasses of milk</i> <i>C is not correct as consumption of the fifth glass results in decreasing marginal utility</i> <i>D is not correct as utility is maximised at 4 glasses of milk</i>	(1)

6	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because the utility is maximised at four glasses of fruit juice C is not correct because diminishing marginal utility sets in at the fourth glass D is not correct because the consumer experiences maximum utility with the fourth glass	(1)
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Section B

Question	Draw a diagram to illustrate the impact of the introduction of a minimum price for milk in India.	Mark
	Answer	
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram • Original supply, demand and equilibrium price and quantity (1) Application Up to 3 marks for the following information included on diagram: • Minimum price set above the market equilibrium (1) • The quantity supplied and quantity demanded with the minimum price in place (1) • Clearly identifying the excess supply (1)  The prices Rs20 (P/P_e) or Rs30 (P_{min}) are also acceptable	(4)

Section A

Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because this occurs when there is increasing marginal utility B is not correct because diminishing marginal utility is not related to the supply curve D is not correct because diminishing marginal utility means the utility will rise at a slower rate as more of the product is consumed	(1)
2	QS2: Calculate, use and understand percentages, percentage changes and percentage point changes QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A the largest percentage decline in the use of the non-renewable resource was in the USA C is not correct because in all countries the use of the non-renewable resource decreased D is not correct because in all countries the use of the renewable resources increased	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because the data provided are for cross elasticity of demand and not income elasticity of demand C is not correct because unrelated goods would have an XED of zero D is not correct because complements have an XED which is negative	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because point Z is obtainable because it is inside the PPF	(1)

5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms QS10: Distinguish between changes in the level of a variable, and the rate of change	The only correct answer is C A is not correct because total utility is still rising B is not correct because total utility is still rising D is not correct because total utility is falling	(1)
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Section C

Question Number	Define the term 'substitutes' (Extract A, line 12).	Mark
12 (a)	Knowledge 2 Up to 2 marks for defining a 'substitute', e.g.: • A good that meets the same need as another product (1) so consumers can switch demand from one to the other (1). • A good with a positive cross elasticity of demand (1) such as tea and coffee (1). Other relevant examples are accepted. • Where the price of one good increases and the quantity demanded for another good increases/ where the price of one good decreases and the quantity demanded of another good decreases (1).	(2)

Section C

Question	Define the term 'substitutes' (Extract A, line 8).	Mark
	Answer	
12 (a)	Knowledge 2 Up to 2 marks for defining a 'substitute', e.g.: • Two goods that serve the same need. (1) • Consumers can switch between the two goods and receive similar benefits (1) • A good which has a positive cross price elasticity of demand (1) • Where the price of one product increases it leads to an increase in quantity demanded of the other product (1) • Example from Extract A: Vanilla and vanillan (1)	(2)

Section C

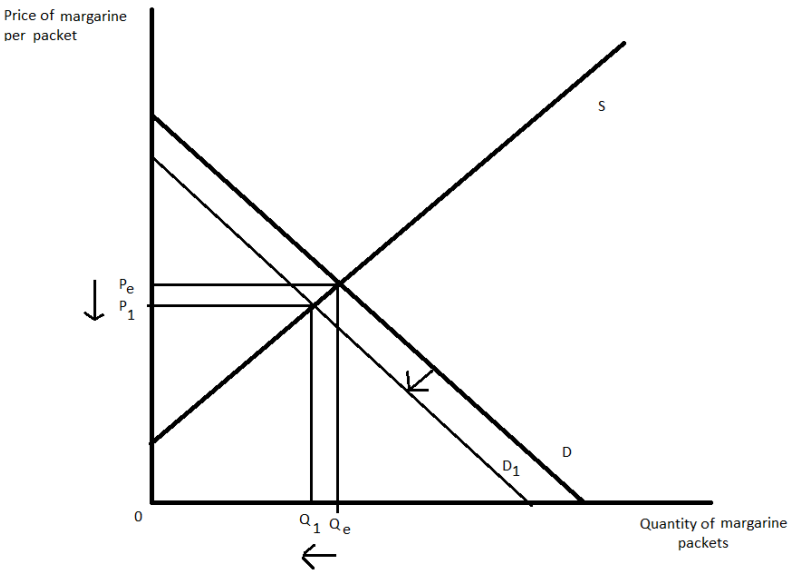
Question Number	Define the term 'substitutes' (Extract A, line 9).	Mark
	Answer	
12(a)	Knowledge 2 Up to 2 marks for defining a 'substitute', e.g.: • Two goods that serve the same need (1) • Consumers can switch between the two goods and receive similar benefits (1) • A good which has a positive cross elasticity of demand/XED above zero (1) • Where the price of one product increases and it leads to an increase in quantity demanded of the other product (1) • Example from Extract A: sugar and artificial sweeteners (1) • Where the price of sugar increases and it leads to an increase in quantity demanded of artificial sweeteners (1+1)	(2)

Section C

Question	Define the term 'complementary goods' (Extract A, line 8). Answer	Mark
12 (a)	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 2 Up to 2 marks for defining 'complementary goods', e.g.: • Goods that are used/consumed together/in joint demand (1) • Negative XED/XED value below 0 (1) • When the price of one increases the demand for the other decreases or when the price of one decreases the demand for the other increases (1) • Only accept explicit reference to Extract A: Tyres and cars are complementary goods (1)	(2)

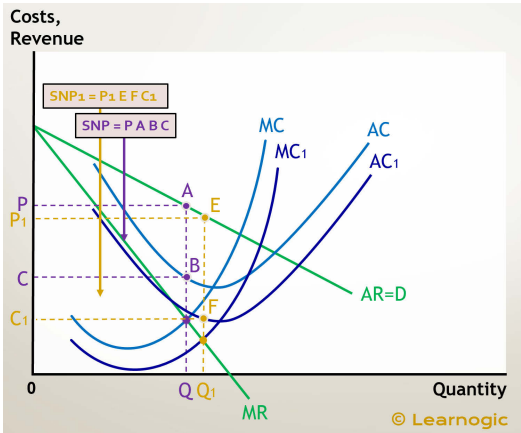
Question	Explain how the above table may be used to illustrate the concept of diminishing marginal utility. Use the last column in the table to show your workings. Answer	Mark																					
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for defining diminishing marginal utility / marginal utility - Diminishing marginal utility is where as a person increases consumption of a product, there is a decline in the marginal utility that person derives from consuming each additional unit of that product - Marginal utility is the change in utility after an increase in consumption of a good (1) Application 1 mark for the following table completed, at least showing where diminishing marginal utility occurs <table border="1" data-bbox="432 1048 1098 1368"> <thead> <tr> <th>Number of drinks</th><th>Total utility</th><th>Marginal utility</th></tr> </thead> <tbody> <tr> <td>1</td><td>15</td><td>-</td></tr> <tr> <td>2</td><td>32</td><td>17</td></tr> <tr> <td>3</td><td>52</td><td>20</td></tr> <tr> <td>4</td><td>73</td><td>21</td></tr> <tr> <td>5</td><td>85</td><td>12</td></tr> <tr> <td>6</td><td>90</td><td>5</td></tr> </tbody> </table> Analysis Up to 2 marks for likely impact - Luca experiences increasing marginal utility when increasing consumption from 1 to 2 drinks/ 2 to 3 drinks/ 3 to 4 drinks/ as the number of drinks moves from 1 to 4 the marginal utility increases from 17 to 21 (1) - Diminishing marginal utility starts when he moves from 4 to 5 drinks (1) marginal utility falls from 21 to 12/ as consumption increases from 5 to 6 marginal utility falls from 12 to 5/ as the number of drinks moves from 4 to 6 the marginal utility decreases from 21 to 5 (1)	Number of drinks	Total utility	Marginal utility	1	15	-	2	32	17	3	52	20	4	73	21	5	85	12	6	90	5	(4)
Number of drinks	Total utility	Marginal utility																					
1	15	-																					
2	32	17																					
3	52	20																					
4	73	21																					
5	85	12																					
6	90	5																					

Section B

Question	Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram • Original supply and demand and correctly labelled axes (1) Application Up to 3 marks for the following information included on diagram: • Leftward shift of demand (1) • Original equilibrium price and quantity (1) • New equilibrium price and quantity (1) 	(4)

Question	With reference to hotel breakfasts, explain why the above information illustrates 'diminishing marginal utility'.	Mark
8	Answer	
	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for understanding of 'diminishing marginal utility' - Where an additional unit of consumption leads to a smaller increase in utility/ where the marginal utility decreases/total utility increases but at a slower rate (1) Application 1 mark for reference to data 80% of hotel guests go to the buffet three times / Only 10% visit five times (1) Analysis Up to 2 marks for analysis e.g. 90% of hotel guests are satiated/full after consuming the 4th bowl/plate of food (1) so do not consume the 5th bowl/plate (1) - The last bowl/plate of food consumed increases total utility (1) but the gain in utility is smaller than for the last bowl (1)	(4)

Question Number	With reference to Figure 1 and Extract A, analyse two reasons for the fall in car sales in China since 2017.	Mark
	Answer	
7(c)	Knowledge 2 Application 2 Analysis 2 QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge and Analysis Up to 2 marks for identifying 2 reasons for the fall in car sales and 1 mark for linked expansion of each reason e.g. - China's economic slowdown (1K) caused a fall in the demand for expensive goods such as new cars (1AN) - Increased availability of taxis (1K) which are a low-cost substitute for new cars so consumers are switching to taxis causing a fall in demand for new cars, reducing sales (1AN) Application 1 mark for reference to Figure 1 24.7 million in 2017 to 23.7 million in 2018/21.4 million in 2019 (1) 13% decrease between 2017 to 2019/4% decrease between 2017 and 2018 (1) NB data must relate to 2017 and after 1 mark for reference to Extract A - Economic growth rate was 9.4% in 2009 and decreased to 6.6% in 2018/ 100 different car-hailing platforms/ - Chinese car buyers are increasingly looking for low-cost alternatives (1)	(6)

Question Number	With reference to Extract A, examine the likely effects of the Chinese Government's subsidy on the profits of an electric car manufacturer. Illustrate your answer with an appropriate diagram.	Mark
7(d)	Knowledge 2 Application 2 Analysis 2 Evaluation 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge Up to 2 marks for drawing a diagram that shows knowledge of: • Original AR, MR, AC₁, MC and profit-maximising equilibrium (1) • Subsidy would cause downward shift in AC and MC curves to AC₁ and MC₁ (1)  Analysis Up to 2 marks for explanation of impact on Chinese electric car manufacturers, e.g.: • Manufacturers face lower costs and if demand is unchanged then supernormal profits will increase (1) • Diagram showing increase in output at new MC=MR (1) with new profit area shown (1) Application Up to 2 marks for application to context of electric car market from Extract A e.g.: • Government is giving up to 90 000 yuan of subsidy per car (1) • To encourage more production (1) • Government is incentivising consumers to buy electric cars (1) • Explicit reference to data in diagram (1)	

Question	With reference to Extract A, analyse two reasons why India has become the world's second largest smartphone market. Answer	Mark
7(b)	Knowledge 2 Application 2 Analysis 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge and analysis Up to 2 marks for identifying two reasons and 1 mark for each linked expansion e.g. • Large population (1K) means high potential sales in India (1An) • Increasing per capita real incomes/disposable incomes (1K) mean smartphones are more affordable for consumers (1An) • Large smartphone ownership (1K) shows potential for upgrading to the latest models (1An) Application Up to 2 marks for identifying two relevant applications from extract A e.g. (1+1) • per capita income rose from US\$1000 to US\$1301 (1) • over half the population owns a mobile phone/it is expected that the market will grow from US\$ 25.1 billion in 2018-2019 to US\$ 80 billion in 2025-26 (1) in 2021 India's population was 1.38 billion/India has the second largest population after China (1)	(6)

	- The 4-firm concentration ratio was 97% (2) - Deliveroo and Uber Eats combined market share was 54% in 2021 (1) - Just Eat had the largest market share (40%) (1)	
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Question	With reference to Extract B, analyse two factors that influence the demand for online food delivery. Answer	Mark
7(c)	Knowledge 2 Application 2 Analysis 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge and analysis Up to 2 marks for identifying two factors influencing the demand for online food delivery and 1 analysis mark for each linked expansion: - Change in consumer preferences (1K) less demand for luxury items as people focus on buying essential items (1AN) - Change in real incomes (1K) e.g. real wages fell by 5.1% in June 2022 in the EU causing a fall in demand for online food deliveries (1AN) - Change in the number of people living in cities (1K) when more people move to cities there will be greater demand for online food deliveries (1AN) - Change in advertising/marketing expenditure (1K) e.g. increase in marketing expenditure is likely to raise consumer awareness and lead to an increase in demand (1AN) - Change in technology (1K) improvements in internet connectivity and smart phone usage have made online ordering more popular (1AN) - Increasing access to technology (1K) making online ordering easier and available to a wider range of consumers (1AN) Application Up to 2 marks for use of the context e.g. - The average value of an order for a takeaway meal fell (1) - From 2015 to 2025, there is expected to be a 7.6% increase in the population living in cities in the UK (1) - In the European Union in June 2022 the annual growth in wages was 4.5% (1) but the annual inflation rate was 9.6% (1) - Just Eat's marketing expenditure in the first half of 2021 totalled £252 million (1) - Online ordering and food delivery is growing at an annual rate of between 15% (1) and 20% in the UK (1)	(6)



Question	With reference to Figure 1 and the first paragraph of Extract B, examine two reasons why Deliveroo is making a loss. Illustrate your answer with an appropriate diagram(s). Answer	Mark
7(d)	Knowledge 2 Application 2 Analysis 2 Evaluation 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge A diagram that shows knowledge of: - Downward sloping AR and MR (1) - MC=MR and loss-minimising equilibrium (1) Analysis A diagram that shows knowledge of: - Area of loss identified (1) - AC above AR (1) Application - Loss of £298m (1) - Revenue was increasing but at a slower rate than the costs of production (1) - loss rose by £99m/ Loss rose from £199m (1) to £298m (1)/ Loss rose by 49.7% (1+1)	(8)

Question	With reference to Extract A, analyse two reasons why the global fast-food market is expected to grow. Answer	
7(c)	Knowledge 2 Application 2 Analysis 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge and analysis Up to 2 knowledge marks for identifying two reasons and up to 2 analysis marks for linked explanations: • A rise in the number of people living in cities (1K) means there are more potential customers to use fast food outlets/means there will be more demand for fast-food (1AN) • Change in lifestyles (1K) meaning the convenience of quick meals/fast-food is needed (1AN) • Affordability (1K) lower real incomes make people substitute expensive meals for fast food (1AN) • Marketing expenditures/branding (1K) increasing awareness/appeal of fast-food (1AN) • Greater use of mobile applications (1K) increases convenience for consumers when ordering fast food for home delivery (1AN) Application Up to 2 marks for use of Extract A e.g. • Between 2010 and 2021 the population living in cities increased from 3.59 billion to 4.59 billion (1AP) • Limited time for preparing meals (1AP) • Slow wage growth/ increased living costs (1AP) • In 2020 fast-food companies spent \$4.5 billion on advertising (1AP) • In 2023 Zomato was downloaded 52 million times/Uber Eats 41 million times (1AP)	



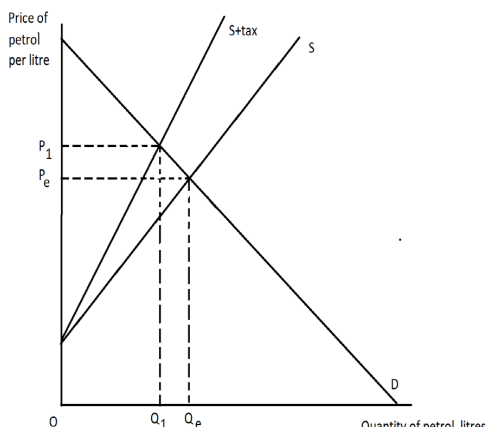
Question	With reference to the last paragraph of Extract C, examine two likely effects on smartphone manufacturers of the growth in the market for refurbished smartphones. Answer	Mark
12(d)	Knowledge 2, Application 2, Analysis 2, Evaluation 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge and Analysis Up to 2 marks for identifying two effects (K) and up to 2 marks for linked explanation (AN), e.g.: • New smartphone manufacturers lose revenue (1K) as consumers substitute to refurbished smartphones (1AN) • New smartphone manufacturers achieve lower profit/producer surplus (1K) as the demand for new smartphones decreases (1AN) • Manufacturers of refurbished smartphones gain revenue (1K) as consumers look to save money by purchasing the cheaper alternative (1AN) • Manufacturers of refurbished smartphones achieve higher profit/producer surplus (1K) they purchase the phones and sell them at a higher price (1AN) • Manufacturers of new smartphones have the incentive to encourage customers to return their smartphones after use (1K) and then refurbish these to add to the firms total revenue (1AN) Application Up to 2 marks for reference to Extract A, e.g.: • The market for smartphones that have been refurbished is forecast to be worth \$65 billion by 2024 (1) • Typically, a consumer can sell a one-year-old smartphone for 50% of its original price (1) • The manufacturer can sell the same refurbished smartphone for 80% of its original price (1) • Unwanted smartphones in developed countries are desired in emerging countries (1) Evaluation Up to 2 marks for evaluative comments (2+0 or 1+1), e.g.: • We do not know how this value compares to revenues generated by producing new smartphones (1+1) • There may be other external costs involved in refurbishment that manufacturers do not take account of (1+1) • The consumers may find reliability issues/inferior product compared to new models (1+1) • Profits may be limited by production requiring a large amount of labour (1+1)	(8)

Question	With reference to Extract C, discuss the microeconomic effects of the increase in smartphone manufacturing between 2011 and 2021. Refer to external costs in your answer. Illustrate your answer with an externalities diagram.
12(e)	Indicative content guidance Answers must be credited by using the level descriptors (below) in line with the general marking guidance. The indicative content below exemplifies some of the points that candidates may make but this does not imply that any of these must be included. Other relevant points must also be credited. Quantitative skills assessed QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge, Application and Analysis (8 marks) – indicative content • External costs- negative impacts on third parties • Between 2011 and 2021 smartphone production increased from 472 million to 1 433 million - Increase of 961 million by 2022 • By 2022 globally 4.5 billion people owned a smartphone • In 2022 smartphones will produce 146 million tonnes of CO₂ emissions. These emissions are produced by manufacturing, transportation, usage, refurbishing and recycling of smartphones • Additional global carbon emissions contribute to global warming e.g. those living on coast at risk of flooding/farmers face drought conditions or floods • Iron, aluminium and copper are the most common metals used- huge amounts of liquid and solid waste e.g. this causes pollution which reduces house values of those living nearby • In 2015 the waste at an iron ore mine spilled in Minas Gerais, Brazil releasing 33 billion litres of waste e.g. this may have a negative impact on the fish and the fishing industry/farmers land destroyed which reduces income of farming sector • Gold mining is a major cause of deforestation-impacts people/farmers as flooding more common/humans affected by reduced oxygen levels/reduces biodiversity/reduces supply of future medicines

Section A

Question Number	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	A	(1)
2	–	C	(1)
3	–	A	(1)
4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	B	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	B	(1)
6	QS8: Make and interpret calculations of elasticity	D	(1)

Section B

Question Number	Saudi Arabia introduced its first indirect tax on the sale of goods and services in 2018. The tax is charged at 5% of the price of goods and services. Draw a diagram to illustrate the impact of the introduction of the indirect tax on the equilibrium price and quantity of petrol in Saudi Arabia.	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for drawing original supply and demand (they do not have to include market equilibrium). OR 1 mark for definition of indirect tax e.g. tax on expenditure OR 1 mark for definition/identification of ad valorem Application Up to 3 marks for the following information included on diagram: 1 mark for drawing a supply curve to the left of original 1 mark for the new supply curve pivoting rather than parallel to old supply curve 1 mark for labelling the new higher price and lower quantity. 	(4)

Section A

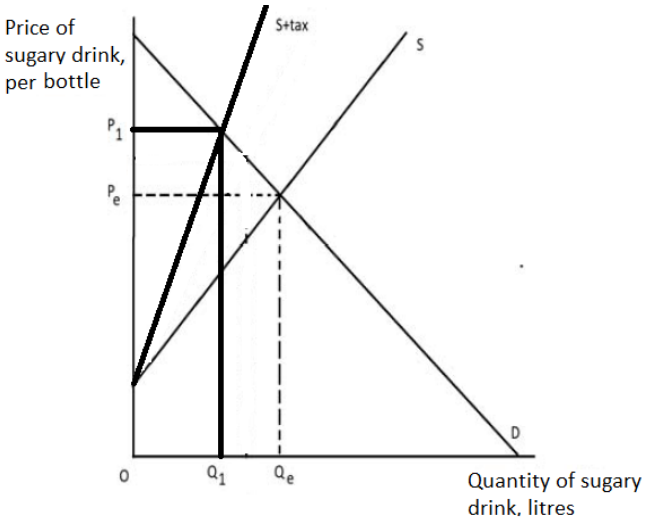
Question Number	Quantitative skills assessed	Answer	Mark
1	–	B	(1)
2	–	A	(1)
3	–	D	(1)
4	QS9: Interpret, apply and analyse information in written, graphical and tabular forms	B	(1)
5	QS9: Interpret, apply and analyse information in written, graphical and tabular forms	C	(1)
6	QS8: Make and interpret calculations of elasticity	D	(1)

Question	Quantitative skills assessed	Answer	Mark
1	–	B	(1)
2	–	A	(1)
3	–	D	(1)
4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	C	(1)
5	QS8: Make calculations of elasticity and interpret the result	C	(1)
6	QS8: Make calculations of elasticity and interpret the result	B	(1)

5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A <i>B is not correct as supply exceeds demand</i> <i>C is not correct as supply extends from Q_e to Q_2</i> <i>D is not correct as demand contracts from Q_e to Q_1</i>	(1)
6	QS8: Make calculations of elasticity and interpret the result	The only correct answer is C <i>A is not correct as demand would increase 24.6%</i> <i>B is not correct as demand would increase 14.8%</i> <i>D is not correct as demand would fall as the good is inferior</i>	(1)

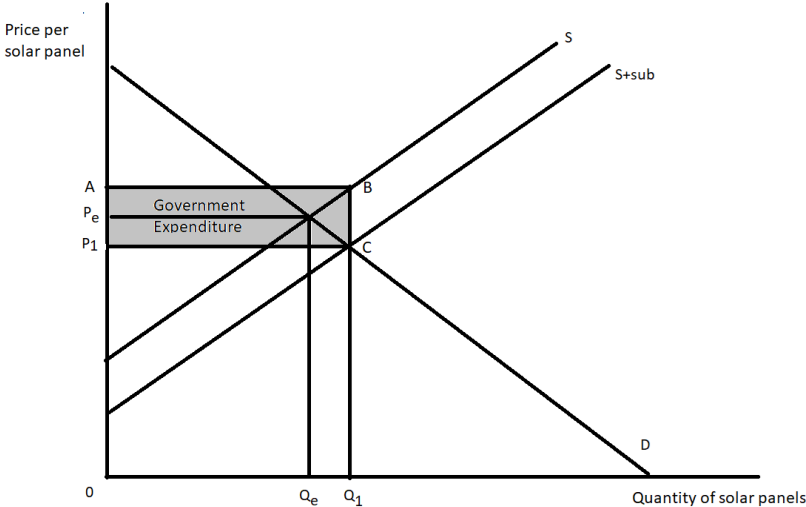
4	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because the social optimum quantity is Q_2 and price is P_2 B is not correct because the market equilibrium quantity is Q_1 and price is P_1 C is not correct because RST is the area of welfare loss	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because this position shows unemployed resources B is not correct because at B there are fewer capital goods consumed than at C so growth will be slower D is not correct because this point is unattainable using current resources	(1)
6	QS8: Make calculations of elasticity and interpret the result	The only correct answer is B A is not correct because a decrease in real income will result in a less than proportionate decrease in demand for butter C is not correct because a decrease in real income will result in a less than proportionate increase in the demand for margarine D is not correct because the data is about income elasticity and not price elasticity of demand.	(1)

Section B

Question Number	In October 2017 the United Arab Emirates (UAE) introduced an indirect tax on energy drinks. The tax is charged at 50% of the price of energy drinks. Draw a diagram to illustrate the impact of the introduction of the indirect tax on the equilibrium price and quantity of energy drinks in UAE. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge - Original supply and demand diagram with correct original equilibrium (1) Application Up to 3 marks for the following information included on diagram: - Shifting supply to the left (1) - Including the new equilibrium quantity and price (1) - And for pivoting the supply curve (1) 	(4)

		D is not correct because €45 000 is the total revenue before the price rise	
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C- Excess demand will be equal to Q_0Q_2 A is not correct because quantity supplied contracts from Q_1 to Q_0 B is not correct because quantity supplied extends from Q_1 to Q_2 D is not correct because excess supply would occur if a minimum price was introduced	(1)
6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B- The demand for water will be most responsive to a change in the price of sugar-sweetened drinks A is not correct because coffee has the lowest cross elasticity of demand showing it will be least responsive C is not correct because an increase in the price of sugar sweetened drinks will lead to a less than proportionate increase in the demand for milk D is not correct because an increase in the price of sugar-sweetened drinks will lead to an increase in the demand for water, milk and coffee	(1)

Section B

Question	China aims to increase electricity generation from renewable resources. China's Government has introduced a subsidy for solar panel manufacturers. Draw a diagram to illustrate the impact of the introduction of a subsidy on the market for solar panels. Show the new equilibrium price and quantity and the area of government expenditure on the subsidy in your diagram.	Mark
7	Answer Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge - Original supply and demand with equilibrium price and quantity (1) Application Up to 3 marks for the following information included on diagram: - Shifting supply to the right (1) - The new equilibrium quantity and price (1) - The area of government expenditure on the subsidy is P_1ABC (1)  The supply curve may be pivoted or shifted	(4)

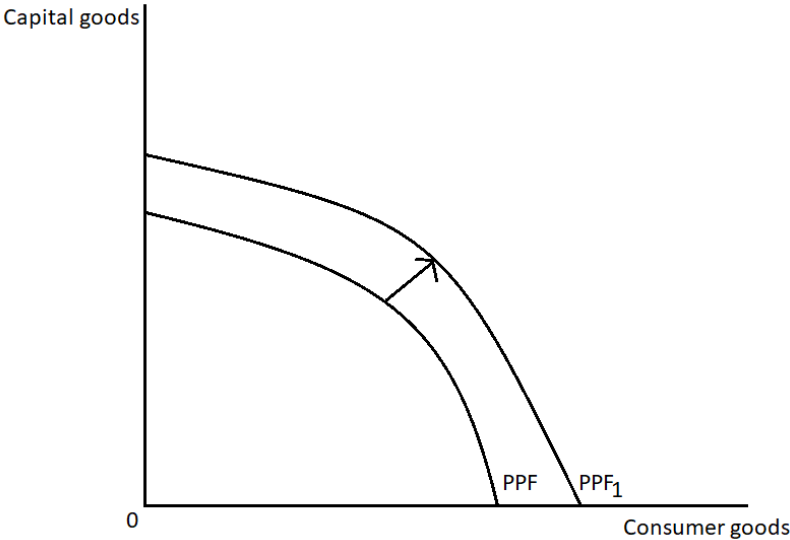
Section A

Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because firms would supply less if the price decrease C is not correct because the price decrease would be caused by lower demand D is not correct because government intervention is not a function of the price mechanism	(1)
2		The only correct answer is C A is not correct because increased boredom is a disadvantage B is not correct because costs to make each garment are likely to decrease D is not correct because less time will be required for training as they focus on fewer parts of the production process	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because Caribbean holidays are a luxury/normal good B is not correct because healthcare does not have an income elasticity of demand value above +1 D is not correct because there is no data on price elasticity of demand	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because Q_1 is the market equilibrium output B is not correct because Q_2 is the social optimum output C is not correct because ABC is the welfare gain	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because if too few permits were issued the price would be higher B is not correct because if too many permits were issued the price for carbon permits would be falling/lower C is not correct because a decrease in the demand for permits would reduce their price	(1)

Section A

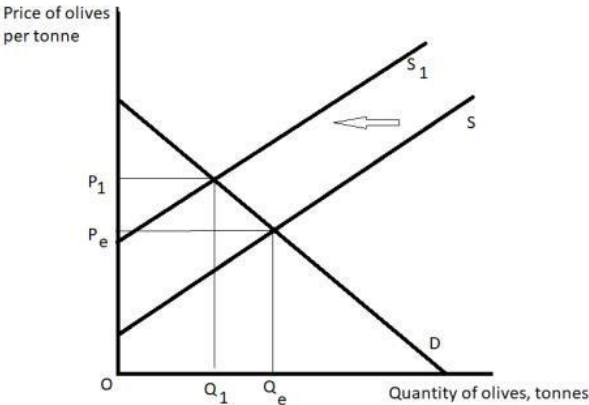
Question	Quantitative skills assessed	Answer	Mark
1	–	The only correct answer is B A is not correct because this is a market failure C is not correct because this is a function of the price mechanism D is not correct because this is the government intervening to correct the market failure	(1)
2		The only correct answer is A B is not correct because housing is not a commodity or currency C is not correct because there is no forward market in higher education D is not correct because street lighting is a public good that has non-excludability and non-rivalry	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because the data provided is for cross elasticity of demand and not for income elasticity of demand B is not correct because the data provided is for cross elasticity of demand and not for income elasticity of demand C is not correct because fish and rice are substitutes as the value of XED is positive	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because the diagram does not consider the relationship between income and quantity demanded B is not correct because the diagram does not consider the relationship between price and quantity supplied	(1)

Section B

Question	Answer	Mark
7	Draw a diagram to illustrate the likely impact of this population change on Germany's production possibility frontier. Include an arrow to show the direction of the shift. Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram • Appropriately labelled axes (1) Application Up to 3 marks for the following information included on diagram: • Original PPF (1) • Directional arrow to show outward shift (1) • New PPF further from the origin (1)  NB Accept straight line PPFs NB Capital goods or consumer goods may be labelled on either axis/Accept other reasonable alternatives on the axes e.g. goods and services NB Award 3 marks if increase in only one of the goods is illustrated (as shown below)	

6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because demand for battery electric vehicles will increase B is not correct because the demand for hybrid vehicles will increase by 3.2% C is not correct because the demand for hybrid vehicles will increase by 1.6%	(1)
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Section B

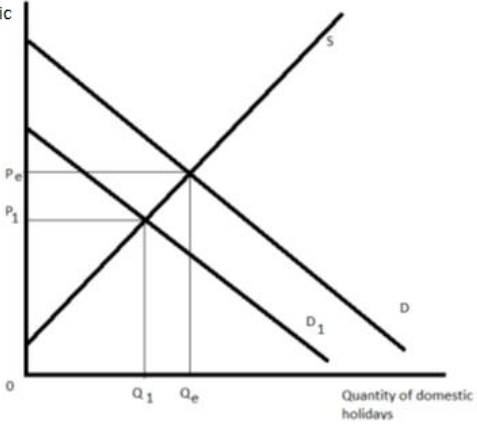
Question	Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram - Original supply and demand curves with correctly labelled axis (1) Application Up to 3 marks for the following information included on diagram: - Original equilibrium price and quantity (1) - Supply curve shifted to the left (1) - New equilibrium price and quantity following the correct shift in supply (1) 	(4)

Section A

Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because this illustrates that the market is functioning correctly B is not correct because this is an example of market failure C is not correct because this is government intervention succeeding in eliminating the market failure	(1)
2	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because increased unemployment means that the economy operates further inside the PPF C is not correct because an improvement in technology would result in the PPF shifting outwards D is not correct because an increase in immigration will result in an increase in productive potential	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because the PED value for diesel is the only type of car whose demand is inelastic B is not correct because the demand for petrol and electric cars is elastic D is not correct because the demand for electric cars is elastic so increasing the price will result in a decrease in total revenue	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because the market equilibrium quantity is at Q_1 B is not correct because the social optimum quantity is at Q_2 C is not correct because the welfare gain area is equal to the area UWX	(1)
5	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because inertia is about consumers finding that the effort to secure a better deal is too great B is not correct because the free-rider problem is associated with public goods D is not correct because a market bubble emerges when the price of an asset rises above its true value	(1)

6	QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because an increase in the price of one complement would result in a reduction in the quantity demanded for the other complement C is not correct because a change in the price of one good causes a change in demand for the other good D is not correct because there is no information on income	(1)
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Section B

Question	Draw a diagram to illustrate the likely impact of this change in real incomes on the equilibrium price and quantity for domestic holidays in Laos.	Mark
7	Answer Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram • Original supply and demand (1) Application Up to 3 marks for the following information included on diagram: • Original equilibrium price and quantity (1) • Demand shifted to the left (1) • New equilibrium price and quantity (1) Price per domestic holiday, \$  Quantity of domestic holidays	(4)

Section A

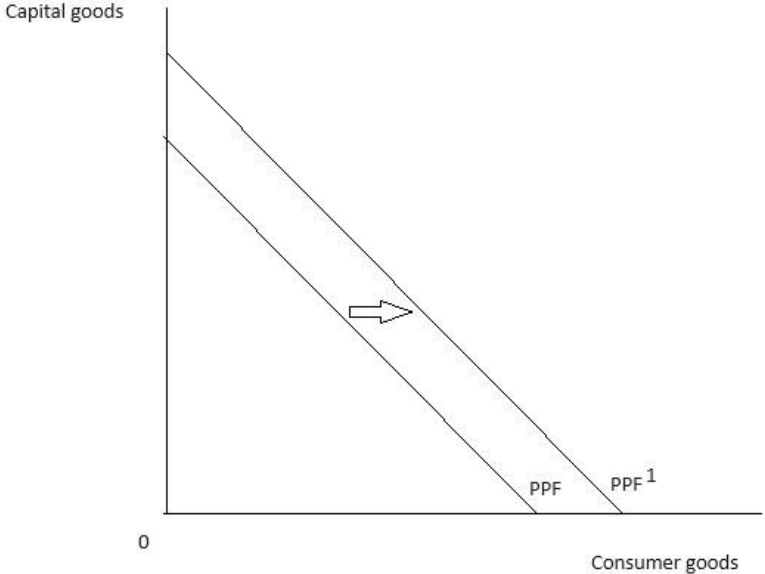
Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because this is an example of asymmetric information B is not correct because this is an example of asymmetric information D is not correct because market failure occurs when there is asymmetric information	(1)
2	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because consumer goods gain utility for an individual B is not correct because the sea defences have an opportunity cost C is not correct because the sea defences are non-excludable and non-rival whereas private goods are excludable and rival.	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because complements have a negative XED C is not correct because unrelated goods have an XED of 0 D is not correct because there is no information on income	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because this is the area of consumer surplus C is not correct because the area the government will spend is GHKJ D is not correct because this is the total revenue to farmers	(1)
5	QS2 Calculate, use and understand percentages, percentage changes and percentage point changes QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because more electricity is generated using renewable resources C is not correct because 21% is the total for non-renewable resources D is not correct because 79% is the total for renewable resources	(1)

Section A

Question	Quantitative skills assessed	Answer	Mark
1	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because an economic good has an opportunity cost C is not correct because when providing a public good other items may be sacrificed D is not correct because investing in a capital good has an opportunity cost in terms of consumer goods	(1)
2	QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is A B is not correct because the excess supply of permits will result in the price decreasing C is not correct because the cost of buying permits will decrease D is not correct because there is less incentive to invest in cleaner technology when permits are cheaper	(1)
3	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because there is no information on income elasticity of demand B is not correct because substitute goods have a positive XED C is not correct because the value of XED is not zero	(1)
4	QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because the PED will be 0 B is not correct because the PED will be between 0 and -1 D is not correct because the PED will be -infinity	(1)

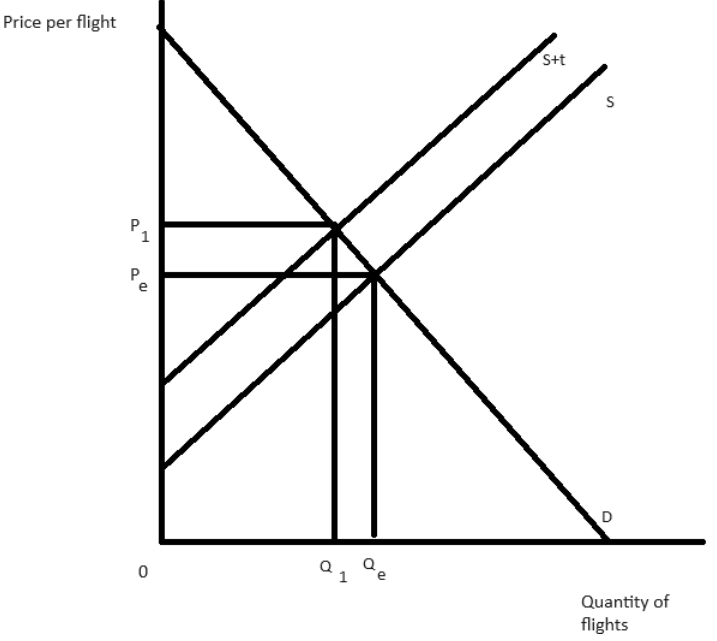
6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is B A is not correct because complements have a negative XED C is not correct because there is no information on the income elasticity of demand D is not correct because there is no information on the income elasticity of demand	(1)
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Section B

Question	Answer	Mark
7	Draw a diagram to illustrate the impact of Artificial Intelligence on China's production possibility frontier (PPF). Include an arrow on your PPF diagram. Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram • Original PPF (1) Application Up to 3 marks for the following information included on diagram: • Correctly labelled axes (1) • For drawing PPF shifted to the right (1) • Arrow showing shift to the right (1)  N.B. Accept straight-line or curved PPF diagram N.B. Accept other appropriate labels for axis- e.g. agricultural goods and manufactured goods, goods and services, good A and , good B N.B. Capital good and consumer good labels can be reversed N.B. If price and quantity or no labels on axes maximum 1 mark should be awarded N.B. Each PPF curve does not need labelling	(4)

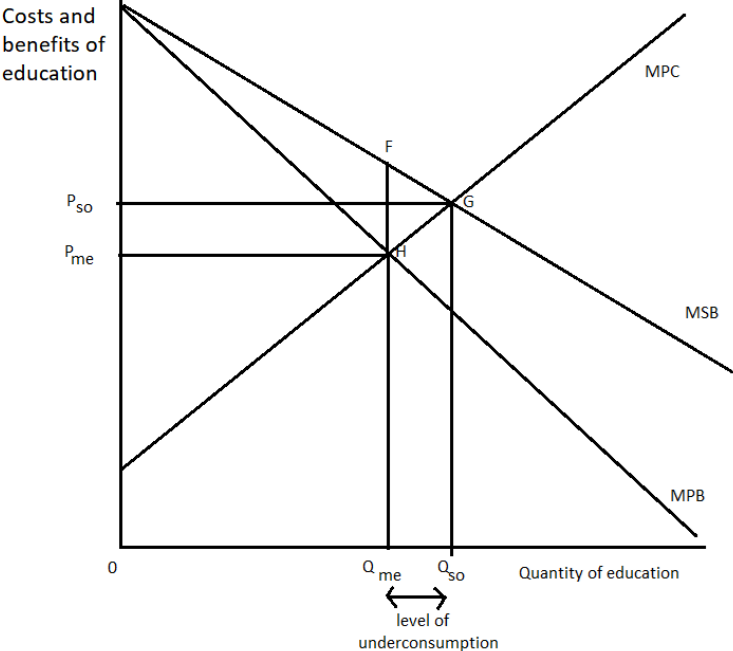
6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because there is no information on the income elasticity of demand B is not correct because there is no information on the income elasticity of demand C is not correct because complements have a negative XED	(1)
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Section B

Question	In 2023 the Government of France considered imposing an indirect tax on aviation fuel for those using private jets. This was to be set at a rate of €0.65 per litre. Draw a diagram to illustrate the impact of imposing an indirect tax on aviation fuel for private jets. Answer	Mark
7	Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram - Original supply and demand and correctly labelled axis (1) Application Up to 3 marks for the following information included on diagram: - Original equilibrium price and quantity labelled (1) - Leftward shift of supply (not pivot) (1) - New equilibrium following a shift (not pivot) (1)  NB Award maximum 2 marks if the supply curve is pivoted Accept other reasonable axis labels	(4)

4	QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because total revenue would increase as demand is price inelastic/ this is the gain in revenue from the higher price ($90 \times \\$1 = \\$90\,000$) B is not correct because total revenue would increase as demand is price inelastic/ this is the loss in revenue due to the decrease in the quantity sold ($15 \times \\$3 = \\$45\,000$) D is not correct because this shows the additional revenue from those consumers that continue to buy the product and ignores the lost revenue from those who stop buying at the higher price/ this is the gain in revenue from the higher price ($90 \times \\$1 = \\$90\,000$)	(1)
5	QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is D A is not correct because the free market has no government and in Venezuela 14.4% of its economy is government B is not correct because a command economy would have 100% of spending by the government C is not correct because Venezuela and Sweden are mixed economies with both the price mechanism and the government allocating resources	(1)
6	QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms	The only correct answer is C A is not correct because the demand for all four chocolate bars is price elastic B is not correct because there is no information on the income elasticity of demand D is not correct because a 5% increase in price will result in an 8% decrease in quantity demanded	(1)

Section B

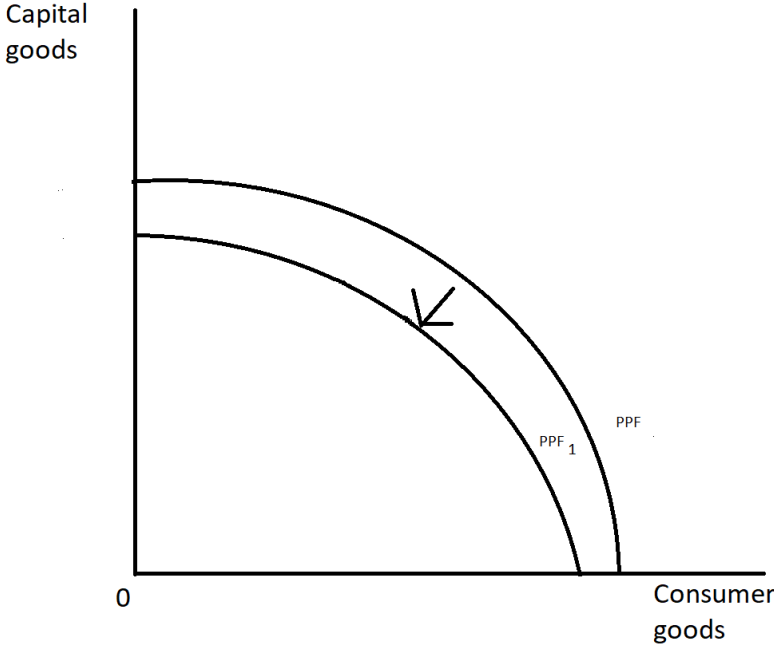
Question	Answer	Mark
7	In 2021 the number of citizens taking online education courses in the Philippines was 1 300 000. Draw a diagram to illustrate the likely external benefits resulting from online education in the Philippines. Knowledge 1, Application 3 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for showing knowledge on diagram - Downward sloping MSB above MPB (1) Application Up to 3 marks for the following information included on diagram: - Market equilibrium price and quantity (1) - Social optimum price and quantity (1) - Welfare loss/welfare gain area FGH/ size of external benefit FH/ level of underconsumption $Q_{me} - Q_{so}$ (1) (allow underprovided)  NB accept a parallel shift of MPB to MSB	(4)

Section C

Question	Define the term 'price elasticity of demand' (Figure 2)	Mark
	Answer	
12 (a)	QS8: Make calculations of elasticity and interpret the result. Knowledge 2 Up to 2 marks for defining 'price elasticity of demand.' e.g.: • The responsiveness of quantity demanded (1) to a change in price (1) • % change in quantity demanded/% change in price (1+1) • $\Delta Q_D / Q_D \div \Delta P / P$ (1+1) • PED of chicken is -0.55/ relatively inelastic (1)	(2)

	• Contracts can be agreed with certainty ensuring more confidence and therefore more goods and services likely to be traded internationally (1). • By firms being able to grow they will be able to increase the quantity of goods they buy from abroad and sell to abroad (1). • Consumers are then able to use the savings to make larger purchases for example of cars from abroad (1). • This helps exports to reach 173.3% of its GDP (1). • Singapore depends on international trade (1).	
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Question Number	In September 2017, Centrica increased the price of gas and electricity by 12.5%. Before the price rise Centrica had 12 800 000 customers but this fell by 800 000 after the price increase. Ceteris paribus, calculate the price elasticity of demand for gas and electricity from Centrica. Show your workings. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make and interpret calculations of elasticity. Knowledge • 1 mark for the formula for price elasticity of demand: $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}} \quad \textbf{(1)}$ OR • 1 mark for identifying that the good is relatively price inelastic. • The demand for Centrica's gas and electricity is price inelastic because the percentage change in price is greater than the percentage change in quantity demanded. Application Up to 3 marks for calculations: • Change in quantity ÷ original quantity $-800\,000 \div 12\,800\,000 \times 100 = -6.25\% \textbf{(1)}$ • % Change in quantity ÷ % change in price $-6.25\% / 12.5\% \textbf{(1)} = -0.5 \textbf{(1)}$ NB: if correct answer (-0.5) is given, award full marks regardless of working	(4)

Question Number	Lithuania's population decreased from 3.7 million in 1989 to 2.9 million in 2015. Ceteris paribus, explain the likely impact of this change in population on Lithuania's production possibility frontier (PPF). Illustrate your answer with a diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms Knowledge 1 mark for defining production possibility frontier: - PPF is the maximum production potential using all available resources (1). OR 1 mark for original PPF on diagram Application 1 mark for the following diagram, showing the shift in PPF:  OR 1 mark for reference to stem: - Population has decreased by 0.8m	

Section C

Question Number	Define the term 'free good' (Extract A, line 7). Answer	Mark
12 (a)	Knowledge 2 Up to 2 marks for defining a 'free good', e.g.: • A free good is a good with zero opportunity cost (1) This means it can be consumed in as much quantity as required without reducing the availability to others (1). • Product is so abundant (1) that it is impossible for a price to be charged (1). • Abundant in supply (1) with no opportunity cost (1). • A good that is not scarce (1) and does not have to be bought or traded (1).	(2)
Question Number	Between 2008 and 2016 weekly household real income increased by 2.7% in Australia. (b) With reference to Figure 1, explain the likely change in quantity demanded of lamb between 2008 and 2016. Answer	Mark
12 (b)	Knowledge 2 Application 2 Knowledge Up to 2 marks for definitions of income elasticity of demand (YED) and inferior good: • The responsiveness of quantity demanded to a change in income. OR Formula for YED: $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} \quad \mathbf{(1)}$ • Inferior good has an income elasticity which is negative (1). Application 1 mark for reference to the direction of change, e.g.: • The negative YED means that a rise in income will lead to a fall in quantity demanded /Quantity demanded will fall as income increases (1) 1 mark for reference to the actual change, e.g.: • The YED is less than 1 so quantity change will be less than proportional/ less than 2.7%/ 0.39% change (1) NB = - (1) 0.39% (1)	(4)

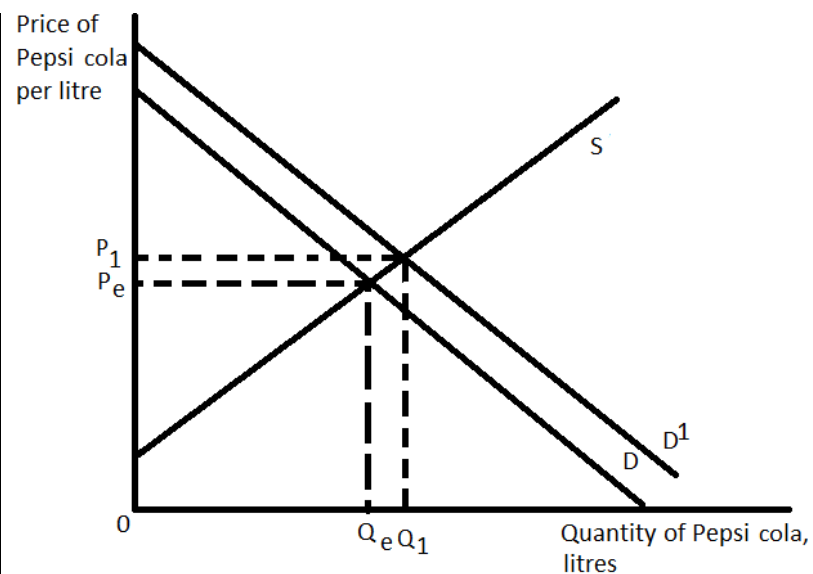
Question Number	With reference to Figure 2 and Extract A, analyse one reason why the price of lamb increased during 2017. Illustrate your answer with a supply and demand diagram. Answer	Mark
12 (c)	Knowledge 2, Application 2, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical and tabular forms. Knowledge 1 mark for diagram showing original supply, demand and equilibrium (1). 1 mark for identification of one reason from Extract A: • rising incomes / demand for Australian lamb rising 28% / demand for lamb has risen in the USA / advertising (1). Application Up to 2 marks: 1 mark for the correct shift of demand on the diagram. 1 mark for interpreting data from Figure 2: • showing any change in price from 2017 e.g. from \$5.00 in Jan 2017 to \$5.80 in Dec 2017 (1). NB accept reference to data from 2016 compared to 2017. Analysis Award 1 mark for development of how one reason leads to higher prices, e.g.: • Rising incomes mean they may eat more meat and therefore buy more lamb/ with lamb being a normal good an increase in global incomes will increase demand for lamb (1). • Demand for lamb rising in the USA means more competition for lamb which pushes up the price (1). • The advertising campaign will generate more awareness/ interest in lamb pushing up demand (1). • The increase in demand sees an extension of supply (1). • PLUS 1 mark for diagram showing final equilibrium with higher price (1).	

Question	Using the data in the table, calculate the income elasticity of demand for visits abroad by Chinese citizens. Show your workings. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. Knowledge EITHER 1 mark for the formula for income elasticity of demand: <u>% change in quantity demanded</u> % change in income (1) OR 1 mark for identifying the elasticity: • the income elasticity of demand is positive making them normal goods/ demand is income inelastic (1) Application Up to 3 marks for calculations: • change in number of Chinese visits abroad: $127 - 122 = 5$ million change in number of Chinese visits abroad / original number of Chinese visits abroad: $5 \div 122 \times 100 = 4.10$ (1) % • change in gross weekly earnings (income): $¥1\,373 - ¥1\,299 = ¥74$ change in gross weekly earnings / original gross weekly earnings: $74 \div 1299 \times 100 = 5.70$ (1) % • YED $4.10 \div 5.70 = +0.72$ (1) NB: if correct answer (0.72) is given, award full marks regardless of working. Accept rounded numbers and associated YED	(4)

Question	Based on the data in the table, calculate the income elasticity of demand for visits abroad by UK citizens. Show your workings.	Mark
	Answer	
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. Knowledge 1 mark for the formula for income elasticity of demand: $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} \quad (1)$ Accept definition of YED OR 1 mark for identifying that the good is a normal good/ UK visits abroad are a normal good as when income rises, demand rises. Application Up to 3 marks for calculations: - Change in quantity ÷ original quantity $1.9\text{m} \div 70.8 \times 100 = 2.68\% \quad (1)$ - Change in income ÷ original income $11 \div 539 \times 100 = 2.04\% \quad (1)$ % Change in quantity ÷ % change in income $2.68\% \div 2.04\% = 1.3137 \quad (1)$ NB: if correct answer (1.3137) is given, award full marks regardless of working. Accept accurate answers given to 1dp, 2dp, 3dp, 5dp etc.	(4)

Question Number	Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. Knowledge 1 mark for the formula for income elasticity of demand: <u>% change in quantity demanded</u> % change in income OR 1 mark for identifying that the good is a normal good - e.g. In Singapore, new car sales are a normal good as when income rises, quantity demanded rises. (1) Application Up to 3 marks for calculations: - Change in quantity ÷ original quantity $3\,023 \div 109\,091 \times 100 = 2.77\%$ (1) - Change in income ÷ original income $1236 \div 65\,796 \times 100 = 1.88\%$ (1) % Change in quantity ÷ % change in income $2.77\% \div 1.88\% = 1.47$ (1) If candidate does not complete any rounding they will calculate 1.48 Accept responses to 1dp, 2dp, 3dp 4dp etc. NB: if correct answer (e.g. 1.47, 1.48, 1.5) is given, award full marks regardless of working	(4)

Question Number	Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result. Knowledge 1 mark for definition/formula of cross elasticity of demand e.g.: Responsiveness of demand for one product to a change in the price of another product Or $\frac{\% \text{ change in quantity demanded of good x}}{\% \text{ change in price of good y}} \quad (1)$ Application 1 mark for identifying that Pepsi cola and Coca Cola are substitutes - The XED is positive and therefore they are substitutes. (1) Analysis Up to 2 marks for likely impact on Pepsi cola - An increase in demand (1) of 12.4% (1.24×10) (1) NB accept rounded figures OR	(4)



- For showing increase in demand **(1)**
- For showing increase in equilibrium price/ quantity **(1)**

Or

- Verbal description of impact of increase in price of Coca Cola on demand for Pepsi cola
- As the price of Coca Cola increases consumers will substitute to the relatively cheaper Pepsi cola causing the demand to increase **(1)** the percentage increase will be greater than 10 as the cross elasticity is elastic **(1)**
- Close substitutes **(1)** so the impact so will result in a more than proportionate impact **(1)**

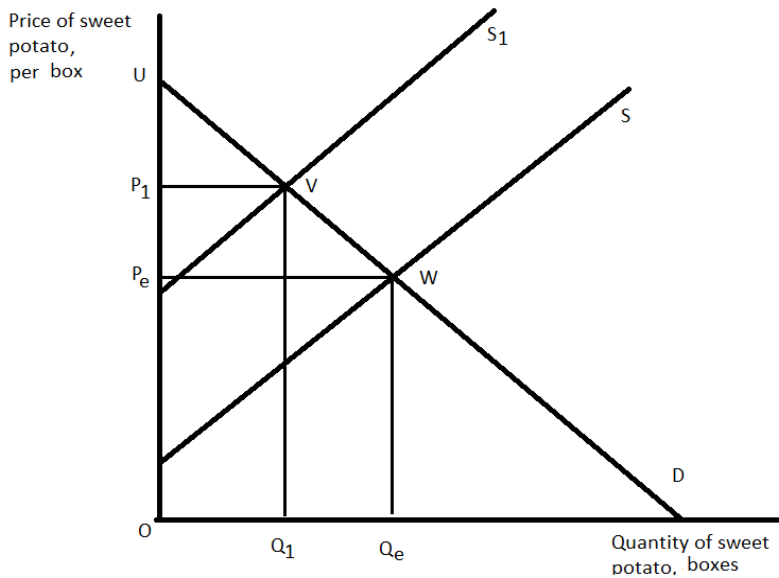
Section C

Question Number	Answer	Mark
12 (a)	Knowledge 2 Up to 2 marks for defining 'equilibrium', e.g.: • Where the market is in balance (1) • Where supply and demand intersect/ meet/ situation where supply and demand are matched (1) • Leading to a stable price (1) • Determines the market price/ quantity sold (1) • Set by the free market/ price mechanism (1) • Price consumers willing to buy at is the same as the price producers are willing to sell at (1) • Leads to an efficient allocation of resources (1)	(2)

Question Number	Answer	Mark
12 (b)	Knowledge 2 Application 2 Quantitative skills assessed: QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge Up to 2 marks for definitions: • Substitutes are goods with a positive cross elasticity of demand/ two goods that meet the same need (1) • Price elasticity of demand is the responsiveness of quantity demanded to a change in price/ or formula (1) • Elastic demand is where a change in price leads to a proportionally larger change in quantity demanded/ diagram showing elastic demand (1) Application Up to 2 mark for application to Extract A • Competing vegetable oils such as rapeseed, soybean and sunflower OR Crude oil is a substitute for palm oil (used in biodiesel) (1) • With so many substitutes an increase in the price of palm oil would see customers substitute to alternative- crude oil/ rapeseed/ soybean/ sunflower oil (1) meaning demand will be relatively elastic / cause the PED to increase (1)	(4)

Question Number	Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. Knowledge 1 mark for the formula for cross elasticity of demand: $\frac{\% \text{ change in quantity demanded of tea}}{\% \text{ change in price of coffee}}$ OR $\% \text{ change in P of coffee} \times \text{XED} = \% \text{ change in Qd of coffee}$ OR 1 mark for identifying that the goods are substitutes (1) Application Up to 3 marks for calculations: $? \div 32\% = 0.52 \text{ (1)}$ $32\% \times 0.52 \text{ (1)} = 16.64\% \text{ (1)}$ NB: if correct answer (17%/16.6%/16.64%) is given, award full marks regardless of working.	(4)

Question Number	In 2019 Netflix increased the price of its basic subscription streaming service from \$7.99 to \$8.99 in the USA. It was estimated that there would be an 8% decrease in the number of consumers with Netflix subscriptions. <i>Ceteris paribus</i>, calculate the price elasticity of demand for the basic subscription for Netflix. Show your workings. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. Knowledge 1 mark for the formula for price elasticity of demand: <u>% change in quantity demanded</u> % change in price OR 1 mark for identifying that the good has relatively price inelastic demand/ The PED is inelastic as a rise in price sees quantity demanded change by a smaller percentage (1) Application Up to 3 marks for calculations: - Change in price ÷ original price $1 \div 7.99 \times 100 = 12.52\%$ (1) % Change in quantity ÷ % change in price $-8\% \div 12.52\%$ (1) = -0.6/-0.64/-0.639 (1) NB: if correct answer (-0.6/-0.64/-0.639) is given, award full marks regardless of working. NB: (0.6/0.64/0.639) would be awarded 3 marks.	(4)

Question Number	Between August 2018 and August 2019 the world price of sweet potatoes increased from \$12 to \$22.50 per box. This was caused by Hurricane Florence and heavy rains in the USA, the world's largest supplier. Explain the likely impact of this change in price on consumer surplus in the market for sweet potatoes. Illustrate your answer with a diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms Knowledge 1 mark for defining consumer surplus Consumer surplus is the difference between the price which consumers are willing to pay and the market price (1) Application 1 mark for the following diagram, showing the correct shift in supply 	

Analysis

Up to 2 marks for likely impact on consumer surplus

- Original consumer surplus is P_eUW **(1)**
- New consumer surplus is P_1UV **(1)**

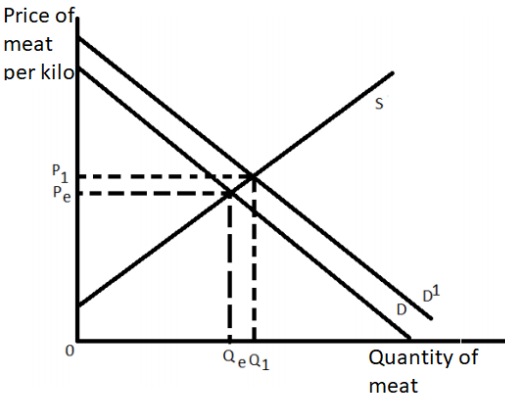
Or

- Consumer surplus decreases **(1)** by P_eP_1VW **(1)**

(4)

Question	In the USA the price elasticity of demand for residential natural gas is estimated at -0.1. Explain one reason why the price elasticity of demand for residential natural gas is only -0.1. Answer	Mark
9	Knowledge 1, Application 1, Analysis 2 QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition/understanding of inelastic demand e.g.: • Inelastic demand is where a change in price will result in a smaller percentage/proportionate change in quantity demand • PED value between 0 and -1 (1) Application 1 mark for applying to the stem, e.g.: • -0.1 means the PED is inelastic/demand is price inelastic/highly price inelastic/relatively price inelastic (1) Analysis Up to 2 marks for explaining one reason e.g.: • There are few substitutes for natural gas (1) so even when price changes people will continue to demand natural gas (1) • Consumers are reliant on the product/see the good as necessary (1) and would find it difficult to reduce consumption (1) • Expenditure on natural gas is a small proportion of total expenditure/income (1) so an increase in price will not discourage consumers from buying (1)	(4)

Question	Ceteris paribus, calculate the price elasticity of demand for sugar. Show your workings.	Mark
	Answer	
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition/the formula for price elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}} \quad (1)$ Application Up to 3 marks for calculations: - Change in quantity ÷ original quantity x 100 $-1\,020 \div 172\,620 \times 100 = -0.59\% \quad (1)$ - Change in price ÷ original price x 100 $3.78 \div 11.28 \times 100 = 33.51\% \quad (1)$ $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$ $-0.59 \div 33.51 = -0.0176 \quad (1)$ NB: if correct answer (e.g. -0.0176/-0.018/-0.02) is given, award full marks regardless of working. Award three marks if negative sign omitted.	(4)

Question	The cross elasticity of demand for meat with respect to fish is estimated to be +0.13 in Bangladesh Explain the likely impact of a 10% increase in the price of fish on the demand for meat in Bangladesh. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition or formula of cross elasticity of demand e.g.: Responsiveness of demand for one product to a change in the price of another product $\frac{\% \text{ change in quantity demanded of good x}}{\% \text{ change in price of good y}} \quad (1)$ Application 1 mark for application to meat and fish - Meat and fish are substitutes (1) - XED between fish and meat is positive (1) Analysis Up to 2 marks for calculating the likely impact on demand for meat - An increase in demand (1) of 1.3% (0.13×10) (1) Or Up to 2 marks for using a diagram to show the likely impact on demand for meat  - For showing increase in demand (1) - For showing increase in equilibrium price/quantity (1)	

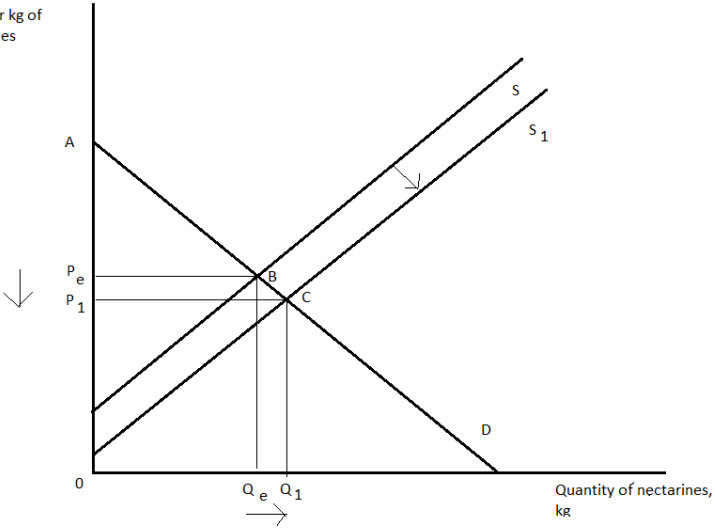
Or

2 marks for alternative written explanation.

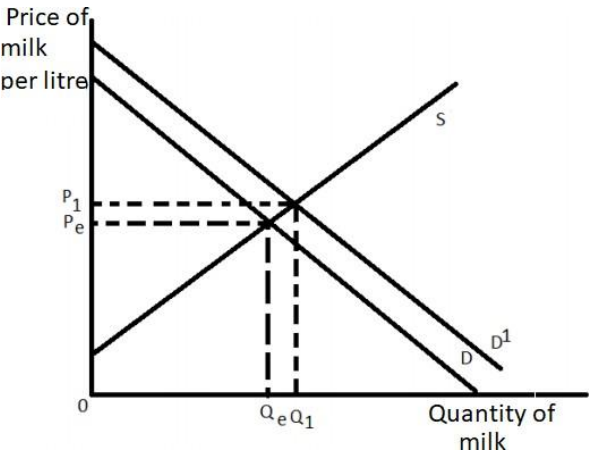
- If the price of fish increases consumers will buy more meat causing the demand for meat to increase **(1)** the percentage increase will be less than 10% as the cross elasticity is inelastic **(1)**
- Not close substitutes **(1)** so the impact so will result in a less than proportionate impact on quantity of meat demanded **(1)**

(4)

Question	<i>Ceteris paribus</i> , calculate the price elasticity of demand for gas from British Gas. Show your workings.	Mark
10	Answer Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition/the formula for price elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$ OR 1 mark for identifying that the good has relatively price inelastic demand/The PED is inelastic as a fall in price results in a smaller percentage change in quantity demanded (1) Application Up to 3 marks for calculations: - Original quantity $17\,000\,000 + 350\,000 = 17\,350\,000$ (1) - Change in quantity ÷ original quantity × 100 $-350\,000 \div 17\,350\,000 \times 100 = -2.017\%$ (1) $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in price}}$ $-2.017 \div 22 = -0.092$ (1) NB: if correct answer (e.g. -0.09168182) is given, award full marks regardless of working. NB: award 3 marks if negative sign is omitted/percentage sign added to final answer NB: award 3 marks if negative sign included but error in calculation	(4)

Question	Explain the likely impact of this change in price on consumer surplus in the market for nectarines. Illustrate your answer with an appropriate diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of consumer surplus e.g.: The difference between the price consumers are willing to pay and the price they pay/gap between the equilibrium price and demand curve (1) Application 1 mark for the following diagram, showing supply shifting right  Analysis 1 mark for the original consumer surplus ABP_e (1) 1 mark for the new consumer surplus ACP_1 (1) OR 2 marks for the change in consumer surplus - Consumer surplus increases (1) by BCP_1P_e (1)	(4)

Question	<i>Ceteris paribus</i> , calculate the income elasticity of demand for cars between 2011 and 2021. Show your working.	Mark
	Answer	
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition/the formula for income elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}}$ OR 1 mark for identifying that cars are normal goods (1) Application Up to 3 marks for calculations: - Change in quantity $14\,926\,900 - 12\,741\,800 = 2\,185\,100$ Change in quantity $\div$ original quantity $\times 100$ $2\,185\,100 \div 12\,741\,800 \times 100 = 17.15\%$ (1) - Change in income $44\,225 - 31\,024 = 13\,201$ Change in income $\div$ original income $\times 100$ $13\,201 \div 31\,024 \times 100 = 42.55\%$ (1) $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}}$ $17.15 \div 42.55 = 0.40$ (1) NB: if correct answer (e.g. 0.40 to 2 d.p./0.403055 to 6 d.p./0.4030245 without any rounding) is given, award full marks regardless of working.	(4)

Question	Explain the likely impact of a 5% increase in the price of sugar-sweetened drinks on the demand for milk. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition or formula of cross elasticity of demand e.g.: The responsiveness of quantity demanded of good A to a change in the price of good B or $\frac{\% \text{ change in quantity demanded of good X}}{\% \text{ change in price of good Y}} \quad (1)$ Application 1 mark for identifying that the two goods are substitutes Milk and sugar-sweetened drinks are substitutes (1) Analysis Up to 2 marks for linked expansion - The demand for milk will increase (1) by 1.25% (1) Or 	(4)

- For showing increase in demand **(1)**
- For showing increase in equilibrium price/quantity **(1)**

Or

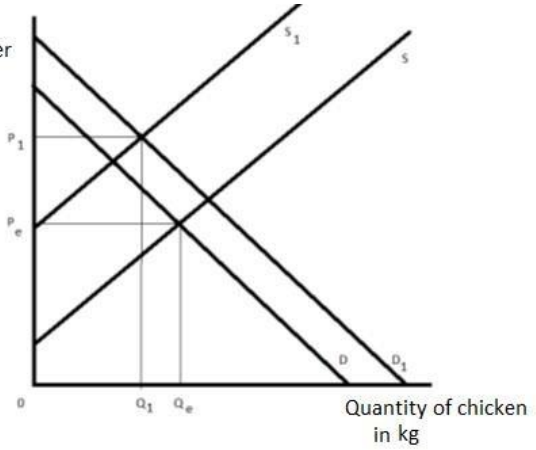
- If the price of sugar-sweetened drinks increases, consumers will buy more milk causing the demand for milk to increase **(1)** the percentage increase will be less than 5% as the cross elasticity is inelastic **(1)**
- Not close substitutes **(1)** so the impact so will result in a less than proportionate impact on the quantity of milk demanded **(1)**

Section C

Question	Define the term 'market failure' (Extract A, line 14).	Mark
	Answer	
12 (a)	Knowledge 2 Up to 2 marks for defining 'market failure', e.g.: • Where the market/the price mechanism (1) leads to an inefficient allocation/misallocation/over allocation/under allocation of resources (1) • A market/housing bubble in New Zealand/homelessness (1)	(2)

Question	<i>Ceteris paribus</i> , calculate the income elasticity of demand for cinema tickets. Show your working.	Mark
	Answer	
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 1 mark for definition/the formula for income elasticity of demand <u>% change in quantity demanded</u> % change in income (1) Application Up to 3 marks for calculations: • Change in quantity $7.6 - 4.7 = 2.9$ Change in quantity $\div$ original quantity $\times 100$ $2.9 \div 4.7 \times 100 = 61.70$ (1) • Change in income $4\,166 - 4\,022 = 144$ Change in income $\div$ original income $\times 100$ $144 \div 4\,022 \times 100 = 3.58$ (1) <u>% change in quantity demanded</u> % change in income $61.70 \div 3.58$ $= 17.23$ (1) NB: if correct answer (e.g. 17.23 to 2 d.p.) is given, award full marks regardless of working. Accept reasonable rounding from full calculation or from earlier stages in calculation i.e. 17.2 ($61.7021277 \div 3.58030383 = 17.2337686$) Award 3 if % sign is added to correct YED value	(4)

Question	With reference to Figure 2, explain whether chicken is a normal good or an inferior good. Answer	Mark
12 (b)	QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 2 Application 2 Knowledge 1 mark for definition of normal good: • A positive value of YED/ an increase in income leads to an increase in demand (1) 1 mark for definition of inferior good: • A negative value of YED/ an increase in income leads to a decrease in demand/ decrease in income leads to an increase in demand (1) Application Up to 2 marks for application: • YED of chicken is +1.04 (1) • A normal good/luxury good (1) • The 6.8% increase in income in Beijing will result in a 7.07% increase in demand for chicken (1)	(4)

Question	With reference to Figure 1 and the first paragraph of Extract A, analyse one demand reason and one supply reason why the price of chicken increased by 147% between May 2020 and May 2022. Illustrate your answer with a supply and demand diagram. Answer	Mark
12 (c)	Knowledge 2, Application 2, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge Up to 2 marks for the diagram showing: • Original supply, demand and equilibrium price and quantity (1) • New equilibrium price and quantity having shifted both supply and demand (1) Analysis 1 mark for condition of demand from Extract A • chicken became a more popular choice/ it is considered to be a healthier option than other meats (1) 1 mark for condition of supply from Extract A • 20% increase in the cost of chicken feed/ outbreak of bird flu/ 140 million chickens globally could not be sold for consumption (1) Application Up to 2 marks for diagram or reference to Figure 1.: • Shift demand to the right (1) • Shift supply to the left (1) • May 2020 price \$1.50 per kg to approximately \$3.70 in May 2022 (1) Price of chicken, per kg  Quantity of chicken in kg	(6)

Question	<i>Ceteris paribus</i>, calculate the income elasticity of demand for new cars. Show your workings. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS2 Calculate, use and understand percentages, percentage changes and percentage point changes QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 1 mark for definition/the formula income elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} \quad (1)$ Application Up to 3 marks for calculations: - Change in quantity of car sales $23.56\text{m} - 21.52\text{m} = 2.04$ Change in quantity $\div$ original quantity $\times 100$ $2.04\text{m} \div 21.52\text{m} \times 100 = 9.48\% \quad (1) \quad \mathbf{9.4795539033}$ - Change in income $114\,029 - 106\,837 = 7\,192$ Change in income $\div$ original income $\times 100$ $7\,192 \div 106\,837 \times 100 = 6.73\% \quad (1) \quad \mathbf{6.7317502363}$ $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}}$ $\frac{9.48}{6.73} = +1.41 \quad (1)$ Accept reasonable rounding e.g. $9.5 \div 6.7 = +1.42$ NB: if correct answer (e.g. 1.41, 1.409, 1.4086, 1.408, 1.408186, 1.42) is given, award full marks regardless of working. Accept reasonable rounding from full calculation If 1.41% or -1.41 is given award 3 marks	(4)

Question	With reference to Figure 2, explain whether demand for each of the four selected food groups is price elastic or price inelastic. Answer	Mark
12 (c)	QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 2 Application 2 Knowledge 1 mark for definition of price elastic demand: • A value between -1 and $-\infty$/ a larger than proportional change in quantity demanded to a change in price (1) 1 mark for definition of price inelastic demand • A value between 0 and -1/ a smaller than proportional change in quantity demanded to a change in price (1) Application Up to 2 marks for application: • Demand for vegetables, fish and meat is price inelastic (1) • Demand for rice is price elastic (1)	(4)

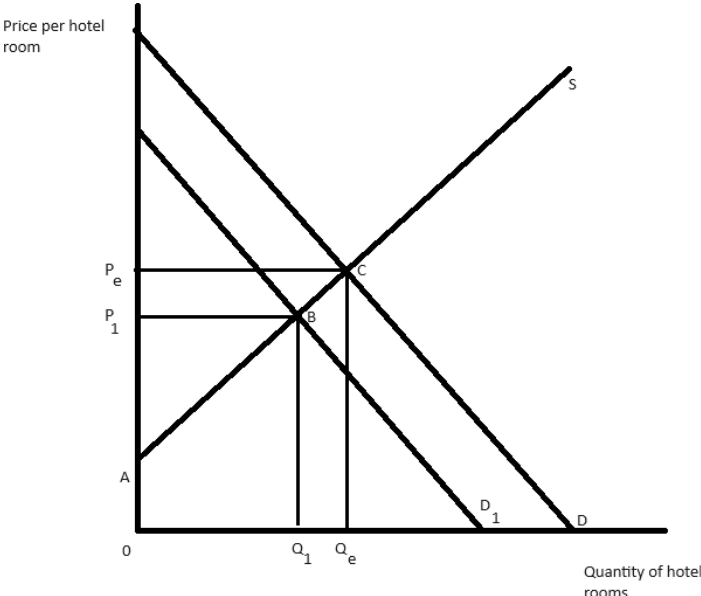
Question	With reference to the table, explain one factor likely to influence the price elasticity of demand for energy.	Mark
8	Answer Knowledge 1, Application 1 Analysis 2 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for understanding of 'price elasticity of demand' • $\% \Delta$ in Qd/ $\% \Delta$ in P/ responsiveness of quantity demanded to a change in price (1) Application 1 mark for reference to data • PED in Australia/Japan/India/Philippines is relatively inelastic / All 4 countries have price inelastic demand/ PED in Australia is -0.04/ Japan -0.12/ India -0.15/ Philippines -0.35/most inelastic in Australia/ least inelastic in Philippines (1) Analysis Up to 2 marks for analysis • Necessity of energy (1) if consumers regard it as essential they will not change consumption when prices rise (1) • Lack of available substitutes (1) so when the price rises they do not have alternatives to buy (1) • The proportion of total income spent on energy (1) if it is small there will not be a significant change in quantity demanded (1)	(4)

Question	With reference to both statements, explain the difference between normative statements and positive statements.	Mark
	Answer	

Question	Ceteris paribus, calculate the difference between the percentage change in quantity demanded for flights within developed countries and the percentage change in quantity demanded for flights within developing countries. Show your workings. You may use the last column for your calculations. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 1 mark for definition/the formula of income elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} /$ YED x % change in income = % change in quantity demanded (1) Application Up to 3 marks for calculations: - Change in quantity demanded in developed countries $1.5 \times 2.5 = 3.75\%$ - Change in quantity demanded in developing countries $2.0 \times 3.4 = 6.8\%$ Difference between percentages $6.8\% - 3.75\% = 3.05 \text{ percentage points } \mathbf{(1)}$ NB: if correct answer (e.g. 3.05/ 3.05 pp) is given, award full marks regardless of working Accept reasonable rounding Accept positive or negative responses Award 3 marks for 3.05%	(4)

Question	Ceteris paribus, explain the likely impact on excess supply of this increase in the minimum price. Illustrate your answer with a supply and demand diagram. Answer	Mark
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Question	Ceteris paribus, calculate the income elasticity of demand for bus journeys. Show your workings. Answer	Mark
10	Knowledge 1, Application 3 Quantitative skills assessed: QS8: Make calculations of elasticity and interpret the result. QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms Knowledge 1 mark for definition Responsiveness of quantity demanded to a change in income /the formula of income elasticity of demand $\frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} \quad (1)$ Application Up to 3 marks for calculations: • % change in number of bus journeys $3.4 - 2.9 / 2.9 \times 100 = 17.24137931\% \quad (1)$ • % change in income $663 - 626 / 626 \times 100 = 5.91054313\% \quad (1)$ • YED calculation $17.24137931\% \div 5.91054313\% = 2.917054986 \quad (1)$ NB: if correct answer (e.g. 2.9/2.92/2.917) is given, award full marks regardless of working. Accept reasonable rounding from full calculation (e.g. 17/6= 2.833) Award the mark for 0.172 and 0.0591 where they have not multiplied by 100 for the % change in number of bus journeys or % change in income Award 3 marks for 2.92%	(4)

Question	Between 2019 and 2022 the number of international visitors to Czechia decreased from 6.8 million to 4.5 million. Ceteris paribus, explain the likely impact on the producer surplus in the hotel market in Czechia. Illustrate your answer with a supply and demand diagram. Answer	Mark
11	Knowledge 1, Application 1, Analysis 2 Quantitative skills assessed: QS4: Construct and interpret a range of standard graphical forms QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of producer surplus e.g.: • Producer surplus is the difference between the amount a producer is willing to sell a good for and the price they actually receive/ shown by the difference between the supply curve and the market equilibrium price (1) Application 1 mark for inwards/leftwards shift of demand (1)  Analysis Up to 2 marks for showing the change in producer surplus • Producer surplus decreases (1) by $BCPeP_1$ (1) Or • Original producer surplus $ACPe$ (1) and New producer surplus ABP_1 (1)	(4)

Question	With reference to the information given, explain the difference between substitutes and complements.	Mark
	Answer	
9	Knowledge 2, Application 2 QS9: Interpret, apply and analyse information in written, graphical, tabular and numerical forms. Knowledge 1 mark for definition of substitutes e.g.: • XED is positive/where the two goods meet the same need/when the price of one good increases the quantity demanded of the other good increases (1K) 1 mark for definition of complements e.g. • XED is negative/where the two goods are used together/ consumed jointly/when the price of one good increases the quantity demanded of the other good decreases (1K) Application Up to 2 marks for applying to stem e.g.: • Cold soft drinks and hot drinks are substitutes (1AP) • Biscuits and hot drinks are complements (1AP)	(4)