Please check the examination details below before entering your candidate information

Candidate surname
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Other names

Pearson Edexcel
International Advanced Level

Centre Number

Candidate Number

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.
- Good luck with your examination.

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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 **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?

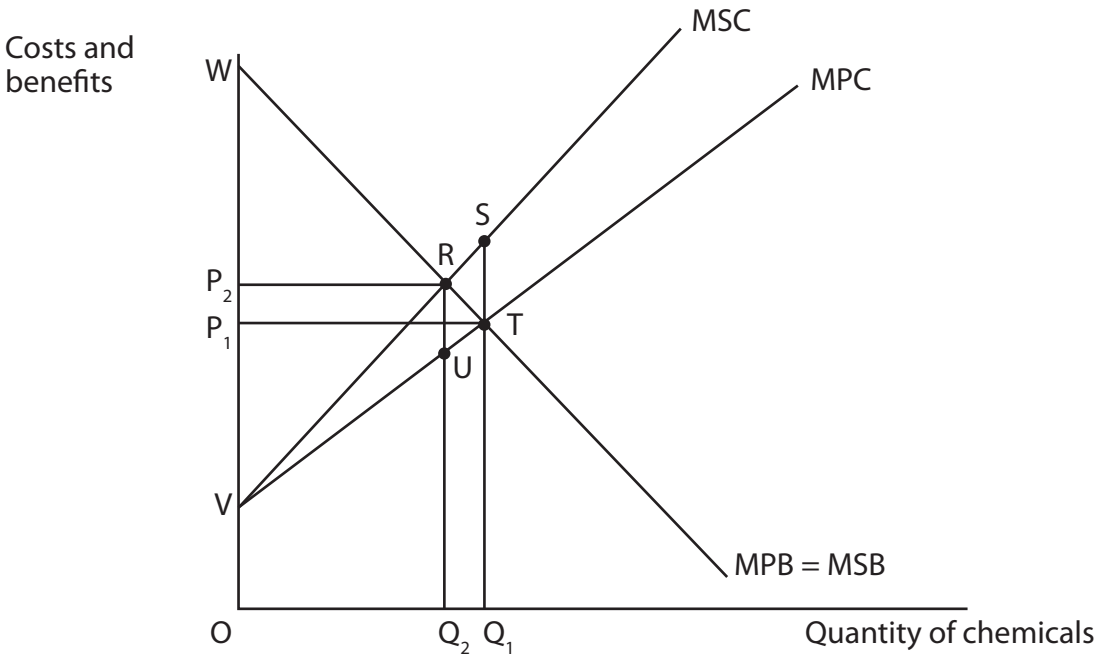
- ☒ **A** The free-rider problem that results in the underprovision of public goods
- ☒ **B** Higher prices create an incentive for firms to increase the production of a good
- ☒ **C** New government regulations that result in excessive administration costs
- ☒ **D** Government provision of healthcare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

(Total for Question 3 = 1 mark)

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4 The diagram shows the market for the production of chemicals.



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

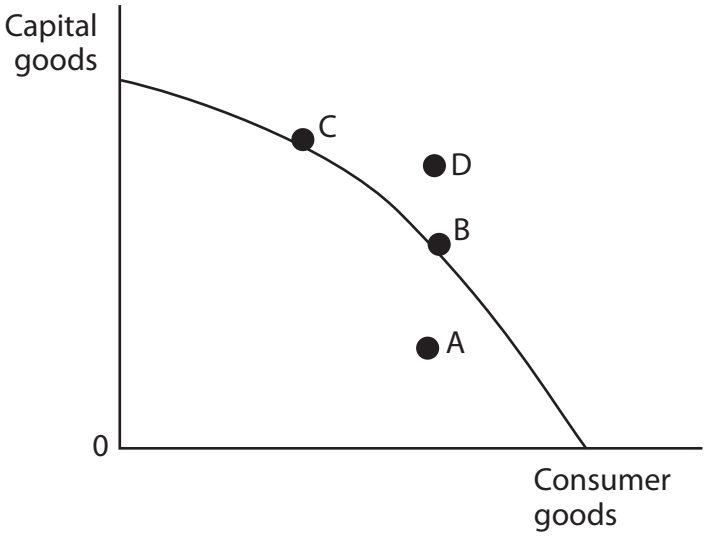
- ☒ **A** The social optimum quantity is Q_1 and price is P_1
- ☒ **B** The market equilibrium quantity is Q_2 and price is P_2
- ☒ **C** The welfare loss area is RTU
- ☒ **D** The welfare loss area is RST

(Total for Question 4 = 1 mark)

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5 The diagram shows a production possibility frontier for an economy.



Which point on the diagram shows the position that will lead to the fastest rate of economic growth?

- ☒ **A**
- ☒ **B**
- ☒ **C**
- ☒ **D**

(Total for Question 5 = 1 mark)

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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

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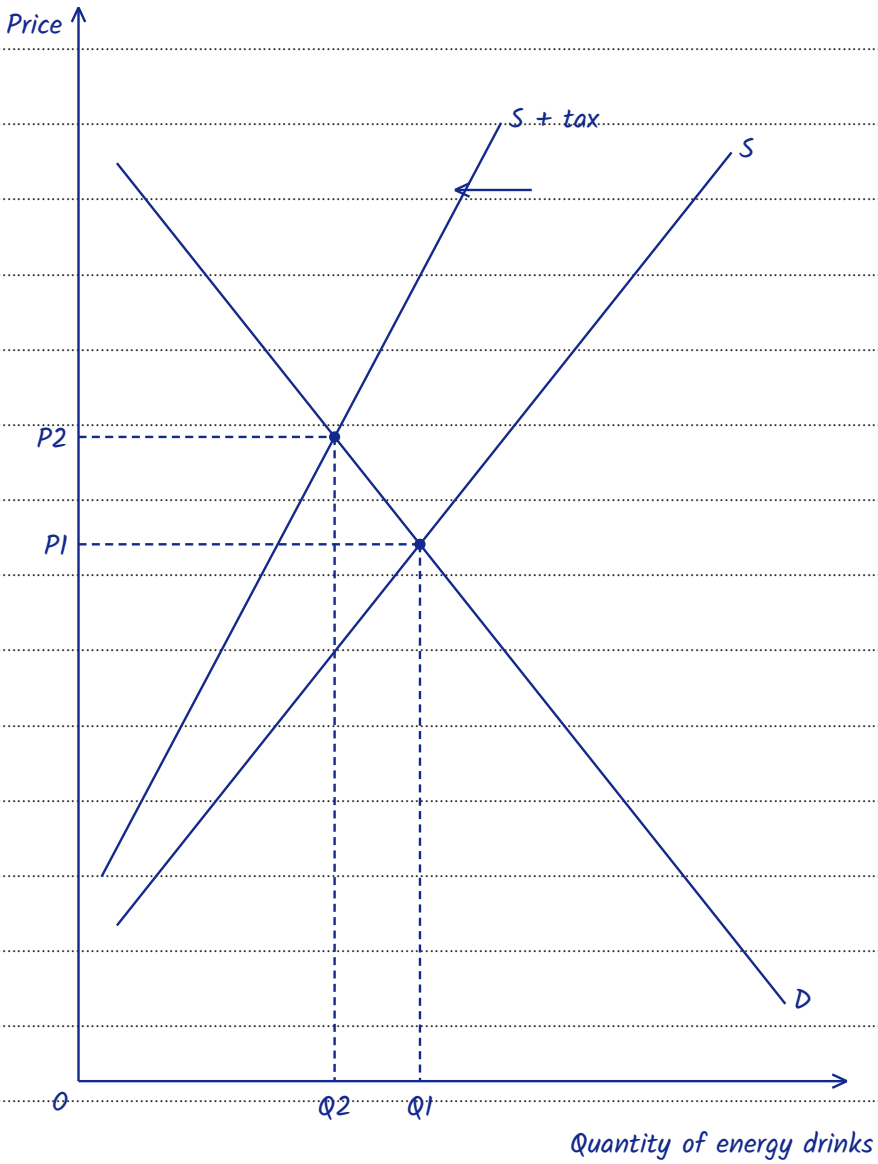
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SECTION B

Answer ALL questions in this section in the space provided.

7 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 the UAE.



The 50% ad valorem tax raises firms' costs, so supply pivots left from S to S + tax (the gap grows as price rises). Equilibrium price rises from P1 to P2 and quantity falls from Q1 to Q2.

(Total for Question 7 = 4 marks)

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8 The table shows the change in how electricity was generated between 2017 and 2018 in a group of developed economies.

Resource	Change in electricity generation, terawatt hours (TWh)
Coal	–105
Natural gas	+156
Hydro	+26
Wind	+52
Solar	+52

With reference to the change in how electricity was generated, explain the difference between 'renewable resources' and 'non-renewable resources'.

Renewable resources are replenished naturally in a short period of time, so they can be used again and again without running out. In the table, hydro, wind and solar are renewable: the water, wind and sunlight used are not used up, and generation from them rose by 26, 52 and 52 TWh.

Non-renewable resources have a finite supply: they are used up faster than they can be replaced, so the stock is depleted with use. Coal and natural gas are non-renewable, as burning them to make electricity uses them up for ever. Coal generation fell by 105 TWh while natural gas rose by 156 TWh.

So the key difference is whether the stock runs down when it is used. Total renewable generation rose by 130 TWh (26 + 52 + 52), a shift towards resources that will not run out.

(Total for Question 8 = 4 marks)

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9 Adam Smith wrote that by applying the division of labour in a pin factory, ten workers were able to increase production from 200 pins per day to 48 000 pins per day.

Explain **one** advantage to firms of using division of labour to organise production.

Division of labour is where production is broken down into separate tasks and each worker specialises in one task.

One advantage is higher labour productivity (output per worker). In Adam Smith's pin factory, output per worker rose from 20 pins per day (200 ÷ 10) to 4 800 pins per day (48 000 ÷ 10), which is 240 times as many.

This happens because each worker repeats one simple task, so they become expert at it through practice and work faster. They also do not waste time moving between tasks or changing tools, and they only need to be trained in one task, which reduces training costs.

As the same ten workers produce far more pins, the labour cost of each pin falls, so average costs fall. The firm can then cut its price to become more competitive, or keep the price the same and earn a higher profit on each pin.

(Total for Question 9 = 4 marks)

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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.

PED = % change in quantity demanded ÷ % change in price

% change in price = (8.99 − 7.99) ÷ 7.99 × 100

= 1 ÷ 7.99 × 100 = +12.52%

% change in quantity demanded = −8%

PED = −8% ÷ 12.52% = −0.64 (to 2 d.p.)

The PED is between 0 and −1, so demand for the Netflix basic subscription is price inelastic: the 12.52% rise in price causes a proportionately smaller 8% fall in the number of subscribers, so Netflix's total revenue from the basic subscription is likely to rise.

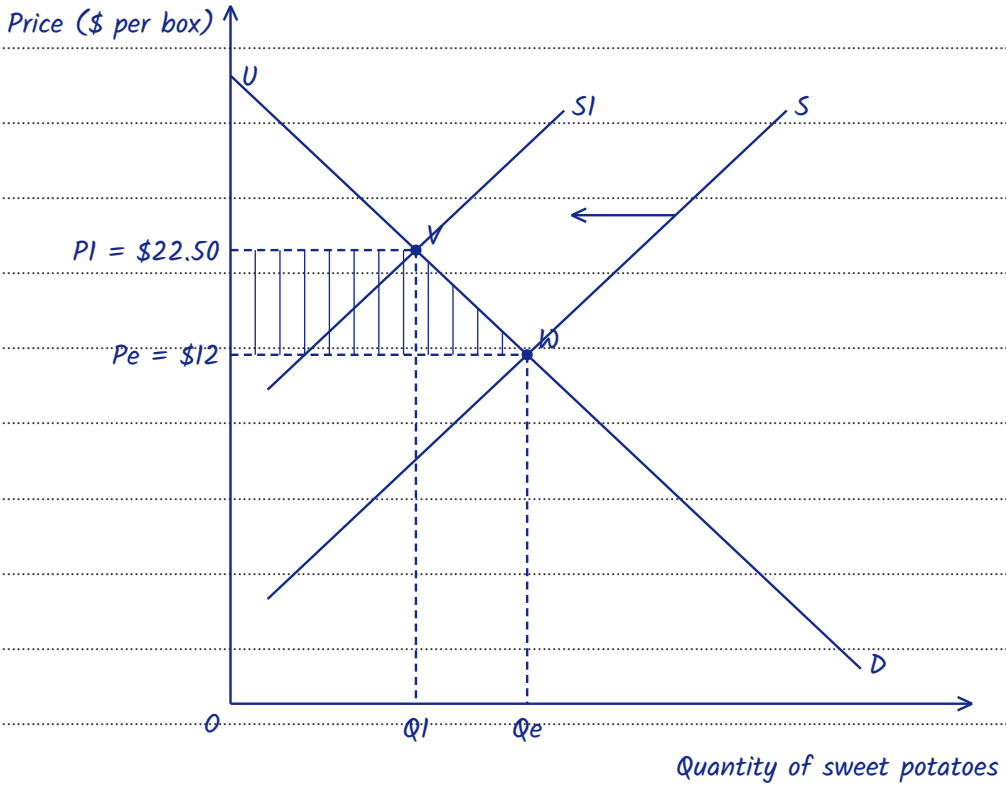
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11 Between August 2018 and August 2019 the world price of sweet potatoes increased from $12 to $22.50 per box. This was caused by Hurricane Florence and heavy rains in the USA, the world's largest supplier.

Explain the likely impact of this change in price on consumer surplus in the market for sweet potatoes. Illustrate your answer with a diagram.



Consumer surplus is the difference between the price consumers are willing to pay and the market price they actually pay. Hurricane Florence and heavy rain cut the US harvest, so supply shifts left from S to S1 and price rises from Pe = $12 to P1 = $22.50 per box. Consumer surplus falls from area PeUW to the smaller area P1UV, so it decreases by the shaded area PePIVW: consumers pay $10.50 more per box and buy fewer boxes (Q1 instead of Qe).

(Total for Question 11 = 4 marks)

TOTAL FOR SECTION B = 20 MARKS

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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 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.

Illustrate your answer with a supply and demand diagram.

(6)

(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.

Illustrate your answer with an appropriate diagram.

(14)

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12 (a) Define the term 'substitutes' (Extract A, line 9).

(2)

Substitutes are goods that serve the same need, so consumers can switch between them and receive similar benefits, eg sugar and artificial sweeteners (Extract A). They have a positive cross elasticity of demand: if the price of sugar rises, the quantity demanded of artificial sweeteners increases.

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

(4)

Price elasticity of supply (PES) measures the responsiveness of quantity supplied to a change in price: PES = % change in quantity supplied ÷ % change in price.

One factor is the ability to store the good (the level of stocks). Extract A says that in 2018 there was a surplus of 17 million tonnes, so large quantities of sugar were held in storage. If the price of sugar rises, producers can quickly release sugar from storage onto the market, so quantity supplied can rise quickly even though new sugar cane takes one year (warm countries) to two years (cooler countries) to mature. This makes the supply of sugar relatively price elastic, at least in the short run while the stocks last.

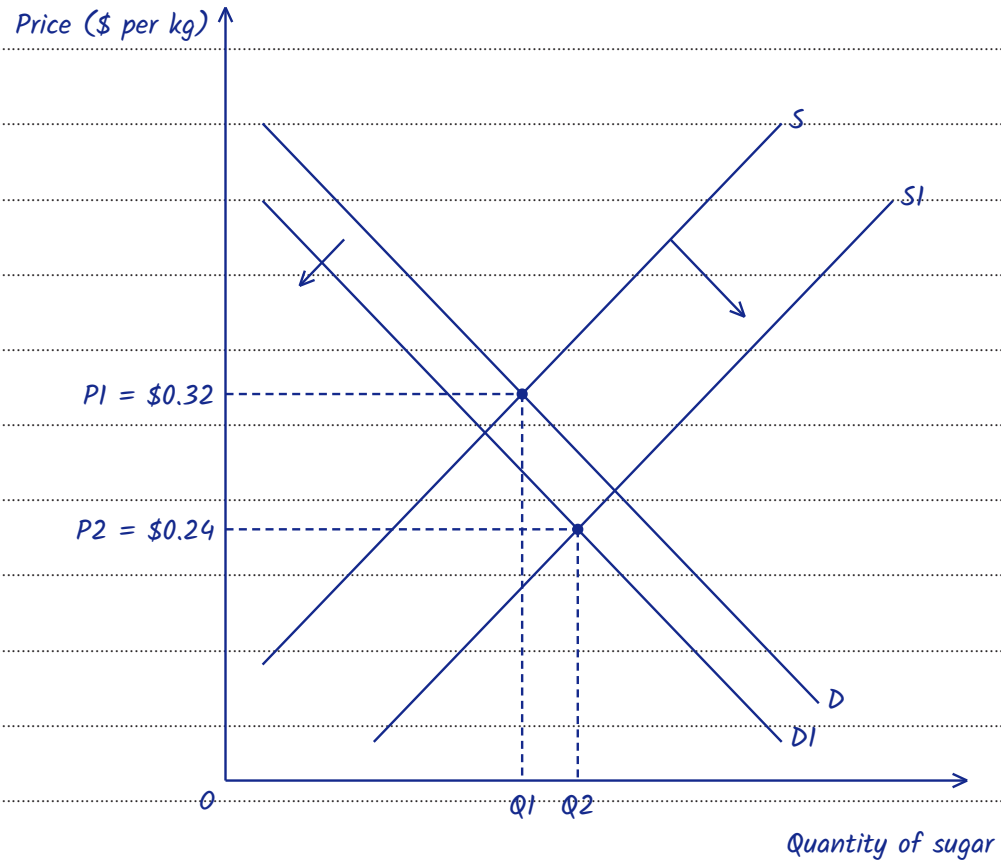
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(c) With reference to Figure 1 and Extract A, analyse **two** reasons why the world price of sugar fell between August 2017 and August 2018.

Illustrate your answer with a supply and demand diagram.

(6)



In Figure 1 the world price of sugar fell from $0.32 per kg in August 2017 to $0.24 per kg in August 2018, a fall of $0.08 or 25%.

Reason 1, an increase in supply: favourable weather led to good harvests, and India and Thailand had record production, so global production in 2018 was 11% higher than in 2017. More sugar is supplied at every price, so supply shifts right from S to S1. At the old price of $0.32 there is excess supply (a surplus of 17 million tonnes held in storage), so producers cut prices to sell their stocks and the price falls.

Reason 2, a fall in demand: increasing health concerns and competition from substitutes such as artificial sweeteners have reduced consumption, eg in the USA, Europe, China and Australia.

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Demand shifts left from D to D1, adding to the excess supply and pushing the price down further.

Together, equilibrium moves from P1Q1 to P2Q2 with a lower price of $0.24. As the rise in supply is larger than the fall in demand, quantity rises slightly from Q1 to Q2.

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(d) With reference to Extract B, examine **two** possible effects of information gaps on the consumption of sugar.

(8)

An information gap exists when economic agents, here consumers, lack the information needed to make rational decisions. Asymmetric information is where one party, eg sugar producers, knows more than the other.

Effect 1, overconsumption: many consumers do not know the recommended maximum intake. In the USA average consumption is 73 grams per day, well above the recommended maximum of 50 grams and nearly three times the 25 grams the body can comfortably process. Because consumers underestimate the private costs of sugar, they overvalue its benefit, so they consume more than is in their own best interest and sugar is over-consumed, misallocating resources.

Effect 2, higher health risks and costs to third parties: consumers may not know that sugar above 25 grams a day is normally processed into body fat, contributing to obesity. A high sugar diet raised the risk of heart disease by 38%, increases the risk of many types of cancer, and men eating 67 grams or more a day were 23% more likely to experience depression. These illnesses lower consumers' welfare and put extra pressure on health services, which must treat more cases, so taxpayers also bear costs.

However, the size of these effects depends on the magnitude of the gap. Many consumers may know the risks but be willing to take a chance, and sugar is addictive, so the problem is not only missing information and closing the gap might not cut consumption much. The gap may also shrink over time, as the internet and government campaigns or food labels provide information, while illnesses such as heart disease appear only after a long time lag, so the full effects of today's gap are delayed.

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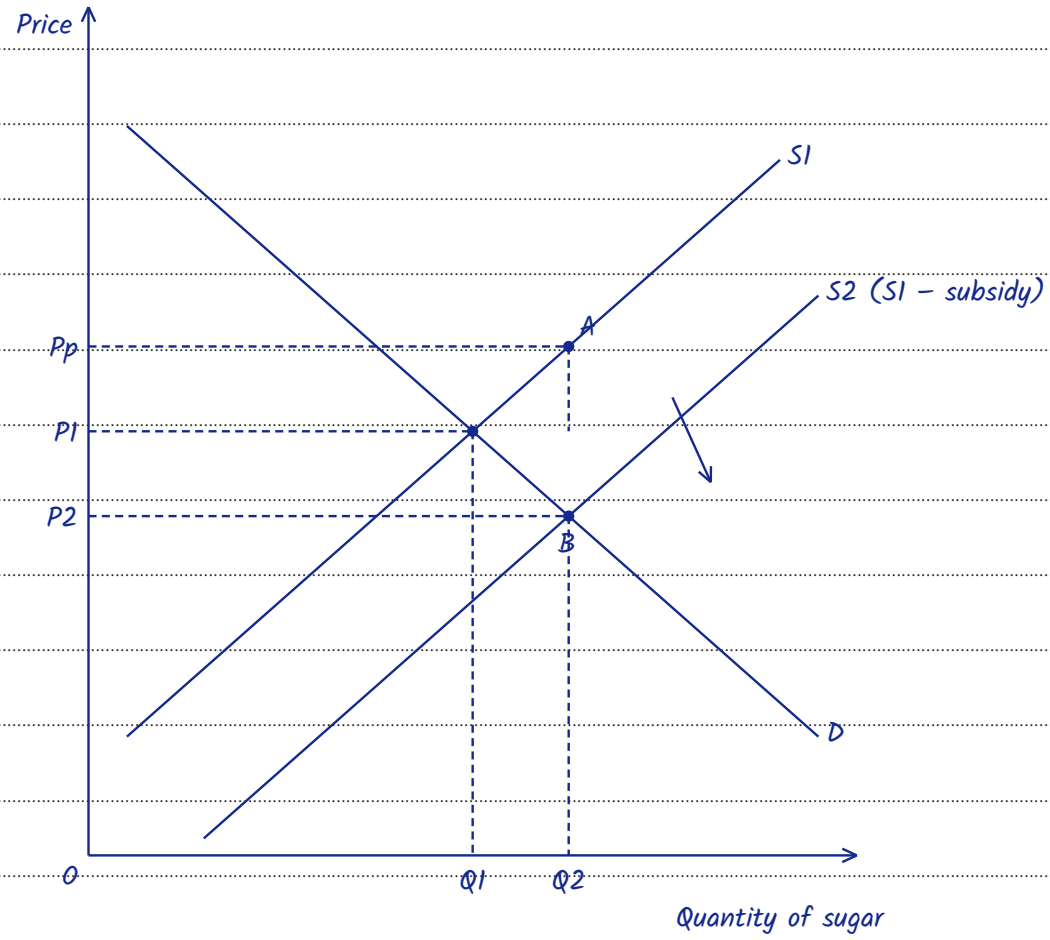
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(e) With reference to Extract C, discuss the likely effects of the increase in the subsidy for sugar production.

Illustrate your answer with an appropriate diagram.

(14)

A subsidy is a payment by the government to producers that lowers their costs of production and encourages them to increase supply. Extract C says the Indian subsidy will rise from 55 rupees to 138 rupees a tonne, an increase of about 151%.



The higher subsidy cuts the cost of growing sugar for export, so supply shifts right from S1 to S2. The price falls from P1 to P2, there is an extension of demand, and quantity rises from Q1 to Q2. Producers receive Pp per tonne (the price plus the subsidy), so producer surplus increases and growers earn higher profits. When the subsidy was first introduced, exports rose from 620 000 to 3.3 million tonnes, and the increase is expected to raise exports to over seven million tonnes a year, while production rose from 20.3 to 33.0 million tonnes between 2017 and 2019.

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Higher export earnings are an injection into the Indian economy and improve India's current account, creating jobs in farming.

Buyers gain as consumer surplus rises with the lower price, including firms that use sugar as an ingredient, such as biscuit and chocolate makers, whose costs fall. However, the government must pay the subsidy per unit (A to B) on every tonne, so spending is the area P2PpAB, which has an opportunity cost: the money could have been spent on education, healthcare or poverty reduction.

There are also effects outside India. More Indian exports increase world supply and push the world price down, so, as Brazil and Australia complain, the market becomes unprofitable for many growers outside India, who may cut output or leave the industry. Cheaper sugar may also raise consumption, worsening obesity and other health problems that impose external costs, such as healthcare costs.

However, the size of these effects is uncertain. Although the subsidy rises by 151%, 138 rupees a tonne is still a very small amount per tonne relative to the price of sugar, so the shift in supply may be small. The effect also depends on elasticities: supply is inelastic in the short run because sugar cane takes one to two years to mature, so output may respond slowly, and if demand is price inelastic most of the subsidy is passed on to buyers as a lower price rather than more output.

The long-run effects may also be less favourable. Brazil and Australia have complained to the WTO, which could rule against India, or other countries may retaliate with their own subsidies, cancelling out India's advantage. Growers may become dependent on the subsidy, making it politically hard to remove, and over-production may simply add to the 17 million tonne surplus

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held in storage, which is wasteful. On the other hand, because India is the world's second largest producer, even a small cut in its costs can have a large impact on the world market.

Overall, the increased subsidy is likely to benefit Indian growers and exporters in the short run, but the gains are reduced by the cost to taxpayers, harm to foreign producers and the risk of WTO action, so the net benefit depends mainly on how elastic supply is and how other countries respond.

(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 2019 the price of a litre of diesel was 65% higher in Thailand than in Malaysia. The price difference was because of higher taxation on diesel in Thailand. This led to illegal smuggling. For example, on one night, Thai authorities seized 300 000 litres of diesel that was illegally imported from Malaysia.

Evaluate possible causes of government failure in a market of your choice.

(Total for Question 13 = 20 marks)

OR

14 Between 2000 and 2019 in China the average price of a house increased from 4 000 yuan per square metre (m^2) to 60 000 yuan per m^2. The ratio of average house prices to average incomes increased from 5.6 to 7.6, showing that houses were becoming less affordable.

Evaluate the impact of market bubbles in the housing market.

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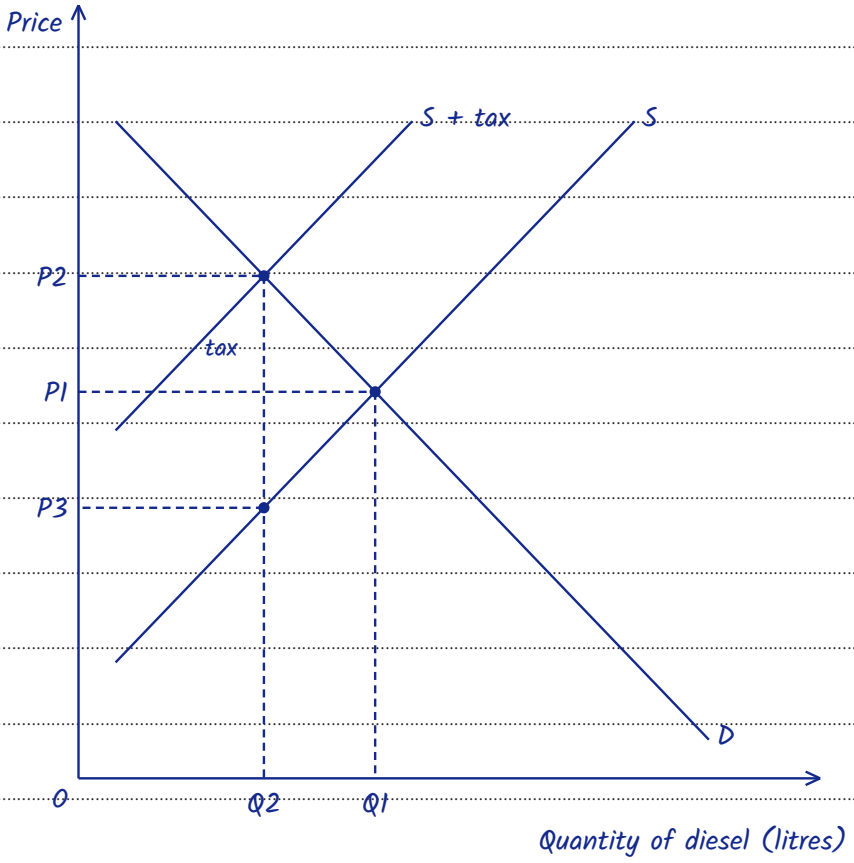
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Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

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

Write your answer here:

Government failure occurs when government intervention in a market leads to a net welfare loss, so resources are allocated less efficiently than before the intervention. I will use the market for diesel in Thailand. Diesel causes negative externalities such as air pollution, so the Thai government places a high indirect tax on it to reduce consumption and raise revenue.



In the diagram the tax shifts supply from S to S + tax, so the price consumers pay rises from P1 to P2 and the quantity of diesel bought legally falls from Q1 to Q2, while the government receives a tax of P3P2 per litre, so tax revenue is P3P2 × Q2. By 2019 this made diesel 65% more expensive in Thailand than in Malaysia.

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The first cause of government failure is unintended consequences: a policy leads to outcomes that were not expected. The 65% price gap gives Thai buyers and traders a strong incentive to buy diesel in Malaysia and smuggle it across the border. Even after transport costs and the risk of being caught, the profit per litre is large, and 300 000 litres seized in a single night suggests smuggling is commonplace. Diesel looks and smells the same in both countries, so its origin is hard to detect. As a result the Thai government loses tax revenue, legal Thai fuel retailers lose sales to criminals, and the smuggling may fund organised crime. Pollution is not reduced either, because the diesel is still burnt in Thailand, so the tax fails to correct the externality and welfare may fall.

However, the significance of this cause depends on the scale of smuggling, which is hard to measure because it goes unrecorded; 300 000 litres may be small compared with total diesel use in Thailand. It also depends on how much effort is put into detection and how severe the punishments are. If the rewards from smuggling far exceed the expected penalty, it will continue, but over time stronger border controls could reduce it. Smuggling also benefits Malaysian sellers and the Malaysian government through extra sales and tax, so the welfare loss is partly a transfer between countries.

The second cause is information gaps. To correct the externality the government needs to set the tax equal to the marginal external cost, but external costs such as damage to health are very hard to value in money terms, and the government may not know the price elasticity of demand for diesel. If the tax is set too high, output falls below the social optimum, harming firms such as transport and farming businesses that rely on diesel, and raising costs and prices across the economy, so there is a welfare loss. The government also may not have considered prices in neighbouring Malaysia when setting the tax, which is what made smuggling so profitable.

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On the other hand, demand for diesel is price inelastic because there are few substitutes in the short run, so even a tax that is "too high" raises a large amount of revenue that can fund public services. Information gaps can also be reduced over time as the government studies the effects and adjusts the rate, so this cause may be more important in the short run than the long run.

The third cause is excessive administrative costs. Enforcing the tax requires customs officers, border patrols, investigations and court cases. If the cost of collecting the tax and fighting smuggling, plus the revenue lost, is greater than the benefit of reduced pollution, the policy causes a net welfare loss. However, many of these border costs would exist anyway to control other illegal goods, so the extra cost caused by the diesel tax may be smaller than it appears.

A fourth cause is a lack of incentives, or the wrong incentives. The tax was meant to give people an incentive to use less diesel, but instead it gave them an incentive to find cheaper, illegal diesel. This depends on location: people near the Malaysian border can easily switch, while most consumers further away cannot, so for most of the country the tax may still change behaviour as intended.

In conclusion, the most significant cause of government failure in the diesel market is unintended consequences, because a 65% price difference creates such a large incentive to smuggle that it undermines both aims of the tax: raising revenue and reducing pollution. Information gaps are the underlying reason, since the tax was set without fully considering prices next door. Whether there is a net welfare loss overall depends on the magnitude of smuggling compared with the revenue still raised and pollution still reduced. The government could reduce the failure by narrowing the price gap near the border or increasing enforcement, so the failure may be partly corrected 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

Time 1 hour 45 minutes

Paper reference **WEC11/01**

Economics

International Advanced Subsidiary
UNIT 1: Markets in action

Source Booklet

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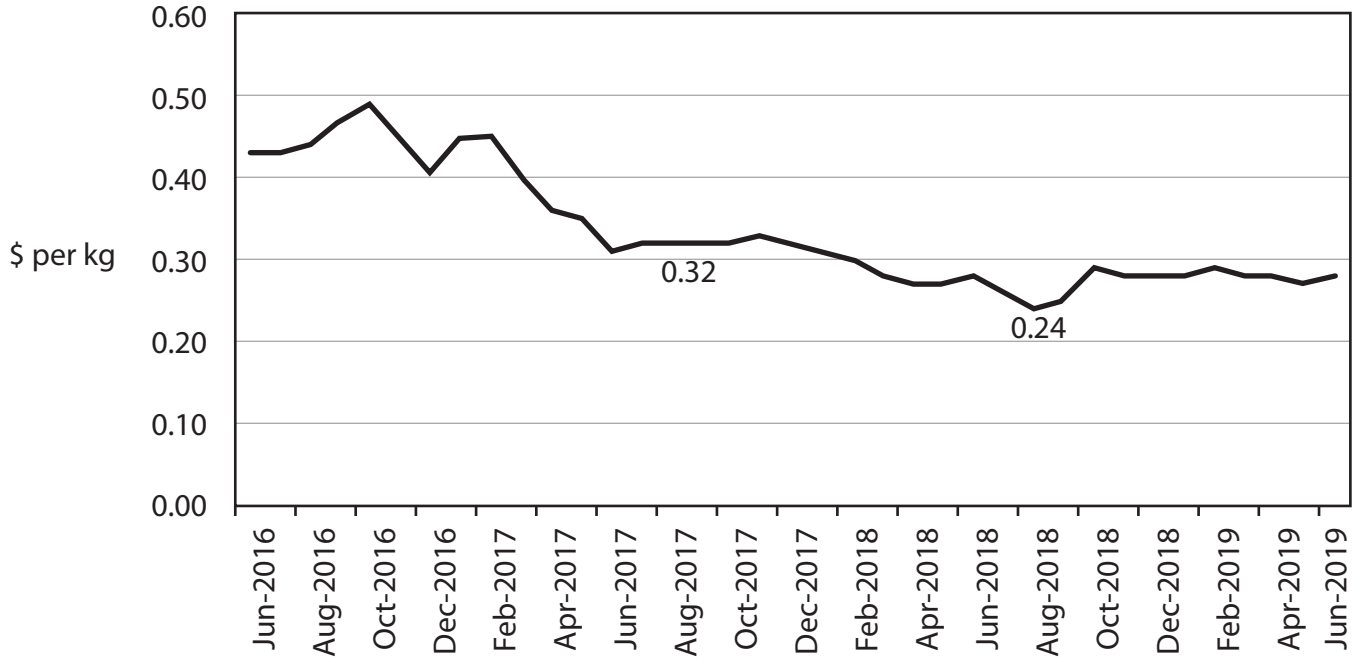
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Sources for use with Section C.

The 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.

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.

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.

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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. 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.

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.

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.

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Acknowledgements

Figure 1 based on data taken from https://www.indexmundi.com/commodities/?commodity=sugar&months=60

Extract A adapted from 'Sugar prices are the lowest in a decade, but haven't hit bottom yet', Myra P Saefong, Market Watch, Aug 24, 2018, https://www.marketwatch.com/story/sugar-prices-are-the-lowest-in-a-decade-but-have-yet-to-hit-bottom-2018-08-23

Extract B adapted from 'What Happens to Your Body When You Eat Too Much Sugar?', Mercola, March 23 2019 https://articles.mercola.com/sugar-side-effects.aspx and '11 Reasons Why Too Much Sugar Is Bad for You', Jillian Kubula, June 3 2018, https://www.healthline.com/nutrition/too-much-sugar#section6

Extract C adapted from 'Exclusive: India to keep sugar export subsidies even as rivals complain-sources', Rajendra Jadhav, Reuters,15 July 2019, https://www.reuters.com/article/us-india-sugar-exports-exclusive/exclusive-india-to-keep-sugar-export-subsidies-even-as-rivals-complain-sources-idUSKCN1UA137