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Examiners' report

GEOGRAPHY

H081

For first teaching in 2016

H081/02 Summer 2022 series

Version 1

Contents

Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates.

The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. A selection of candidate answers is also provided. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

A full copy of the question paper and the mark scheme can be downloaded from OCR.

Advance Information for Summer 2022 assessments

To support student revision, advance information was published about the focus of exams for Summer 2022 assessments. Advance information was available for most GCSE, AS and A Level subjects, Core Maths, FSMQ, and Cambridge Nationals Information Technologies. You can find more information on our website.

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Paper 2 series overview

Candidate responses from the Summer 2022 series followed previous years' preference in favour of three topics, Disease Dilemmas, Hazardous Earth, and Climate Change. An increasing number of centres focused on Disease Dilemmas. Few candidates offered responses for Exploring Oceans and Future of Food therefore, it is difficult to draw generalisations and as a result commentary has not been provided for these questions.

Most candidates attempted to answer all questions within the paper. Candidates had 1 hour and 30 minutes to complete the examination paper. The total maximum mark for the paper was 68 marks. There were very few rubric errors and candidates seemed overall well prepared. It is important for candidates to know the importance of addressing all Assessment Objectives, particularly when the question asks to "Assess this view" or to "To what extent".

Within Section A the quality of candidates' responses continues to improve. It is evident that centres are using the past assessment materials for examination practice. It is important that candidates apply their knowledge and understanding to the question being asked rather than repeating practiced responses. Candidates tend to perform very well on the thematic study of Disease Dilemmas and exhibited high level AO1 skills for their knowledge and understanding. While AO2 was often not as strong.

Section B required candidates to apply their knowledge and understanding from across the course of study to answer geographical questions. It is important for candidates to use the resource booklet as much as possible. The resource booklet is a valuable resource of information which should be used to assist candidates when answering sub-part (a) questions. Candidates who achieve higher levels will show well-developed ideas linking resource evidence (A01) to a particular theme. This should allow candidates to apply their knowledge and understanding (AO1) to a particular geographical theme (A02).

Examiners commented on the fact that within Section B an increasing number of candidates had used their knowledge and skills across the course to try and incorporate a synoptic element to the discussion. This was especially evident within Hazardous Earth and Disease Dilemmas. Where candidates had performed well within Section B there was clear evidence of a holistic geographical perspective to stimulus data. Candidates who did not perform well within Section B often missed opportunities to use the data from the resource booklet to prove a particular viewpoint.

Section C offered a choice of two questions in each topic and candidates were required to select one. The longer 20-mark essay questions have a tendency for candidates to focus more time on knowledge and understanding (AO1). Greater focus should be concentrated on the importance of AO2 skills (analysis and evaluation). Candidates should remember that place specific detail, case studies and examples are needed throughout the response rather than just at the start of the response.

Within Section C the essay questions require candidates to show both show knowledge and understanding (AO1) alongside analysis and evaluation (AO2). Candidates who achieved Level 3 for their AO2 marks tended to make a decision about whether they feel the statement is true or false. Candidates who performed well with their extended responses considered the statements and then reached a conclusion regarding the success, failure, or impact of the strategies. Where the word 'success' forms part of an examination question, candidates who did well showed an ability to analyse what the word 'successful' might mean or how judgements might be arrived at. Candidates rarely evaluated the success based on a particular measure. Candidates who did evaluate the strategies against a particular measurement often achieved a higher mark. Some evaluative comments were made which considered a range of factors such as development, time and space.

Candidates who did well on this paper generally did the following:	Candidates who did less well on this paper generally did the following:
• included precise knowledge and understanding of geographical concepts, especially those who integrated place detail into their responses • used place specific detail within geographical responses • applied their knowledge correctly, by offering reasons and evidence for patterns • incorporated the use of figures and data within their responses • provided explicit evidence-based conclusions.	• provided descriptive accounts in all sections of the paper • provided evaluative comments only within the final paragraph • did not use enough evidence or place detail • provided factual information about a topic without applying the facts to the question being asked • did not make full use of the resources provided within Section B.

Section A overview

Candidates can select one topic within Section A from a choice of five topics. Very few candidates made rubric errors indicating that candidates have a good awareness of the structure of the exam paper.

The most popular topic was Disease Dilemmas with the majority of candidates answering these questions. There was significant increase in the number of centres studying Disease Dilemmas. A smaller number of candidates answered the Future of Food and Exploring Oceans topics.

Candidates were able to show in depth knowledge and understanding of their chosen topic, greater focusing on AO2 skills would help candidates improve their overall geographical analysis across the paper.

Question 1 (a)

Topic 2.1 Climate Change

1 (a) Explain how **two** human activities have increased emissions of different greenhouse gases since the pre-industrial era. **[4]**

Candidates correctly identified two human activities. The question required candidates to use AO1 skills (knowledge and understanding) to 'explain' how two human activities have increased emissions of different greenhouse gases. Most candidates chose to discuss cattle ranching and burning of fossil fuels. This often included reference to carbon dioxide and methane. Candidates who achieved full marks would state 2 different human activities and explain how this has increased the emissions of greenhouse gases. Candidates who did not achieve full marks tended to discuss the burning of fossil fuels without a clear focus on the actual human activities involved. The question required reference to different greenhouse gases. Several candidates focused on one specific greenhouse gas usually carbon dioxide.

Misconception

Candidates often talked about carbon rather than carbon dioxide. Carbon dioxide is the oxidised form of carbon.

Question 1 (b)

(b) Examine how the historical background of the global warming debate has evolved over time. **[6]**

This question required candidates to develop what they know and understand about the global warming debate (AO1) to analyse the significance of the historical background in shaping the debate over time. Within this question there are 3 marks for knowledge and understanding of the historical background of the global warming debate. There are 3 marks awarded for analysing (therefore, examining) how the historical background of the debate gas evolved over time.

The more successful responses to this question included two clear explanations in separate paragraphs. This would include a discussion about the historical background with a thorough explanation as to how this background has influenced the global warming debate. Candidates were able to clearly discuss the evidence of global warming over time.

Candidates who did not achieve full marks tended to provide a chronological account of the historical background of climate change which showed AO1 skills. To answer the question fully candidates were required to explain how the historical background has evolved over time. To do so, candidates would have to link the historical background to the impact that this has had on the global warming debate. A Level 3 response calls for thorough knowledge and developed ideas. To achieve a higher mark for AO2 candidates should aim to think about how the historical background links back to the question. After discussing a piece of historical background (AO1) the candidate should then focus on answering the question. Candidates should refer to the original question to analyse and evaluate (AO2) "how does this shape the global warming debate?" or "what does this mean for the global warming debate?".

Most responses focused on the historical background from the 1950s discussing the connection of carbon dioxide emissions to Mauna Lao, Hawaii and the Hockey Stick curve. Less successful responses discussed the earlier research suggesting that carbon emissions would have little impact on the earth. A number of candidates talked with confidence about John Tyndall's research suggesting certain gases – water vapour and CO_2 can trap heat escaping from the atmosphere.

Question 1 (c) (i)

(c) Study **Fig. 1** which shows projected global temperature increase by 2100.

(i) Identify evidence from **Fig. 1** that indicates that there is uncertainty regarding the amount of future warming. **[4]**

This question required candidates to use Figure 1 to question why there is uncertainty regarding the amount of future warming. AO3 skills are being assessed with candidates being required to identify evidence from Figure 1. This requires the candidates to show an interaction with the resource data and specify particular evidence from the resource which suggested there is uncertainty regarding the amount of future warming.

There was a range of evidence which candidates could focus on to indicate that there is uncertainty regarding the amount of future warming. Most candidates identified the range of data presented in the table surrounding the different scenarios. The candidates commented on the fact that the ranges are fairly large and not very accurate. Other evidence included discussing the different projected temperatures for pledges / treaties, current policies and optimistic targets. The figure shows projected temperatures increase by 2100 this included a thermometer with a temperature range of 5 degrees centigrade, with the implication being that the amount of warming could be higher than the scenarios quoted.

Candidates who did well on this question provided 4 pieces of evidence from Figure 1 with a clear interrogation of the resource. This included providing specific data from the infographic.

Question 1 (c) (ii)

(ii) Using evidence from **Fig. 1**, analyse reasons for the uncertainty that exists in terms of future warming scenarios. **[6]**

This question is assessing both AO2 (Knowledge and understanding) as well as AO3 (Evidence) to analyse the reasons for the uncertainty that exists in terms of future warming scenarios. This question requires candidates to interpret Figure 1 and analyse how the evidence shows uncertainty exists in terms of future warming scenarios.

Candidates who did well on this question included evidence from Figure1 to analyse their responses. For instance, quoting the 1.5 degrees centigrade Paris Agreement goal and figures for 'Pledges and Targets' and Current Policies. The large 1.8 degrees' centigrade error margin illustrates the level of uncertainty. Candidates would then provide the reasons why uncertainty exists. Candidates commented on the fact that there is uncertainty due to changes in human activity, behaviour and environmental awareness. This included reference to the increasing response of governments and individuals to respond to the problem of global warming. Candidates showed an awareness of recent global warming debates by discussing the recent COP26 conference. These points were often linked to Figure 1 showing a range of 1^{o}C for optimistic targets.

Question 1 (d)

(d) 'Carbon credits and carbon trading provide the most effective methods for reducing carbon emissions on a global scale.' To what extent do you agree? **[12]**

Candidates are required to use their AO2 skills to discuss "To what extent" they agreed with the statement. This requires candidates to identify the ways that the mitigation methods might be successful (e.g., number of countries involved, reduction in carbon emissions or improving the quality of the environment) and then set out ways these might be measured. Ideas included monitoring carbon dioxide levels and government legislation. Higher level responses were specific about comparing the effectiveness of the carbon credits and carbon trading with alternative methods for reducing carbon emissions.

It was evident in responses to this question that many candidates were well prepared for the topic. The most successful responses demonstrated thorough understanding of carbon credits and carbon trading. The higher level responses illustrated the effectiveness at a range of scales as well as a global scale. There was thorough application of knowledge and understanding (AO1) on the EU carbon trading scheme. Candidates showed a good knowledge about how the carbon credit scheme allowances is reduced each year to ensure members are limiting their CO_2 emissions. Candidates who evaluated the effectiveness of carbon credits and carbon trading made comparisons to national and sub national policies in Denmark and California. AO2 skills were demonstrated with candidates evaluating the effectiveness of the strategies on a global scale. This enabled those candidates to provide a comparative evaluation (AO2) of the effectiveness of carbon crediting compared to the national schemes as discussed in Denmark and California.

Alternative methods to reduce carbon emissions on a global scale includes reference to International Directives such as Kyoto Agreement, COP26 and Paris Agreement.

Extended responses were well-structured and attempts were made to evaluate the statement in the question.

Misconception

EUETS trading occurs exclusively between countries

This is not factually correct; EUETS includes more than 11,000 power stations and industrial plants across the EU. Other organisations, including universities and hospitals, may also be covered by the EUETS depending on the combustion capacity of equipment at their sites.

Question 2 (a)

Topic 2.2 Disease Dilemmas

2 (a) Explain **two** factors that influence the global distribution of tuberculosis. **[4]**

Candidates are required to identify two factors that influence the distribution of tuberculosis. The question required candidates to use AO1 skills (knowledge and understanding) to 'explain' human factors that influence the global distribution of the disease. 1 mark was provided for a correct factor and a second mark for an explanatory point.

Candidates showed a good understanding (AO1) of factors that influenced the global distribution of tuberculosis. This question was generally well answered. Candidates who achieved full marks explained how two different factors influence the global distribution of the disease. Candidates tended to discuss how poverty, crowded conditions and limited access to healthcare can impact the global distribution of tuberculosis. There is a requirement that the response covers the global distribution of the disease. This in some cases was overlooked.

Where marks could not be given it was invariably because the factor that influenced the spread of tuberculosis was not correct. A number of candidates discussed the spread of malaria rather than tuberculosis. It is essential that candidates take time to make sure they understand the command key words within the examination question. It is important that candidates remain on topic and answer the question that's been set.

Misconception

Tuberculosis (TB) only affects people in low-income countries

This is a myth; TB can affect people anywhere in the world. However, there are certain regions where TB is more prevalent.

Question 2 (b)

(b) Examine how climate change provides conditions for emerging infectious diseases to spread. **[6]**

This question requires candidates to develop what they know and understand about how climate change (AO1) provides conditions for emerging infectious diseases to spread (AO2). Within this question there are 3 marks for AO1 (knowledge and understanding) of climate change and a further 3 marks for analysing (AO2) and examining how these conditions help the disease to spread.

The more successful responses to this question included two developed explanations in separate paragraphs. This included a discussion about the changing climatic conditions which impact the spread of the infectious diseases. Candidates were able to clearly discuss how the changes in climate have occurred. Candidates often discussed increased temperatures in one paragraph and then moved on to look at increased rainfall / humidity in their second paragraph. Most responses showed a convincing relationship between climate change and the spread of emerging infectious diseases. Candidates who did well in this question provided a clear cause and effect relationship. This often included responses showing how climate change had resulted in the spread of the disease.

Most candidates discussed the impact climate change has had on the spread of malaria. Candidates overall showed an impressive knowledge of malaria. Candidates who achieved Level 3 showed a thorough understanding of the changes taking place which have increased the spread of the disease. Candidates recognising a range of different diseases such as Dengue Fever, Lyme disease and West Nile virus. Candidates showed AO2 skills by commenting on the fact the changes to climate change have extended the geographical distribution of the infectious disease. This was often well exemplified with place specific detail.

Many candidates showed a very good awareness of the transmission of vector borne diseases increasing in areas of rising temperatures and rainfall. This was often exemplified discussing the changing ability of the vectors to survive. This included reference to temperatures increasing globally which provides conditions for the infectious disease. Candidates linked this with an increase in stagnant water bodies caused by greater frequency of extreme events such as flooding and cyclones.

Exemplar 1

2	b	Climate change is affecting the distribution of different diseases such as west Nile virus by affecting the way the disease spreads. Endemic to Africa at first as this is a vector bourne disease, the vector being the culex mosquito. The mosquito thrived in the warm and humid conditions of Africa but due to climate change and warming the mosquito has invaded new territories to the north and infected migratory birds which fly off and take the disease across to different countries. After some time the disease infected people all the way from the Americas to Asia and Europe where the disease continued to thrive as temperatures are higher due to climate change. Another example is the disease dengue. The vector of this disease are the Aede mosquitos that spread the disease. These mosquitos need warmth and humidity and due to climate change that has been provided. In the South pacific temperatures of 32°c and a humidity level of 95% enables a big breeding ground for the vectors so they will grow and infect new countries in the region, all due to the warming effect brought on by climate change.

The candidate refers to a disease (West Nile virus). They explain how the increase in temperature and humid conditions caused by climate change has stimulated the spread of the virus (AO1). A second disease is discussed (Dengue virus). The response shows a clear explanation as to how the increases in temperature has stimulated the spread (AO2) of Dengue virus and extended the geographical range. This candidate achieved Level 3 – 6 marks.

Question 2 (c) (i)

(c) Study **Fig. 2** which shows estimated prevalence of malaria infection during pregnancy in sub-Saharan Africa, 2018.

(i) Identify evidence that **Fig. 2** lacks accuracy in representing incidence of malaria in sub-Saharan Africa. **[4]**

This question required candidates to use Figure 2 to question why there is a lack of accuracy in representing the incidence of malaria in sub-Saharan Africa. AO3 skills are being assessed with candidates being required to identify evidence from Figure 2. This required the candidates to show an interaction with the resource and use specific evidence to suggest how Figure 2 lacks accuracy in representing the incidence of malaria.

Accuracy is a measure of the closeness of the measurement of a variable to the true value. The evidence identified in Figure 2 presented a lack of accuracy in representing the incidence of malaria in sub-Saharan Africa. To achieve full marks candidates needed to provide four limitations. Candidates tended to focus on the fact that the data only shows pregnant females and not non-pregnant females and not the entire female population. Candidates correctly identified that countries have been grouped together which showed a lack of accuracy when discussing malaria infections in sub-Sahara Africa.

Candidates who did not achieve full marks tended to provide two pieces of evidence and explained why the data lacks accuracy. The question has no requirement to include an explanation and therefore the candidates were only given 2 marks for the evidence presented. Candidates need to look closely at the wording of the examination question and the number of marks being awarded.

Assessment for learning

Candidates should have plenty of practice at incorporating evidence into their response using the resources provided. Close attention should be paid as to whether the candidate is using the correct original value shown on the resource.

Question 2 (c) (ii)

(ii) Using evidence from **Fig. 2**, analyse reasons for variation in prevalence of malaria infection in sub-Saharan Africa. **[6]**

This question is assessing both AO2 (application of knowledge and understanding) as well as AO3 (geographical skills) to analyse the reasons for the variation in the prevalence of malaria in sub-Saharan Africa. This question requires candidates to use evidence from Figure 2 to analyse reasons for the variation in prevalence of malaria infections in sub-Saharan Africa.

Candidates who picked up on the word 'variation' in the question tended to achieve higher marks than those that did not. Candidates are required to use their AO3 skills to provide evidence from Figure 2 of the variations across sub-Saharan Africa. This often included statistical evidence to compare West Africa to East and South Africa (+Sudan and Somalia). AO3 skills were evident when candidates provided manipulation of the statistics to show variations. Candidates correctly identified variations such as higher prevalence of malaria infection during pregnancy in Central and West Africa compared to East and Southern Africa.

Candidates provided a range of reasons as to why the variations in prevalence of malaria exists in sub-Saharan Africa. Candidates who achieved Level 3 often provided a clear link to the evidence when explaining the variations. These candidates showed a clear cause / effect relationship. This often included candidates identifying a variation with evidence from Figure 2 (AO3) and then providing a reason for the variation. Candidates achieving Level 3 showed a good knowledge of the reasons for variations in prevalence of malaria. These often focused on both human and physical factors. Candidates' knowledge of physical geography features such as relief, latitude and climatic conditions supported the candidates' (AO2) understanding of the reasons for the variation in prevalence of malaria in sub-Saharan Africa. A number of candidates discussed a specific type of mosquito such as the Anopheles mosquito which thrives in warm, humid conditions where there is plenty of stagnant water.

Candidates who did not achieve full marks tended to describe the reasons why malaria is prevalent in sub-Sahara Africa with little consideration of Figure 2. This often resulted in candidates focusing on the causes of the disease rather than the variations across sub-Sahara Africa.

Question 2 (d)

(d) To what extent do you agree that NGOs play the most important role in dealing with a disease outbreak? **[12]**

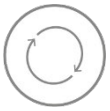
Candidates are required to use their AO2 skills to discuss "To what extent" they agreed with the statement. This required candidates to identify the ways that the NGOs play the most important role in dealing with a disease. AO1 skills assessed the candidate's ability to discuss their knowledge and understanding of the role of NGOs and other organisations in dealing with a disease outbreak.

Cholera was the most common disease discussed when answering this question, but there was a wide variety of other diseases discussed such as such as Covid-19, Ebola and Zika. The question required a disease to be discussed, however, there was no requirement to discuss a range of diseases. Candidates were able to recall facts and information (AO1) about the role the NGO's play following a disease outbreak. Most candidates considered two organisations when explaining their role in dealing with a disease outbreak. Responses tended to focus on organisations such as the Red Cross and National Governments.

The key element in achieving a high level response was focusing on the extent to which the NGO or organisation helped deal with a disease outbreak. The most successful responses demonstrated detailed knowledge of the role of different organisations (AO1) in dealing with a disease outbreak. They were then able to consider the extent of the NGO's role (AO2). These candidates often included evidence-based conclusions to consider the extent to which NGOs played the most important role in dealing with a disease outbreak. There were some well-considered arguments with many candidates suggesting that the NGO's role is more important due to their ability to respond quickly to a disease outbreak. Candidates within Level 3 also provided some convincing AO3 analysis discussing how the effectiveness of these organisations is enhanced when they work together and co-ordinate their response to a disease outbreak.

Several candidates discussed Covid-19. These candidates often concluded that NGOs were not effective (AO2) in dealing with a disease outbreak. Candidates discussed the importance of National Governments during a Pandemic to implement lockdowns, vaccination programs and education campaigns. Candidates provided some interesting responses on the success of vaccination programs within the United Kingdom.

Assessment for learning



Candidates must be prepared to deconstruct the questions, identifying the command words in order to answer the question. "To what extent" questions usually require a balanced essay. Therefore, part of the essay needs to argue in favour of the statement with geographical evidence, and the rest (apart from the introduction and conclusion) should argue against the argument/statement/question. There should be a clear account about how much you agree with a statement based on the evidence in argument.

Misconception

A common misunderstanding by candidates is that pharmaceutical companies are classed as NGOs. A non-government organisation (NGO) is an organisation that generally is formed independently from government. They are typically non-profit making companies.

Question 5 (a)

Topic 2.5 Hazardous Earth

5 (a) Explain **two** ways in which the basic structure of the Earth has a role in the theory of plate tectonics. **[4]**

Candidates correctly identified two ways in which the basic structure of the earth has a role in the theory of plate tectonics. The question required candidates to use AO1 skills (knowledge and understanding) to 'explain' two ways that the basic structure of the earth has a role in the theory of plate tectonics. Most candidates chose to discuss convection currents and temperature differences between the core and lithosphere. Candidates who achieved full marks would explain 2 different ways the basic structure of the earth had a role to play in the theory of plate tectonics.

Candidates used clear geographical vocabulary when discussing the basic structure of the earth. Many examination responses showed a secure understanding of the role of convection currents in relation to the theory of plate tectonics. It was clear that centres had prepared the candidates well to discuss the theory of plate tectonics.

Candidates who did not achieve full marks tended to discuss the theory of plate tectonics without a clear focus on the role of the basic structure of the earth. The question required reference to 'two ways'. There was no requirement to discuss the range of evidence for the theory of plate tectonics.

Question 5 (b)

(b) Examine how movements of the Earth's crust form mid-oceanic ridges. **[6]**

This question required candidates to develop what they know and understand about the movements of the earth's crust in mid-oceanic ridges (AO1) for 3 marks and analyse how movements of the earth's crust form mid-oceanic ridges (AO2) for 3 marks.

Many candidates were able to access Level 2 in this question, some included a diagram to support their response. While there is no requirement to include a diagram it can help candidates show geographical processes. At times, these responses lacked the development to access Level 3. To do so, candidates need to make sure that they are demonstrating "thorough knowledge" of how the earth's movements create mid-oceanic ridges.

The candidates often used appropriate exemplification such as The Mid Atlantic Ridge.

Level 3 responses included well-developed ideas which linked back to the questions connecting plate movements of the earth's crust to the formation of mid-oceanic ridges. In Exemplar 2 the candidate does this very effectively using their knowledge and understanding of mid-oceanic ridges (AO1) to examine the impact of diverging plates.

Exemplar 2

5	b	Two diverging oceanic plates as a result of opposing clockwise and anti-clockwise convection currents can create mid-oceanic ridges. As the two plates diverge, the crust is stretched thin allowing magma from the mantle to pass through to the ocean floor. This lava ~~from cools~~ is less viscous as there is no build-up of pressure from gases and therefore flows quicker than more viscous lava. When the lava comes in contact with the cold ocean it cools quickly forming ~~igneo~~ new igneous rock. If this cooling occurs quickly it can form pillow lava (cloud-shaped formations of igneous rock ~~S2~~). As the plates continue to diverge, more lava seeps out and cools forming a mid-oceanic ridge such as the Mid-Atlantic Ridge formed by the divergence of the North American and Eurasian plates. As the igneous rock cools, iron minerals align with the magnetic poles creating alternating bands as the plates diverge; this is called paleomagnetism. Ridge push can also accelerate the divergence.

The candidate was awarded full marks. They have demonstrated a thorough knowledge and understanding of the way in which the earth's movements relate to the mid-oceanic ridges. This includes reference to diverging plate boundaries, sea floor spreading and pillow lava (AO1). The candidate demonstrates a thorough analysis of movements of the earth's crust. Place specific detail is included with reference to the Mid-Atlantic Ridge.

Question 5 (c) (i)

(c) Study **Fig. 5** which shows the VEI (Volcanic Explosive Index).

(i) Identify evidence from **Fig. 5** that indicates how the VEI measures volcanic activity. **[4]**

This question required candidates to use Figure 5 to identify the evidence to indicate how the VEI measures volcanic activity. Geographical skills (AO3) are being assessed with candidates being required to identify evidence from Figure 5. This requires the candidates to show an interaction with the resource and specify particular evidence from that to show how the VEI scale measures volcanic activity.

Candidates who achieved full marks provided four different pieces of evidence from Figure 5 that show how the VEI scale measures volcanic activity. Specific parts of the infographic should be mentioned within the answer, most responses contained 2- 3 ways from Figure 5 indicating how the VEI measures volcanic activity. Question 5 (c) (i) has no requirement to include an explanation and therefore the candidates were only given 2 marks for the evidence presented. Candidates need to look closely at the wording of the examination question and the number of marks being awarded.

Frequently discussed points included reference to the magnitude and intensity of the volcanic activity. Candidates identified the evidence in Figure 5 that shows a scale running from 0-8 as a logarithmic scale, with each interval on the scale representing a tenfold increase. Fewer candidates discussed the evidence of larger circles suggesting a more explosive eruption.

Question 5 (c) (ii)

(ii) Using evidence from **Fig. 5**, analyse reasons for variations in VEI measurements. **[6]**

This question is assessing both AO2 (Application of knowledge and understanding) as well as AO3 (Evidence) to analyse the reasons for the variation in VEI measurements. This question requires candidates to use evidence from Figure 5 in their response.

Opportunities to engage with the resource were missed by many candidates. In this type of question, candidates should look for variations; in this case, why there are variations in VEI measurements. In looking for the variations candidates should analyse the reasons behind variations and using evidence to support their discussion. Relatively few candidates used the infographic resource effectively but instead focused on describing potential impacts and disruption cause by a volcanic eruption.

Candidates who did well on this question showed a thorough application of knowledge and understanding to analyse the reasons for variations in VEI measurements (AO1). This included an analysis of how the levels of explosiveness are often related to the rock composition and the abundance of silica influencing viscosity – more silica traps gas bubbles which increases the VEI measurement. Within Level 3 there is an expectation that the response would be well supported with evidence from the resource such as column height and VEI measurements.

Candidates talked with confidence about different types of eruption between effusive and explosive eruptions impacting the VEI measurements. Candidates were aware of the impact of different plate movements leading to variations in levels of explosion. This was often linked to subduction eruptions having higher VEI measurements while divergent plate boundaries have lower VEI measurements.

Question 5 (d)

(d) To what extent does the capacity of people to cope with tectonic hazards change over time? **[12]**

Candidates are required to use their AO2 skills to discuss "To what extent" they agreed with the statement. This requires candidates to comment on the extent to which the capacity of people to cope with tectonic hazards change over time. AO1 skills assessed the candidate's ability to discuss their knowledge and understanding of the capacity of people to cope with tectonic hazards. AO2 was assessed the candidate's application of knowledge and understanding to evaluate the extent to which the capacity of people to cope with tectonic hazards changes over time.

Candidates' responses were predominantly based around earthquake hazards. Candidates discussed hazard management such as comprehensive planning and preparation. Candidates were aware of the importance of mitigating against the vulnerability via methods such as earthquake drills and evacuation planning. Candidates provided clear examples as to how Japan has becoming increasingly able to cope with the tectonic hazards over time. Candidates who achieved Level 2 tended to describe the methods rather than explain how the strategy has impacted people's ability to cope with tectonic hazards over time.

Most candidates chose to look at 'capacity' in terms of the relative development of the country. Comparisons were made between Japan and Nepal. The ability of ACs to cope was generally seen as increasing over time in comparison to LIDCs. Candidates demonstrated a thorough understanding of the capacity of people to cope with tectonic hazards discussing both mitigation against the hazard and mitigating against the vulnerability. Candidates had a good understanding of the different ways to mitigate tectonic hazards.

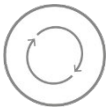
The element of time and ability to cope were often interconnected and linked to changes in technology. Candidates made effective validated conclusions discussing how technology can lower death rates and economic impacts and hence increase people's ability to cope with tectonic hazards. Technology improvements were discussed across a wide range of situations. This included improved prediction, protection and prevention. Candidates often used Japan as an example of a country who has made significant progress with the ability to cope with tectonic hazards over time. Tsunami warning systems, community preparedness and seismic building design were well linked to changes in technology over time.

AO2 comments were often insightful considering how LIDCs may not have the same options available to mitigate against vulnerability and the hazard due to financial constraints. In several responses candidates commented on the fact that there has been increased frequency of tectonic hazards in some areas which has changed the ability to cope in a negative way.

The more successful responses included specific place detail to back up their assertions. Candidates did occasionally refer to the country without further place specific detail. This tended to result in candidates' responses becoming generic.

Most candidates ensured their responses had an evaluative comment. Candidates should provide evaluative comments across the response rather than just in the conclusion which focus on the elements of both time and scale.

Assessment for learning



Case Studies, where supported with place specific detail can be used to help demonstrate a particular viewpoint to the examiner.

Section B overview

Candidates are expected to use Section B as their opportunity to provide some synoptic geography within their examination responses. Synoptic assessment allows geography candidates to demonstrate their understanding of the connections between different aspects of the subject and topic content. It involves the explicit drawing together of knowledge, skills and understanding within different parts of the AS Level course. The synoptic questions will link each Geographical Debate to another topic within the AS content (Physical Systems or Human Interactions) but not another Geographical Debate.

Candidates seemed to have been very well prepared for Section B. There was clear evidence of candidates applying their knowledge and understanding to the context of the question. Greater use of the resource booklet would have enabled candidates to provide evidence for their discussions.

Candidates generally remained with the same topic area which was answered within Section A.

Question 6 (a)

6 (a) With reference to **Fig. 6**, suggest how recent changes in atmospheric carbon dioxide concentrations may affect **one** landscape system you have studied. **[8]**

Question 6a is assessing both AO1 and AO2 skills. Candidates are required to demonstrate their knowledge and understanding (AO1) with regard to how recent changes in atmospheric carbon dioxide concentrations may affect one landscape system. AO2 skills require application of this knowledge and understanding and interpretation of Figure 6, with regards to how recent changes in atmospheric carbon dioxide concentrations may affect one landscape system. There is a requirement that candidates make use of Figure 6. There were several missed opportunities for candidates to use the resource to its full potential.

Candidates tended to focus on Coastal Landscapes and Systems. Discussions often focused around increasing amounts of carbon dioxide concentrates increasing the amount of chemical weathering via carbonation as seen below in Exemplar 3.

Candidates who answered this question well used Figure 6 to prove that there had been an increase in CO_2 concentrations between January 2005 to November 2019. Candidates showed elements of synoptic thinking by drawing together knowledge, skills and understanding within different parts of the AS Level course, for example, references to dryland. glaciated, or coastal landscapes.

Candidates did well naming places within their chosen landscape to provide locational detail. Please see exemplar 3 below.

Exemplar 3

6 a. Carbon dioxide concentrations have increased from ~~57~~ 382ppm in 2006 to 412ppm in 2019. This can affect different landforms in different ways - Flamborough Head is one that could be effected.

As CO_2 concentrations are increasing rapidly and from global warming there's going to be more water vapour - this has resulted in ~~that~~ increased amounts of chemical weathering through carbonation. CO_2 reacts with water vapour to form carbonic acid which ~~could~~ would fall as rain. This rain landing on Flamborough Head (a ~~limesto~~ carboniferous limestone rock) it would ~~for~~ react to form bicarbonate ~~ions~~, this would cause chemical weathering to the cliff and would result in associated mass movement.

Higher CO_2 concentrations is also going to enhance the greenhouse effect, this would cause global warming; With warming would come sea level rise. Rising sea levels would reduce the ~~fric~~ friction of waves acting against the cliffs - this means they'd have more energy resulting in higher rates of erosion & (0·8mm a year) at Flamborough Head.

The candidate was awarded Level 3. They have referred to global carbon dioxide levels rising between from 2006 to 2019 from 382ppm to 412ppm (data retrieved from the figure). The candidate has used their knowledge and understanding (AO2) to interpret how recent changes in atmospheric carbon dioxide concentrations may affect a coastal landscape system. The candidate suggests how weathering by carbonation increases due to increases in atmospheric carbon dioxide creating more concentrated carbonic acid in rainwater. This is well linked to a specific location.

Question 6 (b)

(b) Examine how a changing climate could have a role in driving economic change in places. **[8]**

Question 6 (b) has 4 marks awarded for AO1 and 4 marks awarded for AO2. Within AO1 candidates need to demonstrate knowledge and understanding of a changing climate driving economic change.

Candidates who were effective at answering this question demonstrated thorough knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales. Candidates within Level 3 presented a discussion of the changes to the climate. This was often based around rising temperatures, increased rainfall and increased extreme weather events such as droughts, storms and heatwaves. A significant number of candidates discussed how the changing climate results in increased sea levels which can play a role in driving economic change.

There is a requirement within the question to explain how a changing climate can result in economic change. Candidates often based their responses around the idea of increasing sea levels impacting coastal industries especially farming communities within LIDCs. The role of economic change was considered as a shift away from Primary industries towards Tertiary Industries. Some candidates provided some very insightful comments about the way in which global warming has resulted in places adapting to the challenges and being seen as a tourist destination in their own right. This included reference to East Village, Stratford, and Curitiba in Brazil.

Other candidates took a different approach considering the impact on industries and looked at the opportunities created in economic sectors to carry out research into renewable energy and the expansion of research in helping companies to become more carbon friendly. It was interesting to see that some candidates felt that a change in climate could result in a positive shift in economic change.

Question 7 (a)

Topic 2.2 Disease Dilemmas

7 (a) With reference to **Fig. 7**, suggest how outbreaks of communicable disease might be influenced by shifting flows of people. **[8]**

Question 7 (a) is assessing both AO1 and AO2 skills. Candidates are required to suggest how outbreaks of communicable disease might be influenced by shifting flows of people. AO1 requires candidates to demonstrate knowledge and understanding of outbreaks of communicable disease and shifting flows of people. AO2 requires application of that knowledge and understanding and interpretation of Figure 7 in relation to the question set. There is a requirement that candidates make use of Figure 7. There were several missed opportunities for candidates to use the resource to its full potential.

Within this question candidates are expected to comment on the communicable disease outbreaks and shifting flows of people should include reference to the trends shown in Figure 7. Most candidates focused on the large peak within July. Less successful responses discussed the reasons for a decline in the cases of Swine Flu during September. Candidates tended to focus on the peaks within Figure 7. Greater use of the resource provided would help candidates to give more variations across the year. Examination responses would benefit from using data within the resource. Candidates rarely provided a synoptic link within this answer.

Candidates who answered this question well used Figure 7 to comment on how communicable disease outbreaks are influenced by shifting flows of people. This was shown by well-developed ideas linking resource evidence on communicable disease seen in Figure 7 to shifting flows of people. Reasons provided included reference to migrant population, tourist movement and school holidays. Less successful responses discussed the movement of people on a daily basis such as commuting and the impact of outbreaks among offices and workplaces.

Question 7 (b)

(b) Examine how prevalence of disease decreases over time through government investment in services. **[8]**

The question requires (AO1) knowledge and understanding of how disease prevalence decreases over time with government investment. AO2 was assessing the ability of candidates to analyse how prevalence of disease decreases over time through government investment in services.

Candidates tended to focus on non-communicable diseases and mainly UK based examples when discussing government investment. A significant number of candidates discussed the impact of government investment in Covid-19 vaccinations, education campaigns and increased NHS investment. Candidates tended to focus on one particular disease. Candidates would often provide generalised responses such as 'it helped decrease the prevalence of the disease'. Including statistics relating to the decrease would show clear evidence as to whether the investment in services has decreased the prevalence of disease.

A number of candidates used the term 'Cancer' with little discussion of the type of cancer. Similarly, when discussing changes in medical technology the discussion tended to be generic. Candidates need to be specific about what the change in technology / research has been and how this new technology / research has helped decrease the prevalence of different types of cancer. Candidates who achieved Level 3 often talked about screening programmes introduced, for example, bowel cancer screening checks available to everyone aged 60 to 74 years. Several candidates went on to discuss plans to expand the screening to make it available to everyone aged 50 to 59 years.

Candidates who did well with on this question focused on specific details such as the evolving nature of the government services over time. This included investment in vaccination programmes to reduce prevalence or even eradication of communicable / infectious diseases over time such as smallpox. Candidates achieving Level 3 contextualised the disease prevalence with a clear discussion of the government's investment changing over time. Most candidates concluded that the disease prevalence does decrease over time with government investment. Several candidates made some convincing analysis to discuss the fact that the government investment needs to remain consistent if disease prevalence is to decrease. Candidates often exemplified their conclusions with reference to how malaria was eradicated from Mauritius for a short period of time because of government investment in spraying breeding sites and buildings. This was often an effective point of discussion as candidates evaluated the role of government investment in comparison to other factors such as natural hazards.

Question 10 (a)

Topic 2.5 Hazardous Earth

10 (a) With reference to **Fig. 10**, suggest how the ground shaking and displacement experienced during an earthquake event may affect **one** landscape system you have studied. **[8]**

Question 10 (a) is assessing both AO1 and AO2 skills. Candidates are required to suggest how the ground shaking and displacement experienced during an earthquake event may affect one landscape system.

AO1 requires candidates to demonstrate knowledge and understanding of the effects earthquake ground shaking and displacement have on one landscape system.

AO2 requires candidate to apply their knowledge and understanding of the above and interpret Figure 10 in relation to the question set. There is a requirement that candidates make use of Figure 10.

Opportunities to clearly engage with the resource were missed by many candidates.

Candidates within Level 1 tended to ignore the impact on a particular landscape system and instead focused on describing general impacts and disruption cause by earthquake activity. At this level there tended to be some misinterpretation of the question. Candidates should look at how the displacement shown in Figure 10 may impact one landscape system.

Candidates achieving Level 3 effectively engaged with Figure 10. This included reference to the clusters of larger amplitude waves at 53 seconds. The scale of the earthquake was discussed with reference to associated hazards such as tsunamis impacting the characteristics of different coastlines and coastal processes. Candidates in Level 3 often provided a comprehensive discussion of the impact on coastal landforms including the sudden alteration of cliffs and stacks. Several candidates provided some synoptic discussion making reference to Climate Change and Perceptions of Place. Many candidates focused on the impact on Coastal landscapes. Candidates commented on the fact the displacement may cause rapid advances in coastal retreat between earthquake events. Several candidates comment on a sudden increase in sediment supply at the nearshore zone.

Question 10 (b)

(b) Examine how earthquake activity could have a role in driving economic change in places. **[8]**

Question 10 (b) has 4 marks awarded for AO1 and 4 marks awarded for AO2. Within AO1 candidates are expected to demonstrate knowledge and understanding of how earthquake activity could have a role in driving economic change. AO2 is assessed via the inclusion of analysis in the ways in which earthquake activity could have a role in driving economic change.

Candidates who were effective at answering this question demonstrated thorough knowledge and understanding of places at a variety of scales. Candidates within Level 3 presented a discussion of the changes to the economy. This was often based around tourism. Level 3 comments used their knowledge and understanding of the ways in which earthquake activity could have a role in driving economic change. This included reference to earthquake activity such as ground shaking, ground displacement, liquefaction, landslides, tsunamis and flooding. Candidates showed how this activity had a clear role in driving economic change.

Many candidates commented on how immediately after an earthquake event, tourists are likely to be discouraged from visiting, although on longer timescales tourist numbers would increase due to museums and damaged buildings being a source of curiosity. Candidates often made comparisons at Level 3 to different places. This included comparisons in terms of economic development. Many candidates discussed damage from ground shaking and displacement causing TNCs to move away from the area, potentially leading to a spiral of decline/ negative multiplier effect due to a loss of local employment.

Candidates were required to discuss the role that earthquake activity could have in driving economic change in places. Candidates tended to discuss the negative impact that earthquake activity can have in driving economic change such as the negative multiplier effect. Candidates did not always make it clear what the economic change was. Some candidates made generic points for example 'it created unemployment'. More effective responses went on to develop such points, explaining how the unemployment was caused by earthquake activity.

Candidates within Level 1 often provided a discussion of the economic impacts of the earthquake activity rather than the role the earthquake activity played in driving economic change.

Section C overview

Two essay questions worth 20 marks are available for each topic in Section C, candidates are required to answer one. The 20 marks available are divided into, 10 marks for AO1 (Knowledge and Understanding) and 10 marks for AO2 (Analysis and Evaluation). AO1 marks are awarded for showing knowledge and understanding of content directly from the specification. This includes a case study focus within the question. The two essay questions from each topic have 10 marks allocated for AO2. Candidates need to apply their knowledge and understanding to come to a rational well evidenced conclusion based on their chosen geographical topic. Candidates may benefit from some support working on command words and phrases, such as 'To what extent …', 'Assess the success of …', or simply 'Discuss.'.

OCR support

Command words are discussed in a blog article along with command term definitions, which can be found in geography news.

Question 11*

Topic 2.1 Climate Change

11* Examine the view that carbon capture and storage is the most effective mitigation strategy for reducing risks of climate change. **[20]**

This question was well answered with candidates writing in depth about a range of mitigation strategies used to reduce climate change. Carbon capture and carbon storage was well understood by candidates. The COP26 submit, Kyoto Protocol and Paris Agreement featured regularly with many candidates able to discuss specific targets that had been implemented because of this strategy. Candidates also discussed a range of other individual strategies taken by cities, countries and nations to mitigate against the risks of climate change.

There was evidence of some excellent teaching and learning in the responses to this question. Candidates demonstrated a thorough and well-developed knowledge and understanding about the risks of climate change (AO1). The candidates tended to focus on the risk associated with a temperature change and extreme weather events. Many candidates were able to use place specific detail to illustrate their points and quote statistics. There were a small number of candidates who misinterpreted the question and ended up focusing solely on adaptation methods and not discussing the effectiveness for reducing risks of climate change.

The question required candidates to be analytical and evaluative (AO2) when considering if the carbon capture and storage method is the most significant influence. While several candidates were able to discuss alternative methods; the effectiveness of the mitigation strategy was lacking in depth at times and this should be an area of focus for future examination practice. When candidates evaluated the effectiveness of the schemes there was a discussion around the successes and failures of the different strategies. This included points such as cost, timescales, geographical boundaries, support by governments, as well as the success of specific projects for each strategy.

Most candidates answered this question well and displayed the comprehensive knowledge and understanding needed to reach Level 3. Candidates could improve their performance in AO2 by considering significance in relation to a particular factor. This could include temporal and spatial factors.

Question 12*

12* 'Rising sea levels offer the most significant evidence for global climate change since the late-nineteenth century.'
How far do you agree with this statement? **[20]**

There tended to be good understanding of the demands of this question. Many candidates demonstrated thorough knowledge and understanding of the range of evidence surrounding the global climate change debate. AO1 is the candidate's ability to demonstrate knowledge and understanding of the specification content, focusing on the evidence for global climate change since the late nineteenth century. The examination question requires candidates to deconstruct evidence and argue how far they agree with a statement. Candidates tended to show stronger knowledge and understanding (AO1) of the topic area compared to analysis and evaluation (AO2).

Level 3 candidates showed a good understanding of the evidence surrounding rising sea levels. This was often connected to a case study referring to the melting of ice and thermal expansion. Responses at Level 3 showed a thorough knowledge and understanding of climate change and the evidence for climate change. Level 3 candidates made judgements as to why sea levels offer the most significant evidence for global climate change since the late nineteenth century. This included reference to issues with measurements such as achieving a global consensus with data and also the accuracy of equipment such as tidal gauges.

Centres may find it helpful to consider the range of possible reasons as to why sea level is not the most significant piece of evidence, as outlined in the mark scheme.

Question 13*

Topic 2.2 Disease Dilemmas

13* Evaluate the success of strategies to mitigate against non-communicable diseases. **[20]**

This was the most popular option among the Disease Dilemmas essay questions. Candidates were secure in their knowledge of non-communicable diseases. Non-communicable diseases such as Lung Cancer, Cervical Cancer, Bowel Cancer and heart disease were a frequent focus for discussions. Candidates tended to focus on AC countries.

Many discussions are based around the recent efforts by the UK government to educate people on daily intake of calories, NHS screening programmes as well as treatment. Fewer candidates discussed strategies such as increased research into cause, effects and treatment of cancer or different diseases. Assessments of the strategies to combat cancers tend to focus on ACs such as the UK although there is much potential for investigating this among EDCs and LIDCs. The role of air pollution as a cause of lung cancers was cited by a good number of candidates with the example of Indian cities used to support their discussions. Probably one of the most successful approaches was to evaluate the success of mitigation strategies at different spatial and economic scales.

Candidates tended to struggle more with the idea of the how successful the strategies had been. Candidates often classed the strategies as a success with limited evidence of why the strategy can be seen as a success. Data on the prevalence of the disease could be used to consider how successful the strategy had been.

This essay requires candidates to consider different mitigation strategies and then reach a conclusion by making a judgement of the success, failure, or impact of the strategies. Where the word 'success' forms part of an examination question, candidates are required to analyse what the word 'successful' might mean or how judgements might be arrived at. Candidates rarely evaluated the success based on a particular measurement. Candidates who did evaluate the strategies against a particular measurement often looked at survival rates, cases of the disease and cost of the schemes. Evaluative comments considering how the level of development can impact the success of mitigation strategies were seen in a number of responses

Many responses were outstanding in their quality of knowledge and understanding. Depth of knowledge of the strategies success was critical in achieving the highest levels for AO1.

Question 14*

14* Evaluate the global impact of **one** pharmaceutical transnational corporation in disease eradication. **[20]**

This was the least popular essay question in the Disease Dilemma topic with very few candidates attempting this essay.

The candidates who did attempt this question focused on the role of GlaxoSmithKline in disease eradication. A few candidates spent a large amount of time focusing on the background history about the pharmaceutical corporation. This is not required when discussing the global impact transnational cooperation's have on disease eradication. Candidates showed a good awareness of the nature of the international operation of GlaxoSmithKline when dealing with disease eradication. Candidates tended to provide descriptive accounts of the work that GlaxoSmithKline carry out.

Candidates who achieved higher marks were able to provide a convincing evaluation of the pharmaceutical corporation's impact compared to other factors and strategies (AO2). This was often linked to the vaccines, research, development and clinical trials to significantly reduce malaria in children. Candidates commented on the requirement for pharmaceutical industries to work alongside other agencies such as WHO, PATH and other partners. Candidates showed a good awareness of recent changes made by the pharmaceutical corporation.

The key element within AO2 was being able to present a convincing evaluation of the global impact of the pharmaceutical corporation in dealing with disease eradication.

Question 19*

Topic 2.5 Hazardous Earth

19* To what extent have risks from tectonic hazards changed over time? **[20]**

This was the most popular question within the Hazardous Earth essays. AO1 marks are based on candidates showing their knowledge and understanding of the risks presented by tectonic hazards. Within an extended response it is expected that this will include a case study to provide geographical knowledge and understanding in a contextualised manner. Most candidates focused on earthquake hazards changing over time. The hazards discussed by candidates included reference to ground shaking, liquefaction, landslides and tsunamis. Candidates were generally very well prepared to discuss specific case studies where there had been significant risks from tectonic hazards. Case Studies were often comparative in terms of the development spectrum.

For AO2 candidates were required to evaluate the extent to which risks from tectonic hazards have changed over time. For Level 3 candidates needed to provide an evidence-based argument. Candidates achieving Level 1 gave broad evaluative comments within the introduction that generally agreed that the risks from tectonic hazards are reducing over time due to advancements in technology. The technology discussed often referred to capacity to cope in terms of building structures being made more earthquake proof, legislations / laws as well as improved education surrounding risks associated with tectonic hazards.

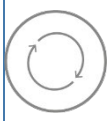
Several candidates based their arguments on the exposure of people to risks (AO1) and their ability to cope with tectonic hazards changes over time. This was often based around changes in population with a focus on the fact that there are more people at risk from tectonic hazards due to increased rates of urbanisation, changes in the frequency and impacts of tectonic hazards over time.

Level 3 responses demonstrated a comprehensive analysis and evaluation (AO2) showing how their discussions link back to the question – using "which means?" or "as a result?" as lines of discussion to question the relationship between risks and changes over time.

Level 2 candidates focused on the extent to which the risks from tectonic hazards have changed over time. They tended to cover 3-4 types of coping strategies within their response. The most successful responses went further, and thought about the nature of the hazards, and whether the risk had been changed. This often included the point that tectonics hazards pose the greatest risk to the poorest members of the world's population. This gave focus to the conclusions and evaluative comments at the end of the response.

There were some excellent examples of candidates discussing the view point that risks from tectonic hazards have not changed over time. This included discussions based on the fact the frequency and the magnitude of the tectonic hazard does tend to be the main factor that determines the extent of the hazards despite changes in ability to cope with the tectonic hazards.

Assessment for learning



Candidates may find it helpful to learn about the DRI – Disaster Risk Index within the context of risks changing over time and space. The index calculates the risk of becoming the victim of a disaster resulting from an extreme natural event, i.e., by multiplying the vulnerability index by the exposure index

OCR support

OCR provide several delivery guides which have been designed to represent a body of knowledge this is to support teaching a particular topic. This includes learner and teacher resources which explore the exposure of people to risks, and their ability to cope with tectonic hazard changes over time. This is available in the Delivery Guide for OCR AS/A Level Geography.

Question 20*

20* 'Volcanic eruptions at convergent (destructive) plate boundaries are more hazardous than volcanic eruptions elsewhere.'
How far do you agree with this statement? **[20]**

Very few candidates answered this question. Within AO1 candidates are expected to use their knowledge and understanding of volcanic eruptions at divergent plate boundaries to comment on how hazardous they area. Within AO2 candidates are being assessed for their ability to provide an analysis of how far volcanic eruptions at convergent plate boundaries are more hazardous than elsewhere.

Candidates generally showed a good level of knowledge and understanding of the volcanoes at convergent (destructive) plate boundaries. Occasionally the candidates tended to focus on describing the formation of volcanoes at different plate boundaries rather than discussing how hazardous they are. Candidates who achieved Level 2 and above were able to make comments about how the different plate boundaries can change how hazardous the eruption is.

Candidates identified that the main factors that determine how hazardous a volcano eruption is based on gas content and viscosity. Candidates discussed how this is different at different margins. Volcanoes at subduction zones often contain more gas and are therefore more explosive. Candidates showed a clear knowledge and understanding that the different locations and nature of volcanic eruptions at each margin impact how hazardous the volcanic eruptions are. Case Studies were generally well discussed. Several candidates spent a large amount of time discussing the volcanic eruption in Pompeii, while others used more recent volcanic eruptions such as Mount St Helens, Eyjafjallajökull and Lake Nyos.

OCR support

Case studies should be chosen from the 21st century (Specification p5)

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