

# Cambridge IGCSE<sup>™</sup>

0457/11
ovember 2024
our 15 minutes

You must answer on the question paper.

You will need: Insert (enclosed)

#### **INSTRUCTIONS**

- Answer all questions. •
- Use a black or dark blue pen. •
- Write your name, centre number and candidate number in the boxes at the top of the page. •

This document has 12 pages. Any blank pages are indicated.

- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction fluid. •
- Do not write on any bar codes. •

#### **INFORMATION**

- The total mark for this paper is 70. •
- The number of marks for each question or part question is shown in brackets [].
- The insert contains all the sources referred to in the questions.

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[Turn over

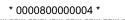
*00000000022* Read the information in the insert and answer <b>all</b> questions. 1 Study Sources 1 to 3. (a) From Source 1, how many cities monitor air pollution? (b) From Source 2, identify <b>two</b> advantages of using electric vehicles. (c) Which advantage of using electric vehicles do you think is the most significant? Explain why.		
1	Stuc	dy Sources 1 to 3.
	(a)	From Source 1, how many cities monitor air pollution?
		[1]
	(b)	From Source 2, identify <b>two</b> advantages of using electric vehicles.
		[2]
	(c)	Which advantage of using electric vehicles do you think is the most significant? Explain why.
		[3]



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(d) Explain why the problems of pollution from transport are an important local issue.

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4



- 2 Study Source 3.
  - (a) 'We need less polluting forms of transport for the future.'

What are the strengths and weaknesses of the argument supporting this claim?

[6]

(b) 'Cycling and walking are becoming more popular in cities.'

How could you test this claim?

You should consider the types of information, sources of evidence or methods you might use.

[8]

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		6 burce 4.	
(a)	lder	ntify <b>one</b> opinion from Bina's statement. Explain why it is an opinion.	
			]
(b)	Ahr: (i)	am is arguing that we should find less polluting ways to travel. Identify <b>one</b> fact from Ahram's statement.	
		[1]	]
	(ii)	Explain how well this fact supports Ahram's statement.	
			]

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3



0457/11/O/N/24



(c) Which argument is more convincing, Bina's or Ahram's?

Your answer should consider both arguments and you should support your point of view with their words.

You should also consider:

- the strength of their reasoning and evidence •
- their use of language •
- the different kinds of information used. •

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		 		 [15]



4 A government wants to reduce pollution in its cities.

The following actions are being considered:

- promoting the use of electric vehicles •
- encouraging more walking and cycling •
- making public transport free.

Which one of these actions would you recommend to the government and why?

8

In your answer, you should:

- state your recommendation
- give reasons and evidence to support your choice •
- use the material in the sources and/or any of your own ideas •
- consider different arguments and perspectives.




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 	[24]



# Source 1

Transportation is the movement of people or goods from one place to another. However, it is the fastest growing source of air pollution. Globally transportation accounts for about 20 per cent of polluting exhaust gases.

In 2022, the World Health Organization (WHO) reported that nearly all of the world's population breathes air that is polluted. This decreases our average life expectancy by more than two years. Air pollution is now monitored in six thousand cities around the world.

# Source 2: Is the future of transport electric powered?

To avoid producing polluting exhaust gases some vehicles are powered by batteries using electricity. They do not produce exhaust gas pollution and are less noisy.

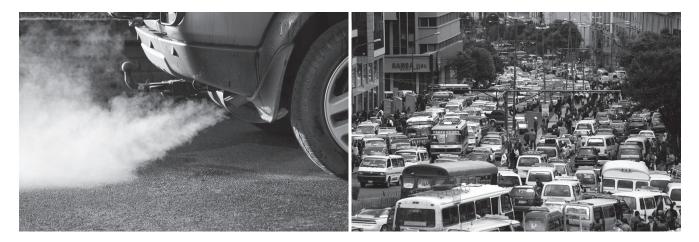
Batteries can be recharged locally at home or at work. However, they can only travel short distances before recharging, which takes several hours. Sometimes finding a charging point is difficult.

Electric vehicles need less maintenance because they have fewer moving parts. Recharging is cheaper than paying for fuel, however, electric cars are expensive to buy.

# Source 3: We need less polluting forms of transport for the future

A television programme about transport reported that by 2030, passenger numbers will reach 5.6 billion globally. This is a problem! Think of the increase in pollution this will create.

Professor Hane, a transport expert, said that 100000 people drive into the city every day. Look at these images of pollution. Can you imagine the health risks and damage to the environment?



We need to find cleaner forms of transport. Two ways to reduce pollution and congestion are underground trains and bus rapid transport systems. Both carry many passengers. This will reduce the number of vehicles in the city. Another solution is greater use of electric vehicles. Also, cycling and walking are becoming more popular in cities and reduce pollution.

# Source 4: A debate about pollution from transport

# Bina

I have run a successful building business for 15 years. The business needs large vehicles to transport raw materials, equipment and workers. We depend on diesel, a type of fossil fuel, to move products and people. My vehicles must reach remote quarries for stone.

It is not possible for my business to use electric vehicles. New sources of energy are not reliable. Technology has not progressed enough to transport very heavy products. It is fantasy to think that the wind and sun will produce enough electricity to power billions of vehicles. We will have to use oil to make fuels for a lot longer.

We have increased our profits by 20 per cent by using fossil fuels. People say we should pay more taxes to stop using diesel. If the government charge us more tax we will go out of business. My workers will be unemployed. Experts say that we will always need oil for plastics and medicines. We cannot just get rid of oil for a bit of pollution.

# Ahram

You are more concerned about your business and its profits than pollution! Everyone should be trying to think about how pollution will affect future generations. Especially businesses like yours!

A science programme on television described healthier ways to travel. Pollution is creating so many environmental problems that we cannot afford to wait to reduce our use of fuels. Our local politician says we need to act now to make a difference. We should be using public transport, walking or cycling more often. It's not only good for the environment, it is also cheaper and healthier!

My children walk two kilometres to school, they are concerned about pollution. We should buy more of our goods from local businesses so that we don't need as much transport.

We shouldn't leave it to future generations to solve our problems.

Question	Answer	Marks
1(a)	From Source 1, how many cities monitor air pollution?	1
	Assessment objective: identification of information Main Annotations Candidates should identify the following from Source 1: Six thousand (6000)	
	1 mark should be awarded for identifying the answer above. Further guidance – the only acceptable answer is listed above. However, candidates may use their own words.	
1(b)	From Source 2, identify two advantages of using electric vehicles. Assessment objective: identification of information Main Annotations	2
	<ul> <li>Can be recharged locally at home or at work</li> <li>Recharging is cheaper than paying for fuel</li> <li>1 mark should be awarded for each correctly identified advantage.</li> <li>Further guidance – the only acceptable answers are listed above. However, candidates may use their own words.</li> </ul>	

Question	Answer	Marks
1(c)	Which advantage of using electric vehicles do you think is the most significant? Explain why.	3
	Assessment objective: creating a line of argument using reasons and evidence	
	Main Annotations ✔ 🗙 🔼	
	Indicative content:	
	<ul> <li>Candidates may identify one of the following advantages:</li> <li>Do not produce exhaust gas pollution</li> <li>Require less maintenance</li> <li>Less noisy</li> <li>Can be recharged at home or work</li> <li>Recharging is cheaper than paying for fuel</li> </ul>	
	<ul> <li>Candidates may give the following reasons, any of which could be used, to justify their choice:</li> <li>Has greatest impact</li> <li>Affects most people</li> <li>Effects are significant e.g. improves health/reduces pollution</li> <li>Ethically or morally most justifiable</li> <li>Has multiple positive consequences</li> <li>Creates spiral of virtue</li> <li>Affects other aspects of life in society.</li> <li>Other reasonable response</li> </ul>	
	The following levels of response should be used to award marks:	
	Level 3 (3 marks) Good response Clear explanation of significance explicitly linked to the selected advantage.	
	Level 2 (2 marks) Reasonable response Some explanation of significance. The link between the explanation and an advantage may be implicit/unclear at times.	
	Level 1 (1 mark) Limited response A consequence is identified but with limited or no explanation of significance.	
	Level 0 (0 marks) No relevant response or creditworthy material.	

Question	Answer	Marks
1(d)	Explain why the problems of pollution from transport are an important local issue.	6
	Assessment objective: creating a line of argument using reasons and evidence	
	Main Annotations ✔ 🗙 🔼 💡	
	Indicative content:	
	<ul> <li>Cost of monitoring air pollution</li> <li>More health care needed locally</li> <li>Life expectancy reduced so a change in age ranges locally</li> <li>Local environmental damage/pollution</li> <li>Time lost at work if workers are ill from the effects of pollution</li> <li>Trade with other areas/cities will be affected</li> <li>Impact on economy</li> <li>Impact on tourism</li> <li>Other reasonable response</li> </ul> The following levels of response should be used to award marks: Level 3 (5–6 marks) Good response Clearly reasoned, credible and structured explanation of importance. The local dimension is explicit.	
	Level 2 (3–4 marks) Reasonable response Some reasoned explanation of importance. The local dimension is implicit at times.	
	<b>Level 1 (1–2 marks) Limited response</b> Limited reasoning and explanation of importance. Explanations are partial, generalised and lack clarity. The local dimension is not apparent.	
	Level 0 (0 marks) No relevant response or creditworthy material.	

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Question	Answer	Marks
2(a)	'We need less polluting forms of transport for the future.'	6
	What are the strengths and weaknesses of the argument supporting this claim?	
	Assessment objective: evaluation of argument, including reasoning, language and evidence	
	Main Annotations ✔ DEV 🗙 🔼	
	Indicative content:	
	Candidates are likely to discuss the following evaluative points relating to Source 3	
	<ul> <li>Strengths:</li> <li>Reference to television programme as evidence</li> <li>Statistics included</li> </ul>	
	<ul> <li>Rhetorical questions – appeals to emotions</li> <li>Use of professional expertise</li> </ul>	
	Use of photo evidence	
	<ul><li>Suggests alternatives transport</li><li>Other reasonable response</li></ul>	
	<ul> <li>Weaknesses:</li> <li>Does not give specific information about the television programme</li> <li>Vague information about the expert/little citation</li> <li>Lack of evidence to support the increase in cycling and walking</li> <li>Appeals to emotion</li> <li>Lack of balance</li> <li>Other reasonable response</li> </ul>	
	The following levels of response should be used to award marks:	
	Level 3 (5–6 marks) Good response Clearly explained and credible evaluation.	
	Evaluation is clearly focused on the evidence and/or reasons, the strengths and weaknesses are explained. There is usually some clear reference to the evidence and/or reasons in the source e.g. quotation/summary.	
	Usually, two (or more) developed/explained/supported points, with some other undeveloped points; or a wide range (usually four or more) of undeveloped points.	
	Level 2 (3–4 marks) Reasonable response Some strengths and/or weaknesses of the reasons/evidence are identified or described briefly but not usually explained; there may be some lack of clarity and the answer may be difficult to follow at times.	
	Usually, the response contains one (or more) developed/explained/supported point(s), with some other undeveloped points. Some (usually two or more) undeveloped points may be sufficient to reach this level.	

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Question	Answer	Marks
2(a)	Level 1 (1–2 marks) Limited response Limited evaluation of the reasons/evidence which is unsupported and asserted. The response is unclear, tangential, or generalised. Usually contains one or two undeveloped points. Answers at this level may repeat source material with little understanding.	
	Level 0 (0 marks) No relevant response or creditworthy material.	
2(b)	'Cycling and walking are becoming more popular in cities.' How could you test this claim?	8
	You may consider the types of information, sources of evidence or methods you might use.	
	Assessment objective: designing research to test a claim	
	Main Annotations V DEV X <a></a>	
	Candidates are likely to discuss the following ways to test the claim stated in Source 3.	
	<ul> <li>Possible types of information:</li> <li>Compare statistics/information on cycling and walking</li> <li>Data from city transport department</li> <li>Individual testimony or personal experience.</li> <li>Material from government web sites</li> <li>Publications/documents from pressure groups/charities promoting cycling/walking</li> <li>Other relevant response.</li> </ul>	
	<ul> <li>Possible sources of information:</li> <li>National and local governments and their departments</li> <li>International organisations, e.g. United Nations</li> <li>Experts in healthy activities</li> <li>Research reports</li> <li>Pressure groups, charities and NGOs</li> <li>Media and the internet.</li> <li>Other relevant response.</li> </ul>	
	<ul> <li>Possible methods:</li> <li>Review of secondary sources/literature/research/documents.</li> <li>Interview relevant experts</li> <li>Internet search.</li> <li>Questionnaires.</li> <li>Surveys.</li> <li>Other relevant response.</li> </ul>	
	The following levels of response should be used to award marks:	

Question	Answer	Marks
2(b)	The following levels of response should be used to award marks:	
	Level 4 (7–8 marks) Very good response Clearly reasoned and credible explanation of a range of ways to test the claim. The response usually contains three (or more) developed/explained/supported points and may contain some undeveloped points.	
	The response is explicitly related to testing the claim.	
	Level 3 (5–6 marks) Good response Reasoned and mainly credible explanation of ways to test the claim. The response usually contains two (or more) developed/explained/supported points and may contain some undeveloped points.	
	The response is related to testing the claim at times. <b>Level 2 (3–4 marks) Reasonable response</b> Some reasoning and explanation of ways to test the claim. The response usually contains one (or more) developed/explained/supported point(s), and/or a range of undeveloped points. The response may lack clarity.	
	The response is implicitly related to testing the claim.	
	<b>Level 1 (1–2 marks) Limited response</b> Limited explanation of ways to test the claim. The response usually contains one or two simple, undeveloped, and asserted points.	
	There is little or no relevance to testing the claim and the methods, sources and types of information are generally not appropriate for the claim being tested.	
	Level 0 (0 marks) No relevant response or creditworthy material.	
	Further guidance - responses that do not link explicitly to the issue/context and are simply a list of research methods/sources/types of information should not score higher than Level 2.	

Question	Answer	Marks
3(a)	Identify <u>one</u> opinion from Bina's statement. Explain why it is an opinion.	2
	Assessment objective: understanding and application of the term 'opinion'	
	Main Annotations 🗸 🗙 🔼 BOD	
	An opinion is a point of view or someone's belief, that is subjective, not necessarily shared by others, and may not be verifiable.	
	<ul> <li>Candidates may identify one of the following from Source 4.</li> <li>It is not possible for my business to use electric vehicles.</li> <li>New sources of energy are not reliable.</li> <li>Technology has not progressed enough to transport very heavy products.</li> <li>It is fantasy to think that the wind and sun will produce enough electricity to power billions of vehicles.</li> <li>We will have to use oil to make fuels for a lot longer.</li> <li>People say we should pay more taxes to stop using diesel fuel.</li> <li>If the government charge us more tax we will go out of business.</li> <li>My workers will be unemployed.</li> <li>We cannot just get rid of oil for a bit of pollution.</li> <li>1 mark for correctly identifying an opinion from the list above.</li> </ul>	
	1 mark for a response that demonstrates a clear understanding of an opinion. <i>Further guidance – note that the only acceptable answers are listed above.</i>	
	However, candidates may use their own words.	
3(b)(i)	Ahram is arguing that we should find less polluting ways to travel.	1
	Identify one fact from Ahram's statement.	
	Assessment objective: understanding and application of the term 'fact'	
	Main Annotations ✔ 🗙 🔼 BOD	
	<ul> <li>Candidates may identify one of the following from Ahram's statement:</li> <li>Pollution is creating environmental problems</li> <li>A science programme described healthier ways to travel</li> <li>My children walk two kilometres to school</li> <li>Our local politician says we need to act now to make a difference</li> <li>Public transport/cycling/walking is good for the environment/cheaper/ healthier.</li> </ul>	
	1 mark should be awarded for identifying one of the above facts.	
	Further guidance – note that the only acceptable answers are listed above. However, candidates may use their own words.	

Question	Answer	Marks
3(b)(ii)	Explain how well this fact supports Ahram's statement.	2
	Assessment objective: evaluation of evidence supporting an argument Main Annotations ✔ 🗙 🔼 BOD	
	Examples of the points that could be made when explaining how well the fact supports the argument:	
	<ul> <li>Supports very well because it explains why Ahram supports his views</li> <li>Some support as the value judgement is relevant to the argument but it is only based on opinion and not evidence.</li> <li>Limited support as is simply a statement of his beliefs without evidence.</li> </ul>	
	Use the following criteria to award a maximum of two marks.	
	Award 1 mark for an attempt to say how well the fact supports the argument e.g. 'It supports the argument quite well.' or 'It gives some support.' Or 'it supports poorly because' or 'it reduces the credibility'.	
	Award 1 mark for making a link to the argument e.g. 'because it provides some evidence for Ahram's argument.' or ' the fact gets the attention of the reader.'	
	Further guidance – Q3bi must be answered correctly to be awarded marks for this question.	

Question	Answer	Marks
3(c)	Which argument is more convincing, Bina's or Ahram's?	15
	Your answer should consider both arguments, and you should support your point of view with their words.	
	<ul> <li>You should also consider:</li> <li>the strength of their reasoning and evidence</li> <li>their use of language</li> <li>the different types of information used.</li> </ul>	
	Assessment objective: analyse and evaluate evidence and reasoning used to support claims and perspectives	
	Main Annotations ✔ 🗙 🔼 💡 DEV BOD J	
	Indicative content:	
	Candidates are expected to evaluate the arguments presented in Source 4 and compare their effectiveness. They should make a supported judgement with some explanation about which person has the most convincing argument.	
	Candidates may support their judgement by considering: Strength of reasoning: • Logic	
	Structure	
	<ul> <li>Balance</li> <li>Claims</li> </ul>	
	consequences of the ideas presented	
	Use of language:	
	<ul><li>Tone – emotive, exaggerated, precise</li><li>Clarity</li></ul>	
	Evidence:	
	<ul><li>Range of information and depth</li><li>Relevance</li></ul>	
	• Sufficiency – sample	
	<ul> <li>Source – media; internet</li> <li>Date – how recent</li> </ul>	
	<ul> <li>Different types of information – fact, opinion, value, anecdote</li> </ul>	
	Testimony – from experience and expert	
	Sources of bias	
	<ul> <li>Local interest</li> <li>Economic</li> </ul>	
	Personal values	
	Experience	
	Acceptability of their values to others	
	How likely other people are to agree with their perspective/view	

Question	Answer	Marks
3(c)	The following levels of response should be used to award marks:	
	<b>Level 5 (13–15 marks) Very good response</b> Wide range of clear, credible and well explained points about which argument is more convincing. Coherent, structured evaluation of both arguments with clear comparison.	
	The response usually contains three (or more) developed evaluative points and may include some undeveloped points.	
	Material from the sources is used as evidence to support the evaluation; clear, frequent reference to the evidence and/or arguments in the source e.g. quotation/summary of ideas.	
	A supported judgement is reached.	
	<b>Level 4 (10–12 marks) Good response</b> A range of clear, explained points about which argument is more convincing. Evaluation of both arguments, with some comparison.	
	The response usually contains two (or more) developed evaluative points and may include some undeveloped points. A wide range (four or more) of undeveloped but clearly appropriate points may be sufficient to enter this band at the lower level.	
	Material from the sources is used as evidence to support the evaluation; some reference to the evidence and/or arguments in the source e.g. quotation/summary of ideas.	
	A judgment is reached.	
	Level 3 (7–9 marks) Reasonable response Some strengths and/or weaknesses of the arguments are identified or described but mainly not explained. Evaluative points are partially supported or simply described/asserted. Some discussion of both arguments, with an attempt at comparison, or an evaluation of only one argument.	
	The response usually contains one (or more) developed evaluative points, possibly with some undeveloped points; three (or more) undeveloped points may be sufficient to enter this band at the lower level.	
	Material from the sources may be used occasionally to support the evaluation.	
	The response may lack some clarity and be difficult to follow at times.	
	A judgement is reached.	

Question	Answer	Marks
3(c)	Level 2 (4–6) Basic response A few points about which argument is more convincing. There may be only one argument considered in any detail, with little attempt at comparison. Evaluative points are mainly asserted or descriptive, not explained and lack clarity/relevance at times.	
	The response usually contains two (or more) undeveloped points.	
	A judgement may be reached.	
	Level 1 (1–3 marks) Limited response Limited and unsupported points about which argument is more convincing. The response considers the arguments briefly and/or tangentially. There is little clarity. Answers at this level may repeat source material with little understanding or simply agree/disagree with the arguments presented.	
	The response may not contain any clear evaluative points.	
	Level 0 (0 marks) No relevant response or creditworthy material.	
	Further Guidance	
	Responses that give a very good evaluation of only one argument may achieve Level 3 but no higher.	

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Question	Answer	Marks
4	A government wants to reduce pollution in its cities.	24
	<ul> <li>The following actions are being considered:</li> <li>promoting the use of electric vehicles</li> <li>encouraging more walking and cycling</li> <li>making public transport free.</li> </ul>	
	Which <u>one</u> of these suggestions would you recommend to the government and why?	
	In your answer, you should:	
	<ul> <li>state your recommendation</li> <li>give reasons and evidence to support your choice</li> <li>use the material in the sources and/or any of your own ideas</li> <li>consider different arguments and perspectives.</li> </ul>	
	Assessment Objective: develop a line of reasoning to support an argument, perspective or course(s) of action	
	Main Annotations ✔ 🗙 🔼	
	Indicative content:	
	Candidates are expected to make a judgement about the issue i.e recommending an action to reduce pollution in cities, using reasons and evidence to justify their opinion/selection.	
	Candidates may use and develop the material found in Sources 1 to 4 but should go beyond simply repeating or recycling without interpretation/adaptation. Other material may be introduced but is not necessary to gain full marks.	
	<ul> <li>Candidates may consider some of the following:</li> <li>Reference to scale of impact on reducing pollution in cities</li> <li>Speed of impact.</li> <li>Ethical or moral issues.</li> </ul>	
	<ul> <li>Reference to different consequences and implications for individuals/different age groups/government.</li> </ul>	
	<ul> <li>The influence of individuals and groups on other people.</li> <li>The role of vested interests and power differences.</li> <li>Potential conflicts of interest.</li> </ul>	
	<ul><li>Difficulties in planning and coordinating improvements.</li><li>Cost and resource issues.</li></ul>	
	Other reasonable response.	
	The following levels of response should be used to award marks:	

Question	Answer	Marks
4	The following levels of response should be used to award marks:	
	Level 5 (20–24 marks) Very good response Clear, well supported reasoning about reducing pollution in cities Different arguments and perspectives are clearly considered.	
	The response contains a wide range of clearly reasoned points and/or evidence to support the views expressed, usually with four (or more) developed points, and some undeveloped points. The response is very well-structured and a clear judgement is reached.	
	Level 4 (15–19 marks) Good response Clear, supported reasoning about reducing pollution in cities Different arguments and perspectives are considered.	
	The response contains a range of reasoned points and/or evidence to support the views expressed, usually with three (or more) developed points, and some undeveloped points. A wide range (five or more) of undeveloped but clearly appropriate points may be sufficient to enter this band at the lower level.	
	The response is generally well-structured and a judgement is reached.	
	Level 3 (10–14 marks) Reasonable response Some supported reasoning about the reducing pollution in cities Different arguments and perspectives are included.	
	The response usually contains some reasons and/or evidence to support the views expressed, with some explanation, usually with two (or more) developed points, and some undeveloped points. A range (four or more) of undeveloped but appropriate points may be sufficient to enter this band at the lower level.	
	The response is structured but at times difficult to follow and an attempt is made to give an overall judgement.	
	Level 2 (5–9 marks) Basic response Basic reasoning about reducing pollution in cities. Different arguments are included; perspectives, if present, are unclear.	
	The response usually contains a few reasons and/or evidence, mainly asserted with little explanation. The response usually has one (or more) developed point(s) or a few (three or more) undeveloped points.	
	The response lacks structure and is difficult to follow though a basic judgement may be attempted.	
	<b>Level 1 (1–4 marks) Limited response</b> Limited and unsupported reasoning about the topic in general. Usually, one or two undeveloped points. Different arguments may be included.	
	Level 0 (0 marks) No relevant response or creditworthy material.	