Diploma Programme
Programme du diplôme
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Economics
Higher level
Paper 3

Monday 10 May 2021 (morning)

Candidate session number

1 hour

Instructions to candidates

- Write your session number in the boxes above.
- You are permitted access to a calculator for this paper.
- Do not open this examination paper until instructed to do so.
- Answer two questions.
- Answers must be written within the answer boxes provided.
- Unless otherwise stated in the question, all numerical answers must be given exactly or correct to two decimal places.
- You must show all your working.
- The maximum mark for this examination paper is **[50 marks]**.

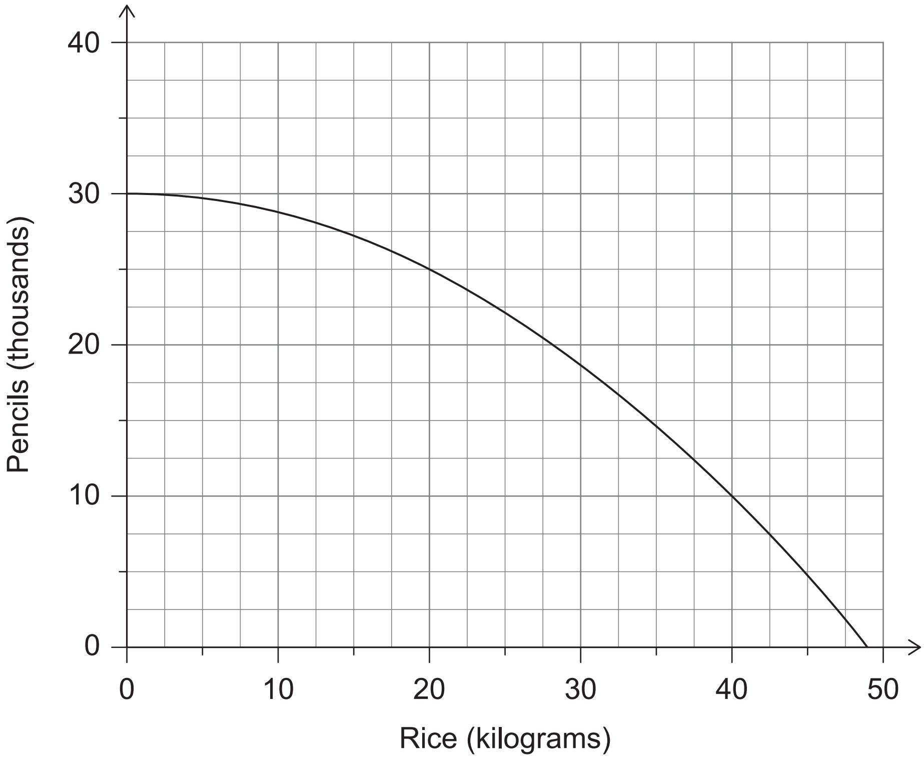
2221 – 5107

20 pages

Answer **two** questions. Each question is worth [25 marks]. Answers must be written within the answer boxes provided.

1. **Figure 1** illustrates the production possibilities for rice and pencils in Country H. Resources in Country H are fully employed.

Figure 1



(a) Assuming that 25 000 pencils are produced initially, identify the opportunity cost for Country H if the production of rice is to be increased by 100 %. [1]

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(b) State **one** reason why the production possibility curve (frontier) for Country H might shift outwards. [1]

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(Question 1 continued)

Table 1 provides information about Good X and Good Y, which are related goods.

Table 1

	Good X		**Good Y**	
	Price ($)	**Quantity demanded**	**Price ($)**	**Quantity demanded**
Year 1	12	320	8	400
Year 2	14	290	8	420

(c) Using **Table 1**, calculate the cross price elasticity of demand between Good X and Good Y when the price of Good X increases. [2]

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The demand for Good Z is income inelastic.

(d) Define the term *income inelastic demand*. [2]

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(Question 1 continued)

Country D is an economically less developed country that specializes in the production of primary products.

(e) Explain **two** implications for Country D of a relatively low income elasticity of demand for its primary products. [4]

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(Question 1 continued)

Good A and Good B are in joint supply.

(f) Using a diagram to support your answer, explain the impact on the market for Good B of an increase in the price of Good A. [4]

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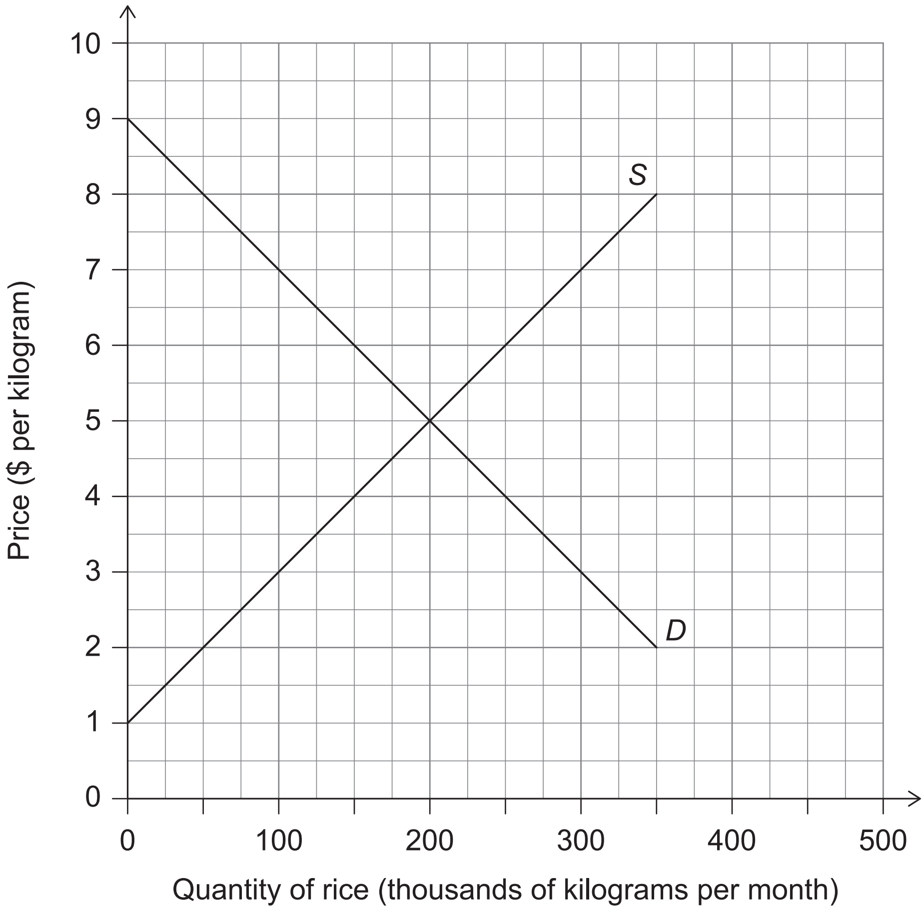
(Question 1 continued)

Figure 2 illustrates Islandia's demand (*D*) for and supply (*S*) of rice.

Figure 2



The government of Islandia wants to reduce the price of rice by 40 % in order to enable low-income households to buy enough rice to meet their needs. The government decides to achieve this by imposing a maximum price.

(g) Calculate the shortage resulting from the imposition of the maximum price. [1]

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(Question 1 continued)

(h) Calculate the change in producer surplus resulting from the imposition of the maximum price. [2]

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(i) Calculate the change in consumer expenditure on rice resulting from the imposition of the maximum price. [2]

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(Question 1 continued)

The government of Islandia realises that when a maximum price is set below the equilibrium price, a method of non-price rationing is necessary. Critics of the maximum price policy argue that it might result in the creation of a parallel market.

(j) State **two** methods of non-price rationing. [2]

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(k) With reference to **Figure 2**, outline why the imposition of a maximum price might lead to the creation of a parallel market. [2]

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(l) Explain **one** reason, apart from the possible creation of a parallel market, why the imposition of a maximum price for rice in Islandia might not enable low-income households to buy enough rice to meet their needs. [2]

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2. **Table 2** provides information relating to the country of Averna in 2019.

Table 2

	$ (million)
Exports of goods and services	462
Subsidies	681
Consumer expenditure	2350
Indirect taxation	759
Investment expenditure	1380
Wages and salaries	3695
Government expenditure on unemployment benefits	487
Imports of goods and services	476
Government expenditure on goods and services	1624

(a) Calculate Averna's nominal gross domestic product (GDP) in 2019. [2]

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(Question 2 continued)

In 2019, the population of Averna is 213 600, while the GDP deflator is 125.

(b) (i) Define the term *price deflator*. [2]

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(ii) Using your answer to part (a), calculate Averna's real GDP per capita in 2019. [2]

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(iii) Explain **two** reasons why an increase in real GDP per capita may not lead to an improvement in living standards. [4]

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(Question 2 continued)

Table 3 provides information relating to the labour market in the country of Buranda.

Table 3

Population (million)	Employed (million)	Unemployed (million)
9.3	5.7	1.2

(c) Calculate the unemployment rate in Buranda. [2]

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(d) Define the term *underemployment*. [2]

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(Question 2 continued)

Table 4 provides data relating to Country Y.

Table 4

	Unemployment rate (%)	Inflation rate (%)
2011	6.3	4.2
2012	6.8	3.5
2013	7.2	3.2
2014	6.5	3.7
2015	5.9	4.1
2016	5.5	4.8
2017	6.4	5.7
2018	7.8	7.4

(e) Identify a period in which Country Y experienced disinflation. [1]

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(f) (i) With reference to the short-run Phillips curve, describe the relationship between inflation and unemployment in Country Y for the period 2011 to 2016. [2]

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(ii) Outline how the data for the period 2016 to 2018 may reflect a change in the short-run Phillips curve for Country Y. [2]

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(Question 2 continued)

Table 5 provides information relating to the country of Buranda.

Table 5

	Index of export prices	Index of import prices
2008	106.5	108.9
2018	107.2	124.3

(g) (i) Calculate Buranda's terms of trade index for 2008 **and** 2018. [2]

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(ii) Using your answers to part (g)(i), explain how the change in Buranda's terms of trade may act as a barrier to economic development. [4]

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3. Note that a widget is an imaginary product.

In the country of Laurania, the widget industry operates as an oligopoly. The Minister for Finance is worried that the firms in the industry might abuse their power by acting together as a monopoly, and has said that the industry's concentration ratio is cause for concern.

(a) Outline how a concentration ratio might be used to identify an oligopoly. [2]

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(b) Using a diagram to support your answer, explain how monopoly power can create a welfare loss. [4]

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(Question 3 continued)

(c) State **two** government responses to the abuse of monopoly power. [2]

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It has been observed that the law of diminishing returns operates in the widget industry.

(d) Outline the law of diminishing returns. [2]

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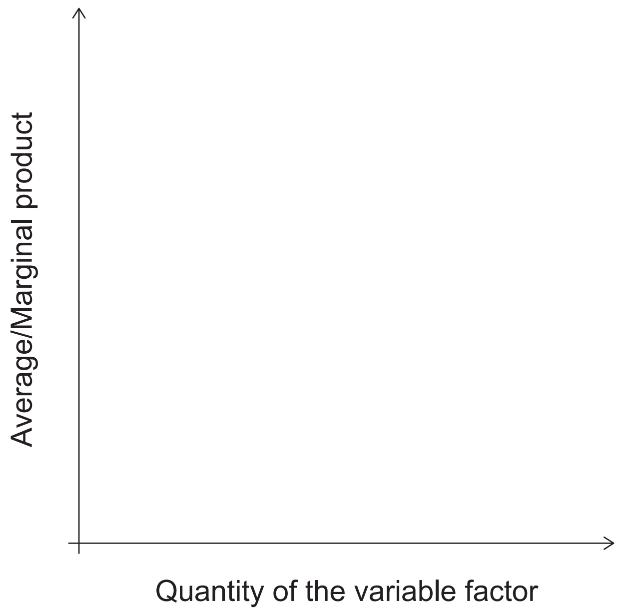
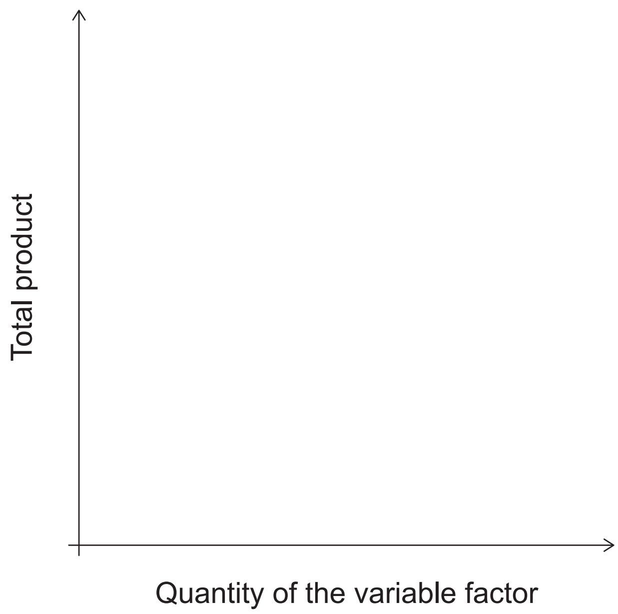
(Question 3 continued)

A firm operates under conditions of diminishing returns.

(e) (i) Sketch the marginal product (*MP*) **and** average product (*AP*) curves for this firm. [2]



(ii) Sketch the total product (*TP*) curve for this firm. [1]



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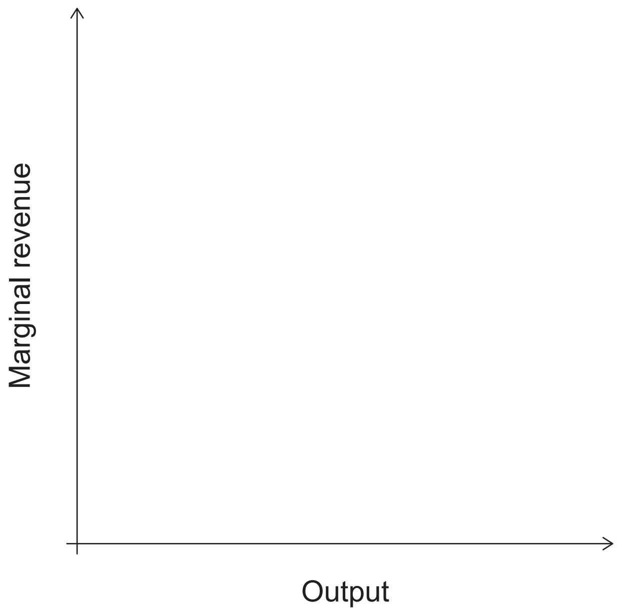
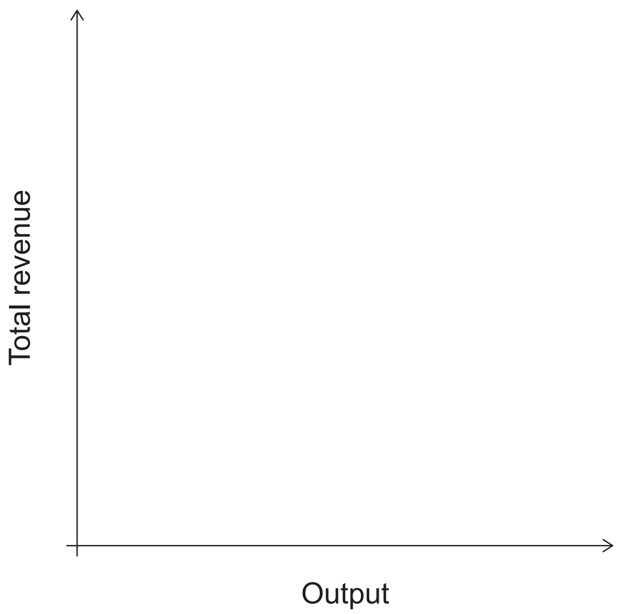
(Question 3 continued)

The demand curve faced by firms in the widget industry is downward sloping.

(f) (i) Sketch the marginal revenue (*MR*) curve for firms in the widget industry. [1]



(ii) Sketch the total revenue (*TR*) curve for firms in the widget industry. [1]



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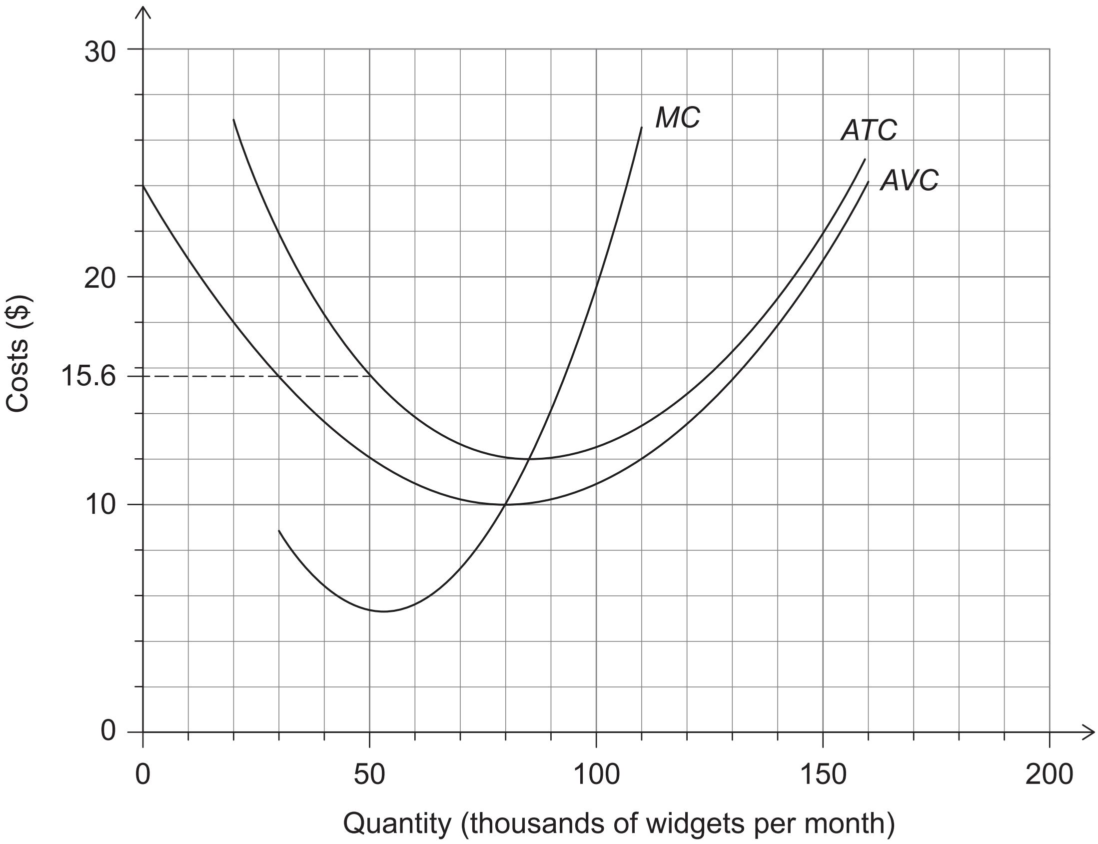
(Question 3 continued)

Figure 3 shows the marginal cost (*MC*) curve, the average variable cost (*AVC*) curve and the average total cost (*ATC*) curve for a firm in the widget industry.

Figure 3



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(Question 3 continued)

(g) (i) Calculate the firm’s total variable costs if output is 20 000 widgets per month. [1]

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(ii) Identify the level of output at which the firm would achieve productive efficiency. [1]

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(iii) Calculate the firm’s monthly total fixed costs if output equals 50 000 units per month. [2]

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One firm in the widget industry uses the practice of price discrimination, charging a lower price to one group of consumers than to another group, even though there is no difference in the cost of supplying to each group.

(h) (i) State **two** conditions necessary for price discrimination to take place. [2]

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(Question 3 continued)

(ii) Using a diagram (or diagrams), explain why a profit maximizing firm might charge a higher price in one market than in another. [4]

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