Please check the examination details below before entering your candidate information

Candidate surname: StemUp Model Solution

Other names:

Centre Number | Candidate Number

Pearson Edexcel International Advanced Level

Wednesday 8 January 2025

Morning (Time: 1 hour 45 minutes)

Paper reference **WEC11/01**

Economics

International Advanced Subsidiary
UNIT 1: Markets in action

You must have:
Source Booklet (enclosed)

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **ALL** questions in Sections A, B and C.
- Answer **ONE** question in Section D.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 80.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

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

Turn over ▶

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SECTION A

Answer ALL questions 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 Singapore is considered to be close to being a free market economy, with low tax rates, minimal regulations on businesses and a reliance on the price mechanism.

Which **one** of the following is a disadvantage of a free market economy?

- ☒ **A** The profit incentive encourages investment
- ☒ **B** The non-provision of public goods
- ☒ **C** The possibility of government failure
- ☒ **D** An equal distribution of income

(Total for Question 1 = 1 mark)

2 Between November 2022 and November 2023, the average price of milk decreased by 36.8% in Ireland.

Which **one** of the following is most likely to result from the introduction of a minimum guaranteed price for milk above the equilibrium price?

- ☒ **A** An excess supply of milk
- ☒ **B** An excess demand for milk
- ☒ **C** An increase in consumer surplus
- ☒ **D** A decrease in producer surplus

(Total for Question 2 = 1 mark)

3 In 2022 it was estimated that $5.8 trillion worth of money was circulating in the USA.

Which **one** of the following is a function of money?

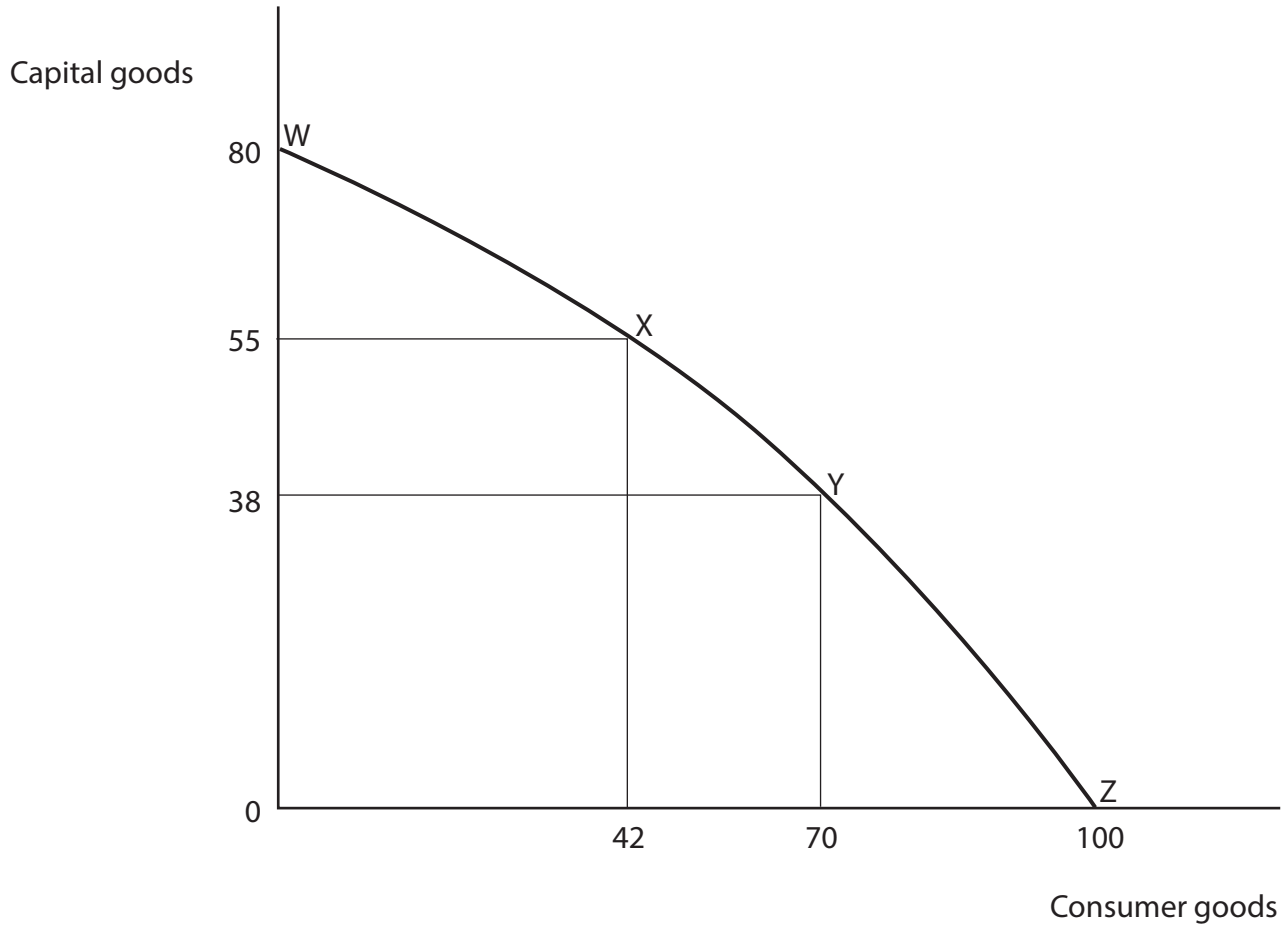
- ☒ **A** To create a moral hazard
- ☒ **B** To extend property rights
- ☒ **C** To regulate financial markets
- ☒ **D** To act as a medium of exchange

(Total for Question 3 = 1 mark)

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4 The diagram shows the production possibilities for an economy.



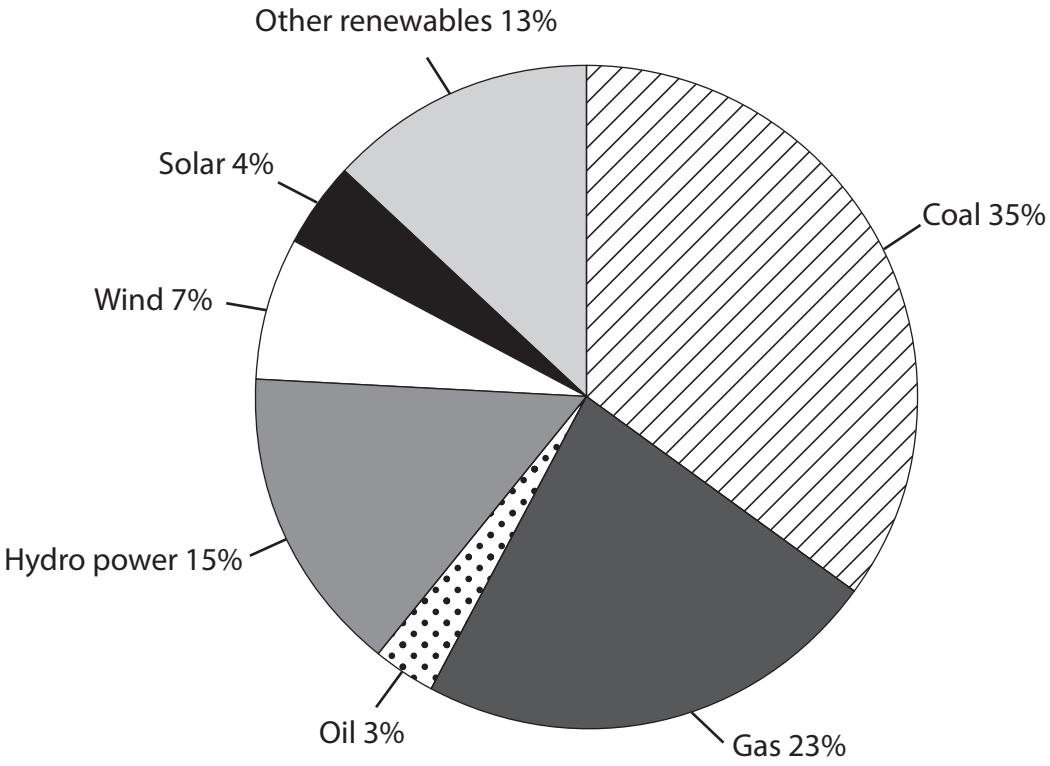
Which **one** of the following can be deduced from the diagram?

- ☒ **A** The movement from W to X has an opportunity cost of 42 consumer goods
- ☒ **B** The movement from Y to Z has an opportunity cost of 30 consumer goods
- ☒ **C** The movement from X to Y has an opportunity cost of 17 capital goods
- ☒ **D** The movement from Y to X has an opportunity cost of 28 capital goods

(Total for Question 4 = 1 mark)

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5 The chart shows the resources used to generate electricity globally in 2022.



(Source: https://www.worldenergydata.org/world-electricity-generation/)

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

- ☒ **A** Electricity was mostly generated using renewable resources
- ☒ **B** Electricity was mostly generated using non-renewable resources
- ☒ **C** 58% of electricity was generated using non-renewable resources
- ☒ **D** 26% of electricity was generated using renewable resources

(Total for Question 5 = 1 mark)

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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

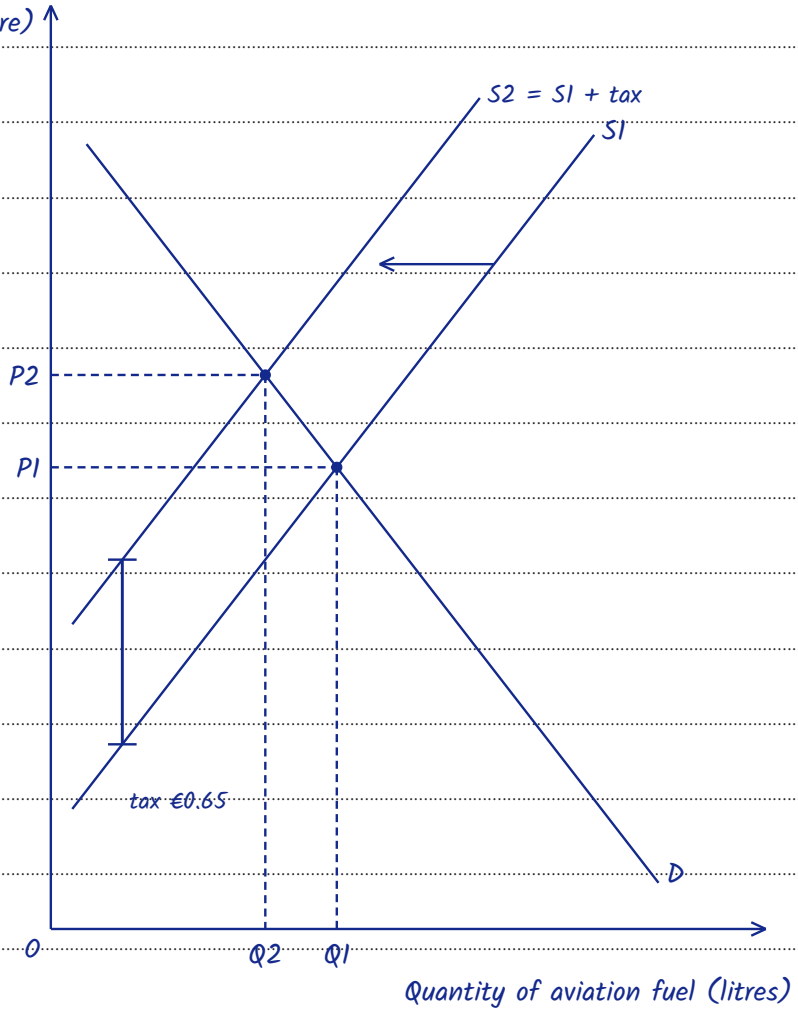
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SECTION B

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

7 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 this indirect tax on aviation fuel for private jets.



The €0.65 per litre indirect tax raises the cost of supplying aviation fuel for private jets, so supply shifts left (vertically upwards by €0.65) from S1 to S2. Price rises from P1 to P2 and the quantity bought falls from Q1 to Q2.

(Total for Question 7 = 4 marks)

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8 The table shows annual percentage changes in house prices in Australia between 2020 and 2022.

	Percentage change
2020	3.6
2021	24.5
2022	–4.9

(Source adapted from: https://www.abc.net.au/news/2024-01-02/australia-house-pricing-home-value-index-2023/103278170)

Explain **one** reason why there might have been a housing market bubble in Australia in 2021.

A housing market bubble is a period when house prices rise rapidly, far above their true (intrinsic) value, so the bubble is likely to burst and prices then fall sharply.

The data shows this: house prices in Australia rose by only 3.6% in 2020 but by 24.5% in 2021, before falling by 4.9% in 2022.

One reason is speculation. After the first price rises, many buyers purchased houses not to live in but in the hope that their value would keep increasing, so they could sell them later for a profit. This extra speculative demand shifted demand for houses to the right, and because the supply of housing is price inelastic in the short run, prices were bid up even further. Rising prices then attracted yet more speculators (herd behaviour), pushing prices well above their true value until the bubble burst in 2022.

(Total for Question 8 = 4 marks)

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9 In 2021 the global price of cotton increased substantially. This resulted in an increase in the price of a cotton t-shirt from $1.50 to $2.

Rising fertiliser costs caused farmers to switch from growing wheat for bread production to growing wheat for animal feed that requires less fertiliser.

With reference to the information given, explain the difference between the rationing function and the incentive function of the price mechanism.

The rationing function of the price mechanism means that when a good or resource becomes scarce its price rises, which discourages demand, so there is a contraction in quantity demanded and the good goes to those most willing and able to pay. When the global price of cotton rose, cotton t-shirts rose from $1.50 to $2, so some consumers bought fewer t-shirts and the scarce cotton was rationed to those most able to afford it.

The incentive function means that a higher price (and so higher profit) gives firms an incentive to supply more of a good, so they extend supply and move resources into producing it. Rising fertiliser costs made wheat for bread less profitable, so farmers had an incentive to switch to growing wheat for animal feed, which needs less fertiliser and earns them a higher profit. The higher t-shirt price also gives firms an incentive to produce more t-shirts.

So the difference is that rationing works on buyers, reducing quantity demanded, while the incentive function works on producers, encouraging them to supply more or switch production.

(Total for Question 9 = 4 marks)

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10 The table shows the number of bus journeys taken by individuals and the average weekly income for the UK in 2022 and 2023.

	Number of bus journeys	Average weekly income per person
2022	2.9 billion	£626
2023	3.4 billion	£663

Ceteris paribus, calculate the income elasticity of demand for bus journeys.

Show your workings.

Income elasticity of demand (YED) = % change in quantity demanded ÷ % change in income

% change in quantity demanded = (3.4bn − 2.9bn) ÷ 2.9bn × 100

= 0.5 ÷ 2.9 × 100 = 17.24%

% change in income = (£663 − £626) ÷ £626 × 100

= 37 ÷ 626 × 100 = 5.91%

YED = 17.24 ÷ 5.91 = +2.92 (2 d.p.)

YED is positive and greater than 1, so bus journeys in the UK behaved as a normal, income elastic good: demand rose more than proportionately as average weekly income rose.

(Total for Question 10 = 4 marks)

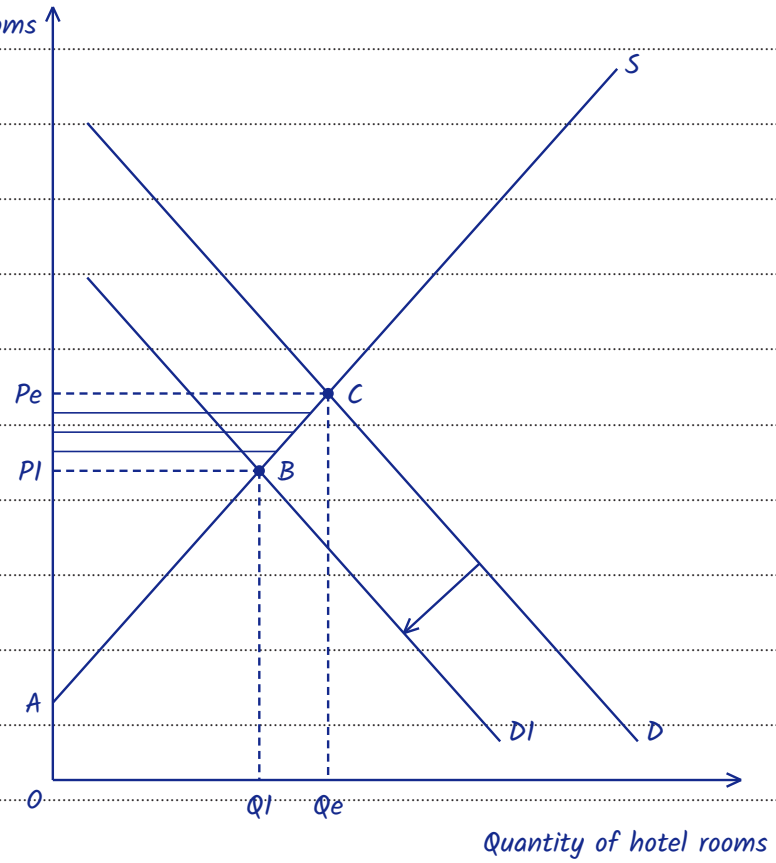
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11 Between 2019 and 2022 the number of international visitors to Czechia decreased from 6.8 million to 4.5 million.

Ceteris paribus, explain the likely impact on producer surplus in the hotel market in Czechia.

Illustrate your answer with a supply and demand diagram.

Producer surplus is the difference between the price producers are willing to sell a good for and the price they actually receive (the area above the supply curve and below the market price).



The fall in international visitors from 6.8m to 4.5m reduces demand for hotel rooms, shifting demand left from D to D1. Price falls from Pe to PI and quantity falls from Qe to Q1. Producer surplus falls from area ACPe to area ABPI, a decrease of the shaded area BCPePI, as hotels now sell fewer rooms at a lower price.

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS

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SECTION C BEGINS ON THE NEXT PAGE.

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 'forward market'. (Extract A, line 10)

(2)

(b) With reference to Figure 1 and Extract A, analyse **one** supply factor and **one** demand factor that caused the price of cocoa to increase by approximately 68% between November 2022 and November 2023.

Illustrate your answer with a supply and demand diagram.

(6)

(c) With reference to Figure 2, explain the term 'price inelastic supply'. Refer to the short-run and the long-run in your answer.

(4)

(d) With reference to Extract C, examine **two** effects of the Government of Ghana's decision to end the subsidies paid to cocoa farmers.

(8)

(e) With reference to Extract B, discuss the likely external costs associated with cocoa production.

Illustrate your answer with an externalities diagram.

(14)

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12 (a) Define the term 'forward market'. (Extract A, line 10)

(2)

A forward market is a market in which a buyer and a seller agree a price now for a commodity (such as cocoa) to be delivered and paid for at a future date, for example in six months' time.

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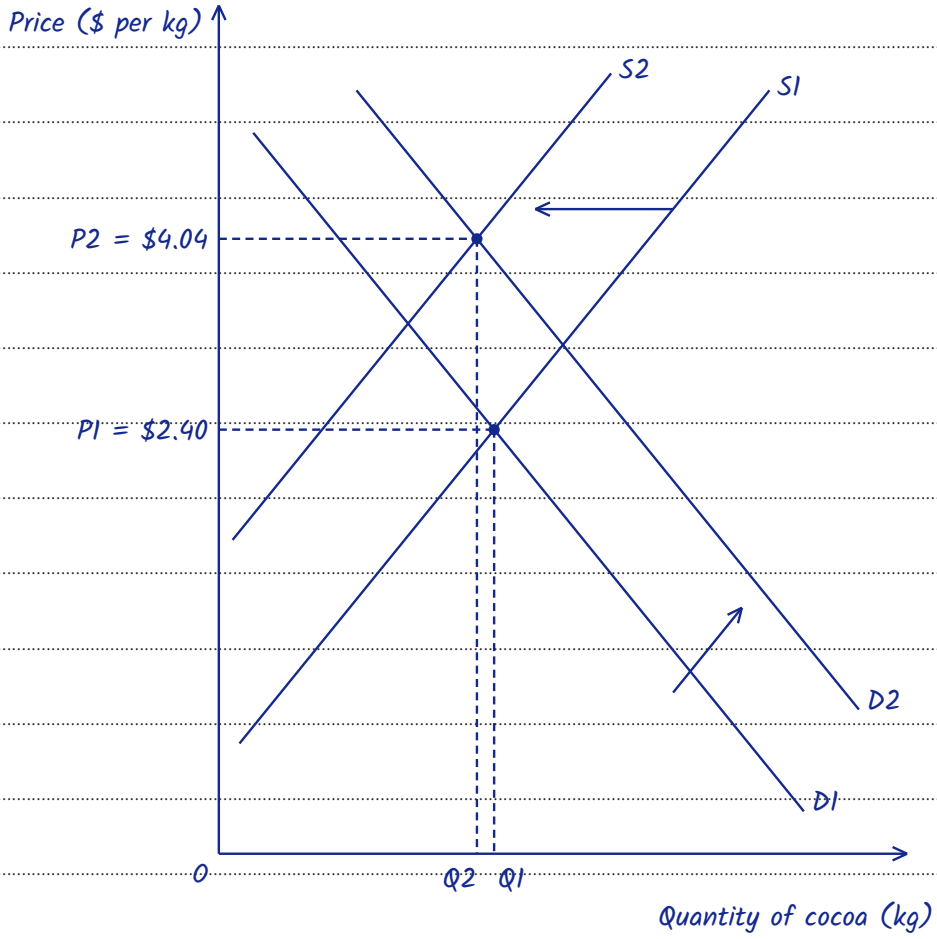
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(b) With reference to Figure 1 and Extract A, analyse **one** supply factor and **one** demand factor that caused the price of cocoa to increase by approximately 68% between November 2022 and November 2023.

Illustrate your answer with a supply and demand diagram.

(6)

Figure 1 shows the world price of cocoa rose from about $2.40 per kg in November 2022 to $4.04 per kg in November 2023, an increase of approximately 68%. This was caused by both a fall in supply and a rise in demand, shown in the diagram.



Supply factor: Côte d'Ivoire, the world's largest grower, saw a 36.3% fall in cocoa production because flooding and swollen shoot disease destroyed crops on cocoa farms. Less cocoa is available at every price, so supply shifts left from S1 to S2. At the original price there is now excess demand, so the price is bid up.

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Demand factor: there is growing evidence of the health benefits of cocoa, so chocolate and drinking chocolate makers have increased the cocoa content of their products and need more cocoa. This derived demand shifts demand right from D1 to D2, again creating excess demand at P1.

Together the two shifts raise the price from P1 to P2 ($2.40 to $4.04 per kg). Because supply fell by more than demand rose, quantity falls slightly from Q1 to Q2, and since supply of cocoa is price inelastic the price rise is very large.

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(c) With reference to Figure 2, explain the term 'price inelastic supply'. Refer to the short-run and the long-run in your answer.

(4)

Price inelastic supply means that PES is between 0 and 1: a change in price causes a less than proportionate change in quantity supplied.

Figure 2 shows that the short-run PES for cocoa is +0.07, so a 10% rise in price increases quantity supplied by only 0.7%. This is because cocoa trees take years to grow and farmers cannot quickly plant more. The long-run PES is +0.57, so a 10% price rise increases quantity supplied by 5.7%. Supply is inelastic in both periods, but it becomes less inelastic (more elastic) in the long run as farmers have time to plant new trees and bring more land into cocoa production.

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(d) With reference to Extract C, examine **two** effects of the Government of Ghana's decision to end the subsidies paid to cocoa farmers.

(8)

Between 2019 and 2020 the Government of Ghana doubled its spending on cocoa subsidies from $200 million to $400 million, to help farmers buy fertiliser and keep their incomes from being too low, but it found these payments difficult to fund and ended them in 2023.

One effect is higher costs and lower output for cocoa farmers. Without the subsidy farmers must pay the full price of fertiliser, so their costs of production rise and supply of cocoa shifts to the left. Farmers are discouraged from growing cocoa, so output falls, which may lead to lower farm incomes and less employment in the cocoa sector. The price of cocoa also rises, reducing consumer surplus.

However, the size of this effect depends on how dependent farmers were on the subsidy. If many farmers relied on it to keep their incomes above a basic level, losing $400 million a year would cause a large fall in income and could push farmers into poverty. On the other hand, removing the subsidy may force farmers to invest in more productive methods to cut costs, so output might fall less than expected in the long run.

A second effect is a lower opportunity cost for the government. The $400 million no longer spent on subsidies can be used for other priorities such as healthcare, education or infrastructure, or to reduce government borrowing, since the Government found the payments difficult to fund. Less fertiliser use may also reduce external costs such as water pollution.

However, the overall effect depends on the price elasticity of demand for cocoa. As cocoa prices were already at a 46-year high, a further fall in supply could raise prices substantially if demand is price inelastic, so lower output might partly be offset by higher prices for farmers. Ghana

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could also lose export revenue if output falls a lot, which would reduce the benefit to the government.

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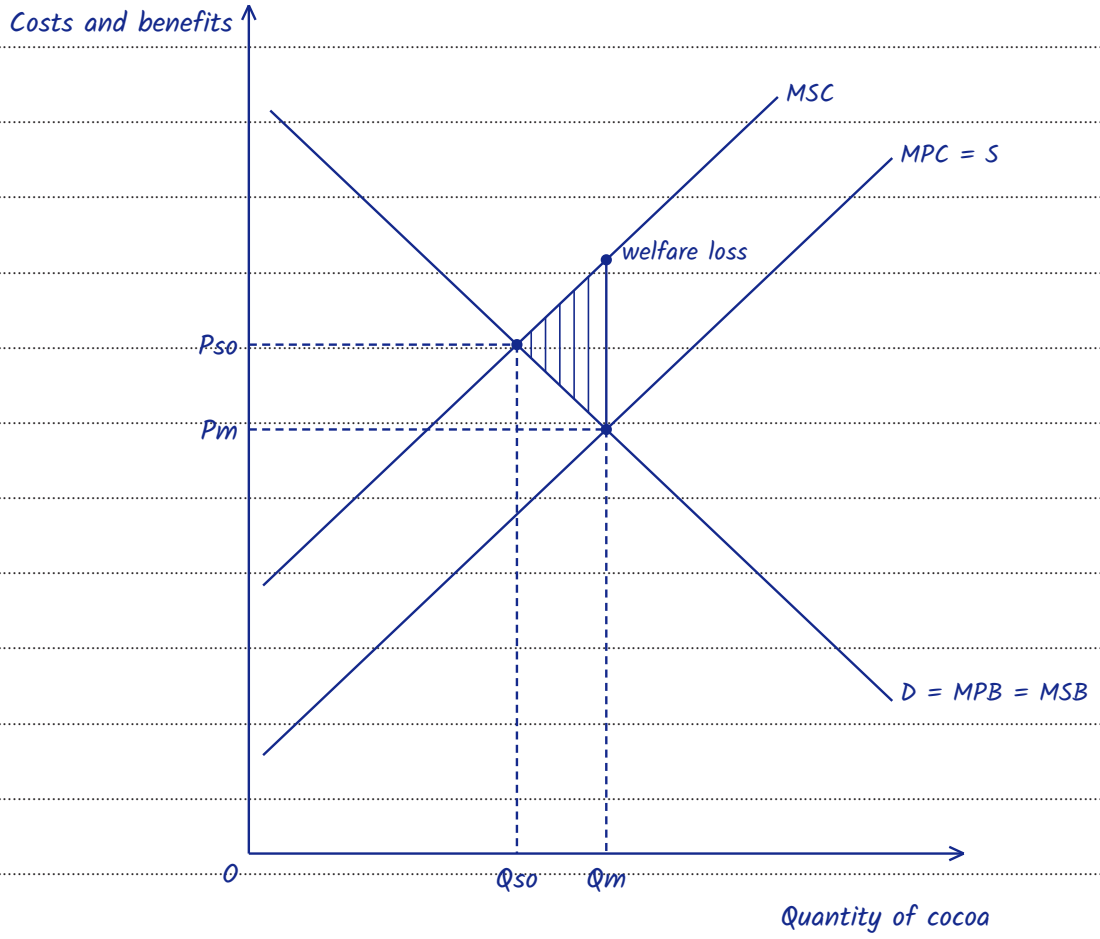
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(e) With reference to Extract B, discuss the likely external costs associated with cocoa production.

Illustrate your answer with an externalities diagram.

(14)

External costs are the negative impacts of production or consumption on third parties who are not involved in the transaction and are not compensated. With external costs the marginal social cost (MSC) of producing cocoa is above the marginal private cost (MPC) to the farmer, as shown in the diagram.



Farmers only consider their private costs, so the market produces at Qm where MPC = MPB, at price Pm. The socially optimal output is Qso where MSC = MSB, at a higher price Pso. So cocoa is overproduced by Qm – Qso and underpriced, creating the shaded welfare loss triangle.

The first external cost is deforestation. Over the last three decades the growth of cocoa farming

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has caused a 70% loss of the forests in Ghana and Côte d'Ivoire. This destroys the habitats of animals and reduces biodiversity. Fewer trees also means less carbon dioxide is absorbed, which adds to global warming, leading to rising sea levels, flooding and droughts that harm people all over the world who have no link to cocoa production.

The second external cost is pesticide pollution. Pesticide use in cocoa production rose by 20% between 2014 and 2019. These pesticides are often highly hazardous, may cause cancer and pollute drinking water and rivers. Local people who drink the water suffer illness, so the government must spend more on healthcare, which has an opportunity cost, and fishing and other farming businesses lose income.

The third external cost is child labour. The share of workers on cocoa plantations who are children rose from 5% to 24% between 2009 and 2019, as farmers who receive only 6.6% of chocolate earnings struggle to survive. Children who work miss out on education, so their skills, future earnings and life chances are reduced. This lowers the productivity of the future labour force and so the growth prospects of Ghana and Côte d'Ivoire.

However, the external costs are very difficult to measure and value. It is hard to put a money value on lost biodiversity or on the long-term damage to a child's education, so the true size of the welfare loss is uncertain, and the gap between MSC and MPC may be larger or smaller than shown.

The time period also matters. Many of these costs, such as global warming from lost forests and cancer from pesticides, may not be noticeable in the short run and only emerge in the long run, so they are often ignored. Yet the 70% loss of forests and the rise in child labour from 5% to 24% show the problem is large and getting worse, so the external costs are likely to grow

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over time.

Also, cocoa production brings private and external benefits, such as jobs and incomes for poor farmers and export revenue for Ghana and Côte d'Ivoire, which may partly offset the external costs. Some costs, such as child labour, are caused more by low farm incomes than by cocoa itself.

Overall, the most significant external cost is probably deforestation, as it is the largest in scale (70% of forests) and its effects on global warming are global and irreversible, while pesticide and child labour costs are more local but still serious and rising.

(Total for Question 12 = 34 marks)

TOTAL FOR SECTION C = 34 MARKS

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SECTION D

Answer ONE question from this section.

Write your answer in the space provided.

EITHER

13 In 2015 the Government of South Korea introduced a tradeable pollution permit scheme. This scheme applies to 70% of all businesses and includes power generation, manufacturing and domestic aviation.

Evaluate the possible benefits of introducing a tradeable pollution permit scheme.

(Total for Question 13 = 20 marks)

OR

14 Between 2012 and 2021 government spending on education per person per year in high-income countries increased from $7 507 to $8 515. In low-income countries the increase was from $42 to $56 per person.

Evaluate the microeconomic benefits of increased spending on education.

(Total for Question 14 = 20 marks)

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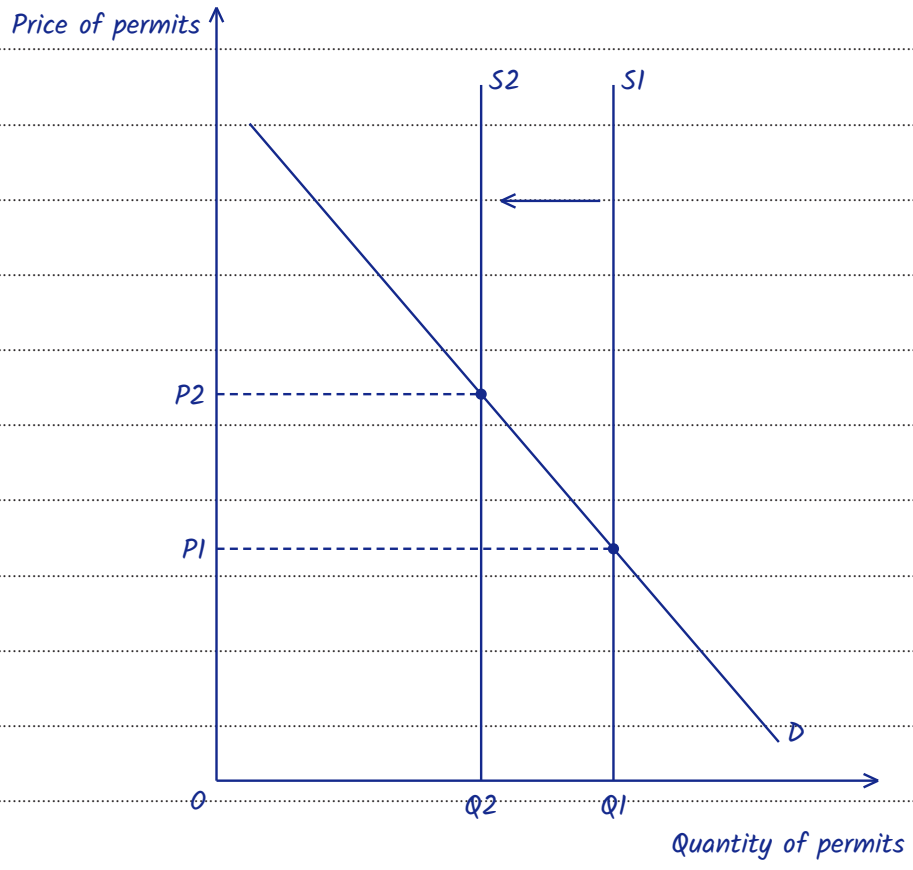
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Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 13** ☒ **Question 14** ☐

Write your answer here:

A tradeable pollution permit scheme is where the government sets a cap on the total amount of pollution that firms in selected industries may emit and issues permits up to this limit. Each permit allows a firm to emit a certain amount of pollution, and firms that pollute less than their allowance can sell spare permits to firms that want to pollute more. In South Korea the scheme covers 70% of all businesses, including power generation, manufacturing and domestic aviation.



The first benefit is that total pollution is reduced to a set level. Because the government decides the number of permits, the supply of permits is fixed (perfectly inelastic), as shown by S1. Each year the Government of South Korea can reduce the number of permits from Q1 to Q2,

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so the supply shifts left to S2 and the price of permits rises from P1 to P2. Emissions from power stations, factories and domestic flights therefore fall to a known level, which reduces external costs such as global warming, flooding, wildfires and the health costs of air pollution, moving output closer to the social optimum.

However, this depends on the government having accurate information. If it does not know the right number of permits and issues too many, the price of permits falls, firms can pollute cheaply and emissions stay high, which is a form of government failure. Also, 30% of businesses are outside the scheme, so their pollution is not reduced at all.

The second benefit is that firms have an incentive to reduce pollution. Permits become a cost of production, so a firm that pollutes above its allowance must buy extra permits, raising its costs and reducing its profits. A firm that cuts its emissions can sell its surplus permits, increasing its revenue and profit. This rewards firms that develop cleaner technology, such as power generators switching from coal to renewable energy, so pollution is cut by the firms that can do it most cheaply and the reduction is achieved at the lowest overall cost.

However, the incentive is weak if the permit price is low, as it may be cheaper simply to buy permits than to invest in cleaner technology. Large, profitable firms may just pass the higher costs on to consumers through higher electricity prices and air fares, especially if demand is price inelastic.

The third benefit is innovation and dynamic efficiency. To sell permits, firms in manufacturing and aviation invest in research and development into cleaner production methods and more fuel-efficient engines. This may lower their long-run costs, and new green technologies can be sold abroad, increasing revenue and creating new jobs. Unlike regulation, the market allocates

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permits to the firms that value them most.

However, investment in new technology is costly and takes time, so the benefits may only appear in the long run. In the short run, profits and employment in South Korean firms may fall compared with firms not in the scheme. Domestic businesses may also become less price competitive against foreign firms that do not pay for pollution, and some may relocate to countries without a permit scheme, so pollution is simply moved abroad.

There are also costs of running the scheme. The government must monitor the emissions of 70% of all businesses, which involves high administration costs, and firms may cheat by under-reporting their pollution. An indirect tax on pollution might be better in some cases, as it raises revenue for the government that can be used to correct the damage caused by pollution, whereas permits given away for free raise no revenue unless they are auctioned.

In conclusion, a tradeable pollution permit scheme has significant benefits for South Korea: it guarantees a limit on emissions, cuts pollution at the lowest cost and encourages innovation. Because it covers 70% of businesses, including the heavily polluting power and manufacturing sectors, the impact is likely to be large. However, the size of the benefits depends mainly on the government setting the right number of permits and gradually reducing them, monitoring firms effectively, and whether firms relocate abroad. If the cap is set correctly, the benefits are likely to outweigh the costs in the long run.

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TOTAL FOR SECTION D = 20 MARKS
TOTAL FOR PAPER = 80 MARKS

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Pearson Edexcel International Advanced Level

Wednesday 8 January 2025

Morning (Time: 1 hour 45 minutes)

Paper reference **WEC11/01**

Economics

International Advanced Subsidiary

UNIT 1: Markets in action

Source Booklet

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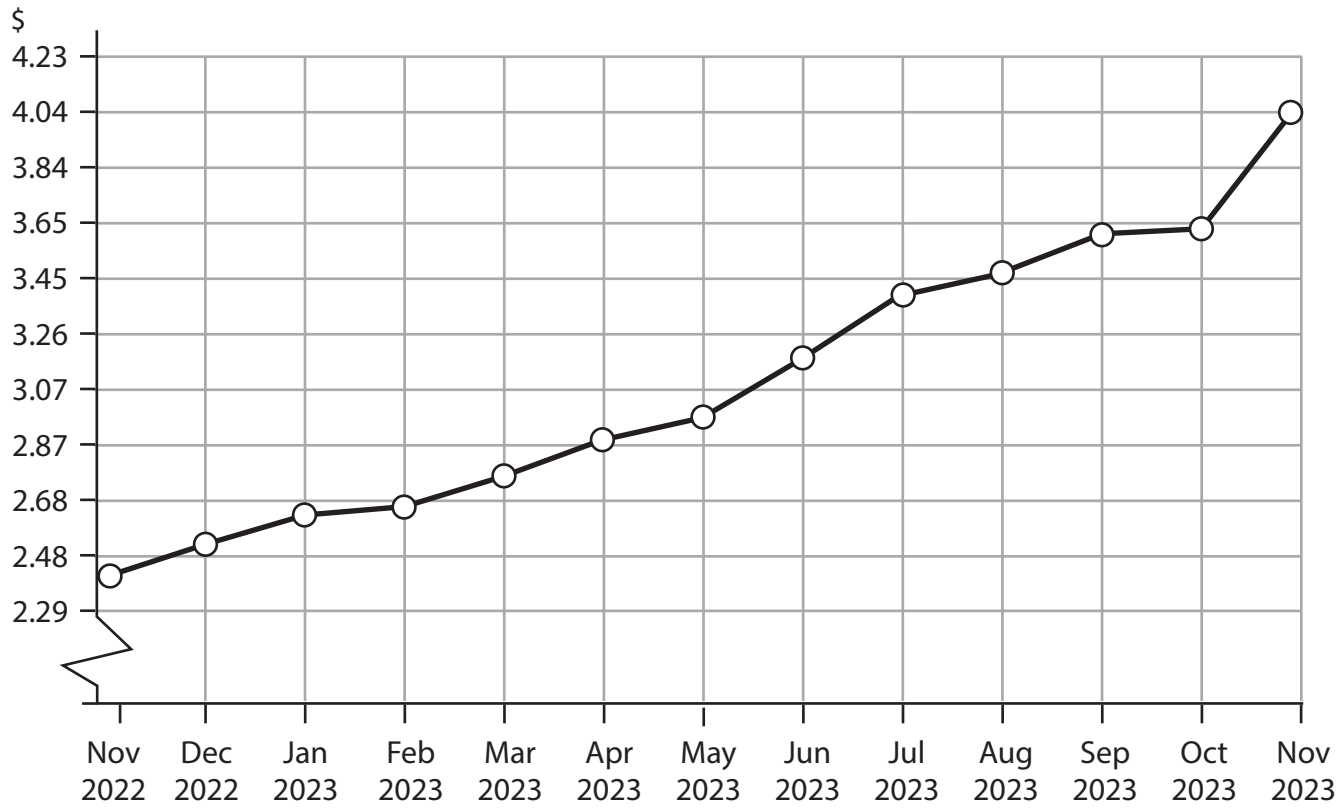
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Sources for use with Section C.

The cocoa market

Figure 1 World price of cocoa, dollars per kilogram, November 2022 to November 2023



Extract A Cocoa price rises rapidly

By November 2023 cocoa prices were at their highest level for 46 years. Between November 2022 and November 2023 prices increased by approximately 68%. Côte d'Ivoire, the world's largest grower, experienced a 36.3% decrease in production compared to the previous year. Flooding and swollen shoot disease on cocoa farms caused this significant fall in cocoa production.

More cocoa has been required by the chocolate and drinking chocolate markets. There is growing evidence of the health benefits of cocoa so chocolate makers and drinking chocolate makers have been increasing the cocoa content in their products.

The forward market price for cocoa for six months' time more than doubled between April 2023 and April 2024.

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Figure 2 Estimated price elasticity of supply for cocoa

	Estimated elasticity
Short-run price elasticity of supply	+0.07
Long-run price elasticity of supply	+0.57

Extract B The true cost of cocoa production

Cocoa farming has resulted in the loss of large areas of rainforest. Over the last three decades the increase in cocoa farming has resulted in a 70% loss of the forests in Ghana and Côte d'Ivoire.

Between 2014 and 2019 the use of pesticides in the production of cocoa increased by 20% in Ghana and Côte d'Ivoire. These pesticides are often highly hazardous and may cause cancer. In addition, they can pollute drinking water and rivers.

The percentage of earnings for each sector involved in the chocolate market is as follows:

- Cocoa farmers 6.6%
- Transport businesses 2.1%
- Processors 7.6%
- Marketing businesses 4.3%
- Chocolate manufacturers 35.2%
- Retailers 44.2%

Many cocoa farmers have difficulty in meeting their basic needs. Some are even unable to afford sufficient food, shelter or clothing. As farmers struggle to survive financially, many now employ children. Between 2009 and 2019 the percentage of workers on cocoa plantations who were children increased from 5% to 24% in Ghana and Côte d'Ivoire.

Extract C Subsidies for cocoa farmers in Ghana

Between 2019 and 2020 the Government of Ghana increased the amount it spent subsidising cocoa farmers from $200 million to $400 million. The funds were paid to enable farmers to purchase fertiliser and to ensure that farmers' incomes were not too low. However, the Government found it difficult to fund these payments to cocoa farmers and it decided to end these subsidies in 2023.

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Acknowledgements

Figure 1 adapted from:
https://www.indexmundi.com/commodities/?commodity=cocoa-beans&months=12

Extract A adapted from:
https://tradingeconomics.com/commodity/cocoa
https://www.reuters.com/markets/commodities/chocolate-making-ingredient-cocoa-hits-highest-price-46-years-2023-06-28/
https://www.investing.com/commodities/london-cocoa

Figure 2 adapted from:
https://ageconsearch.umn.edu/record/258587

Extract B adapted from:
https://www.iisd.org/system/files/2022-11/2022-global-market-report-cocoa.pdf
https://www.inkota.de/sites/default/files/2023-08/info_sheet_pesticides_in_cocoa_production_en_final.pdf
https://www.visualcapitalist.com/wp-content/uploads/2020/10/supplemental-3.jpg

Extract C adapted from:
https://thecocoapost.com/ghana-pays-400m-yearly-in-subsidies-as-cocoa-prices-tumble/
https://www.bloomberg.com/news/articles/2023-05-19/imf-backed-program-aims-to-cut-ghana-cocoa-regulator-s-losses