

# Markscheme

## Specimen paper

### Economics














### Higher level








### Paper 3









This markscheme is **confidential** and for the exclusive use of examiners in this examination session.

It is the property of the International Baccalaureate and must **not** be reproduced or distributed to any other person without the authorization of the IB Global Centre, Cardiff.

The following are the annotations available to use when marking responses.

Annotation	Explanation
AEr	Arithmetic error
	Benefit of Doubt
	Cross — Incorrect Point
	Does not Follow
	Error Carried Forward
	Good Analysis
	Good Definition
	Good Diagram
	Good Explanation
GP	Good point
	Highlight tool
	Incorrect Labelling
	Irrelevant
L0	Level 0
L1	Level 1
L2	Level 2
N0	No working shown — Awards 0 marks
N1	No working shown — Awards 1 mark
	Not Answered Question
	Not Enough

[0+1]	Num 0 + 1 — Awards 1 mark
[1+0]	Num 1 + 0 — Awards 1 mark
[0+2]	Num 0 + 2 — Awards 2 marks
[2+0]	Num 2 + 0 — Awards 2 marks
<b>1+1</b>	Num 1 + 1 — Awards 2 marks
<b>1+2</b>	Num 1 + 2 — Awards 3 marks
<b>2+1</b>	Num 2 + 1 — Awards 3 marks
<b>2+2</b>	Num 2 + 2 — Awards 4 marks
	Num 0 — Awards 0 marks
NW	No Working shown
<b>OFR</b>	Own Figure Rule
	On-page comment text box (for adding specific comments)
	Poor Diagram
	Poorly Expressed
	Question mark — Unclear
	Rounding Error
	Repetition
<b>SEEN</b>	Seen — Apply to blank pages
<b>TCE</b>	Theory is Clearly Explained
<b>TNCE</b>	Theory is Not Clearly Explained

	Tick 1 — Awards 1 marks
	Tick 2 — Awards 2 marks
	Tick 3 — Awards 3 marks
	Tick 4 — Awards 4 marks
	Tick — Correct Point (colourable)
	Too Vague
	Underline tool
	Unbalanced Response

You **must** make sure you have looked at all pages. Please put the **SEEN** annotation on any blank page, to indicate that you have seen it.

**Notes for examiners:**

- 1. Whenever relevant, carry over marks must be awarded. If a candidate makes an error in calculation, but then uses the incorrect figure appropriately and accurately in later question parts, then the candidate may be fully rewarded. This is the “own-figure rule” and you should put OFR on the script where you are rewarding this.**
- 2. Alternative approaches may be taken in responses to the [4] questions that use A02 command terms. If this is the case and the alternative approaches are valid, then full credit should be given.**
- 3. A candidate may be penalized for not rounding correctly, failing to give answers correct to 2 dp or, in some cases, for not including the appropriate units. However, a candidate may only be penalized ONCE per question (not per part) for each type of error.**

1. (a) (i) Calculate the value of coffee exports per year from Country X. [2]

$$200 - 20 = 180 \text{ OR } 180\,000$$

*Any valid working (including recognition of US\$3 as the export price) is sufficient for [1].*

$$180\,000 \times 3 = \text{US\$}540\,000$$

*An answer of US\$540 000 OR 540 000 without working is sufficient for [1].*

- (ii) Calculate the social/community surplus earned by stakeholders in the coffee market in Country X under conditions of free trade. [3]

$$\text{Consumer surplus} = 0.5 \times 1.6 \times 20\,000 = 16\,000$$

$$\text{Producer surplus} = 0.5 \times 2 \times 200\,000 = 200\,000$$

*Any valid working is sufficient for [1].*

$$\text{Social/community surplus} = 16\,000 + 200\,000$$

$$= \text{US\$}216\,000$$

*An answer of US\$216 000 OR 216 000 without working is sufficient for [2].*

*OFR applies for adding consumer surplus to producer surplus.*

- (iii) Calculate how much the revenue earned by coffee producers in Country X would decrease if the world price of coffee falls by US\$0.80 per kg. [2]

Initial revenue =  $3 \times 200\,000 = 600\,000$

Final revenue =  $2.20 \times 120\,000 = 264\,000$

*Award [1] if the initial **OR** final revenue is correct.*

Decrease in revenue =  $600\,000 - 264\,000 = \text{US}\$336\,000$

*An answer of US\$336 000 **OR** 336 000 without working is sufficient for [1].*

- (iv) In 2016 the population of Country X was 41.5 million. Using information from **Table 1**, calculate the GDP (US\$ PPP) for 2016. [1]

$1717 \times 41.5 \text{ m}$

= US\$71 255.5 million

*An answer of 71 255.5 **OR** 71 255.5 million **OR** 71.255 billion **OR** 71.26 billion **OR** 71 255 500 000 without working is sufficient for [1].*

- (v) Define the term *current account balance*. [2]

Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>Vague definition.</i>	<b>1</b>
	The idea that it is exports minus imports <b>OR</b> the idea that it is a measure of money coming into, and going out of, a country from international trade.	
2	<i>Accurate definition.</i>	<b>2</b>
	The idea that it is the net inflow of funds from trade in goods and services plus other income flows (and transfers).	

- (vi) Using an example, explain the importance of presenting “GDP per capita” statistics at purchasing power parity (PPP). [4]

Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>The written response is limited.</i>	<b>1–2</b>
	For the idea that the purchasing power of GDP per capita (measured in, for example, US\$) is not comparable between countries due to differences in the general price level.	
2	<i>The written response is accurate.</i>	<b>3–4</b>
	For an explanation that purchasing power of GDP per capita (measured in, for example, US\$) is not comparable between countries due to differences in the general price level, and that adjusting for purchasing power parity allows a realistic comparison of the real value of GDP per capita <b>AND</b> for an example, such as: if annual GDP per capita is \$5000 in Country A and \$10 000 in Country B, while the cost of living in Country B is twice that in Country A, then GDP per capita at PPP would be equal between the countries.	

*If a relevant example is not included, a maximum of [3] may be awarded.*

- (vii) Assume the price of coffee is US\$2.20 per kg. Using **Figure 1**, calculate the price elasticity of demand (PED) for coffee in Country X if the price were to fall from US\$2.20 per kg to US\$1.40 per kg. [2]

$$PED = \frac{33.33\%}{-36.36\%}$$

*Any valid working (either the % change in P or Qd) is sufficient for [1].  
Figures may be rounded.*

= -0.92 **OR** 0.92

*An answer of 0.92 without working is sufficient for [1].*



(viii) Using **at least two** items of information provide, explain why the government of Country X should be very concerned at the prospect of a fall in world coffee prices.

[4]

Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>The written response is limited.</i>	<b>1–2</b>
	For identifying <b>two</b> reasons why the government of Country X should be very concerned at the prospect of a fall in world coffee prices. Award <b>[1]</b> for each valid reason.	
2	<i>The written response is accurate.</i>	<b>3–4</b>
	For explaining <b>two</b> reasons why the government of Country X should be very concerned at the prospect of a fall in world coffee prices. A response which does not use <b>at least two</b> items of information may be awarded a maximum of <b>[3]</b> .	

*Answers may include:*

- Coffee comprises 20.2 % of export earnings. If the price of coffee falls then export earnings will decrease.
- The current account balance is in deficit (–US\$2.35 billion). The deficit would increase.
- Agriculture accounts for 26.7 % of GDP, 40 % of the labour force works in agriculture. A fall in the price of coffee will affect rural workers significantly.
- The level of poverty is relatively high (19.7 %) while GDP/capita is less than 10 % of the world average. Inequality is significant (Gini coefficient = 0.41). A fall in the price of coffee would be likely to increase poverty, reduce GDP/capita and increase inequality.

*Any valid reason explained.*

- (b) Using the data provided and your knowledge of economics, recommend a policy which could be introduced by the government of Country X in response to the expected fall in the world price of coffee.

**[10]**

*Possible policies may include (but are not restricted to):*

- Support for the domestic coffee industry eg subsidies, import tariffs.
- Policies to promote domestic consumption.
- Import tariffs on foreign coffee.
- Policies to encourage diversification.
- Policies to encourage the domestic processing of coffee.
- Investment in infrastructure in order to support the coffee industry.
- The establishment/development of a regional trading bloc.
- A combination of policies.
- Any other valid policy.

**Assessment Criteria**

**Recommend**—present an advisable course of action with appropriate supporting evidence/reason in relation to a given situation, problem or issue.

Marks	Level descriptor
0	<ul style="list-style-type: none"> <li>• The work does not reach a standard described by the descriptors below.</li> </ul>
1–2	<ul style="list-style-type: none"> <li>• The response identifies a policy.</li> <li>• The response uses no economic theory to support the recommendation.</li> <li>• Economic terms are stated but are not relevant.</li> <li>• The response contains no use of text/data to support the recommendation.</li> <li>• The response contains no evidence of synthesis or evaluation.</li> </ul>
3–4	<ul style="list-style-type: none"> <li>• The response identifies an appropriate policy.</li> <li>• The response uses limited economic theory to support the recommendation in a superficial manner.</li> <li>• Some relevant economic terms are included.</li> <li>• The response contains no use of relevant text/data to support the recommendation.</li> <li>• The response contains evidence of superficial synthesis or evaluation.</li> </ul>
5–6	<ul style="list-style-type: none"> <li>• The response identifies and explains an appropriate policy.</li> <li>• The response uses relevant economic theory to partially support the recommendation.</li> <li>• Some relevant economic terms are used appropriately.</li> <li>• The response includes some relevant information from the text/data to support the recommendation.</li> <li>• The response contains evidence of appropriate synthesis or evaluation but lacks balance.</li> </ul>
7–8	<ul style="list-style-type: none"> <li>• The response identifies and fully explains an appropriate policy.</li> <li>• The response uses relevant economic theory to support the recommendation.</li> <li>• Relevant economic terms are used mostly appropriately.</li> <li>• The use of information from the text/data is generally appropriate, relevant and applied correctly to support the recommendation.</li> <li>• The response contains evidence of appropriate synthesis or evaluation that is mostly balanced.</li> </ul>
9–10	<ul style="list-style-type: none"> <li>• The response identifies and fully explains an appropriate policy.</li> <li>• The response uses relevant economic theory effectively to support the recommendation.</li> <li>• Relevant economic terms are used appropriately throughout the response.</li> <li>• The use of information from the text/data is appropriate, relevant and supports the analysis/evaluation effectively.</li> <li>• The response contains evidence of effective and balanced synthesis or evaluation.</li> </ul>

2. (a) (i) Calculate the annual income tax to be paid by Takeshi. Enter your results in **Table 3**. [2]

$$14\,000 \times 10.5\% = 1470$$

$$34\,000 \times 17.5\% = 5950$$

$$22\,000 \times 30\% = 6600$$

$$18\,000 \times 33\% = 5940$$

*Any valid working is sufficient for [1].*

$$= \$19\,960$$

*An answer of \$19 960 OR 19 960 without working is sufficient for [1].*

- (ii) Calculate the GST paid by Takeshi per year. Enter your results in **Table 3**. [2]

$$\text{Takeshi spends } 0.8 \times 68\,040 = 54\,432$$

*Any valid working should be rewarded with [1].*

$$\text{GST paid} = 54\,432 \times \left( \frac{0.15}{1.15} \right) = \$7\,099.83$$

*An answer of 7 099.83 without workings is sufficient for [1].*

*OFR applies if the response to part (a) is incorrect.*

- (iii) Calculate the average rate of tax (including both direct and indirect tax) paid by Maya and Takeshi. Enter your results in **Table 3**. [2]

$$\text{Maya: } \left( \frac{7\,060.87}{28\,000} \right) \times 100 = 25.22\%$$

$$\text{Takeshi: } \left[ \frac{(19\,960 + 7\,099.83)}{88\,000} \right] \times 100$$

*Any valid working is sufficient for [1].*

$$= 30.75\%$$

*An answer of 30.75 % without workings is sufficient for [1].*

*OFR applies for Takeshi.*

- (iv) Referring to the change in New Zealand’s Gini coefficient shown in **Figure 2**, outline **one** possible reason for this change.

[2]

Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>The written response is limited.</i>	<b>1</b>
	For example: the tax system.	
2	<i>The written response is accurate.</i>	<b>2</b>
	For example: the tax system has become less progressive.	

*Possible reasons may include:*

- The tax system has become less progressive.
- The rate of indirect taxation has increased.
- Market orientated supply-side policies have been introduced, such as labour market reforms.
- Welfare payments have been cut.
- The bargaining power of organized labour has been reduced.
- Any other valid reason.

- (v) Explain the likely impact on New Zealand’s Gini coefficient if the government increased the rate of GST to 20 % in 2017.

[4]

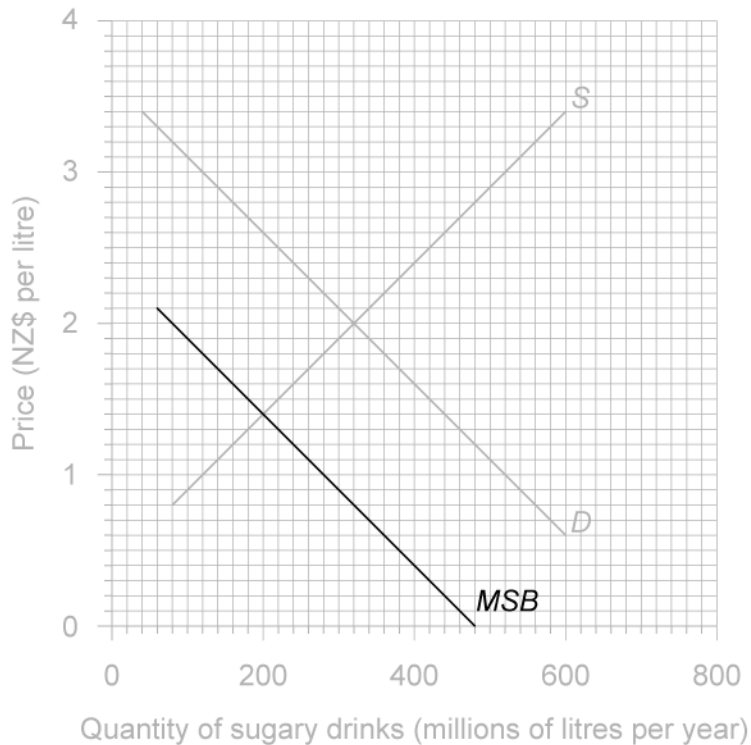
Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>The written response is limited.</i>	<b>1–2</b>
	For the idea that an increase in the rate of GST will make the system more regressive, as GST paid on any good/service constitutes a smaller percentage of income for those on higher incomes <b>OR</b> that this will make the distribution of income more unequal and therefore increase the Gini coefficient.	
2	<i>The written response is accurate.</i>	<b>3–4</b>
	For an explanation that an increase in the rate of GST will make the system more regressive, as GST paid on any good/service constitutes a smaller percentage of income for those on higher incomes <b>AND</b> that this will make the distribution of income more unequal and therefore increase the Gini coefficient.	

- (vi) Using **Table 4** and **Table 5**, comment on the view that the consumption of sugary drinks contributes to market failure in New Zealand. **[4]**

Level	Descriptor	Marks
0	<i>The work does not reach a standard described by the descriptors below.</i>	<b>0</b>
1	<i>The written response is limited.</i>	<b>1–2</b>
	For the idea that the data suggest that the consumption of sugar can lead to diabetes, a negative externality of consumption, causing market failure.	
2	<i>The written response is accurate.</i>	<b>3–4</b>
	For an explanation that the data suggest that the consumption of sugar can lead to diabetes, a negative externality of consumption, causing market failure. Pacific people, with high prevalence of diabetes appear to consume relatively high quantities of sugary drinks when they are young. This indicates that there is a link between sugar consumption and diabetes, although the causation is not necessarily proven.	

*A response which does not refer directly to the data or which does not challenge the issue of causality may be awarded a maximum of [3].*

- (vii) Using this information, draw the marginal social benefit (MSB) curve on **Figure 3**. **[1]**



*Award [1] for a curve, labelled MSB, which intersects the supply curve at 200 million litres.*

- (viii) Using your answer to part (vii), calculate the welfare loss to New Zealand resulting from excessive consumption of sugary drinks.

[2]

$$0.5 \times 120 \times 1.2$$

*Any valid working is sufficient for [1].*

$$= \$72 \text{ million}$$

*An answer of 72 million without workings is sufficient for [1].*

*OFR applies if the curve for part (vii) is placed incorrectly.*

- (b) Using the data provided and your knowledge of economics, recommend a policy which the New Zealand government could introduce to address the over-consumption of sugary drinks.

[10]

*Possible policies may include (but are not restricted to):*

- An indirect tax on sugar or products containing high levels of sugar.
- Legislation to regulate the sugar content in food/drinks.
- Legislation to restrict the availability of products which are high in sugar (eg in schools/shops near to schools).
- Subsidies on “healthier” food products.
- Education/advertising aimed at decreasing the demand for products high in sugar.
- Behavioural economic policies, such as Nudge theory, choice architecture.
- A combination of policies.
- Any other valid policy.

**Assessment Criteria**

**Recommend**—present an advisable course of action with appropriate supporting evidence/reason in relation to a given situation, problem or issue.

Marks	Level descriptor
0	<ul style="list-style-type: none"> <li>• The work does not reach a standard described by the descriptors below.</li> </ul>
1–2	<ul style="list-style-type: none"> <li>• The response identifies a policy.</li> <li>• The response uses no economic theory to support the recommendation.</li> <li>• Economic terms are stated but are not relevant.</li> <li>• The response contains no use of text/data to support the recommendation.</li> <li>• The response contains no evidence of synthesis or evaluation.</li> </ul>
3–4	<ul style="list-style-type: none"> <li>• The response identifies an appropriate policy.</li> <li>• The response uses limited economic theory to support the recommendation in a superficial manner.</li> <li>• Some relevant economic terms are included.</li> <li>• The response contains no use of relevant text/data to support the recommendation.</li> <li>• The response contains evidence of superficial synthesis or evaluation.</li> </ul>
5–6	<ul style="list-style-type: none"> <li>• The response identifies and explains an appropriate policy.</li> <li>• The response uses relevant economic theory to partially support the recommendation.</li> <li>• Some relevant economic terms are used appropriately.</li> <li>• The response includes some relevant information from the text/data to support the recommendation.</li> <li>• The response contains evidence of appropriate synthesis or evaluation but lacks balance.</li> </ul>
7–8	<ul style="list-style-type: none"> <li>• The response identifies and fully explains an appropriate policy.</li> <li>• The response uses relevant economic theory to support the recommendation.</li> <li>• Relevant economic terms are used mostly appropriately.</li> <li>• The use of information from the text/data is generally appropriate, relevant and applied correctly to support the recommendation.</li> <li>• The response contains evidence of appropriate synthesis or evaluation that is mostly balanced.</li> </ul>
9–10	<ul style="list-style-type: none"> <li>• The response identifies and fully explains an appropriate policy.</li> <li>• The response uses relevant economic theory effectively to support the recommendation.</li> <li>• Relevant economic terms are used appropriately throughout the response.</li> <li>• The use of information from the text/data is appropriate, relevant and supports the analysis/evaluation effectively.</li> <li>• The response contains evidence of effective and balanced synthesis or evaluation.</li> </ul>