GCE EXAMINERS' REPORTS

GCE
GEOGRAPHY
AS/Advanced

SUMMER 2022

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GCE GEOGRAPHY

General Certificate of Education

Summer 2022

Advanced Subsidiary/Advanced

UNIT 1: CHANGING LANDSCAPES

General Comments

- There needs to be more focus on the requirement of the question, particularly in the higher tariff questions. When using resources to examine or assess, evidence must be directed towards the focus of the question rather than a description of what is shown.
- Candidates should be encouraged to avoid using bullet points and list like answers.
- Where a comparison is required, candidates must not give separate descriptions of factors or characteristics.
- The use of case studies was inconsistent. If a higher tariff question relates to the impacts of an event or is linked to mitigation of risks, then a detailed example is important.
- Candidates showed good knowledge of constructive waves and characteristics of eruptions but there was widespread misunderstanding of mass movement processes.
- There was good use of resources throughout most of the paper, many candidates were methodical and thorough in their approach to analysing data and located information.

Comments on individual questions/sections

Section A: Changing Landscapes

Coastal Landscapes

Q.1 (a) (i) An accessible and generally well answered question with good reference to the resources and valid comparisons made. The strongest answers directly compared a variety of beach characteristics and gave supporting data or development points such as the beach widths or the presence of berms in the profile of fig 1b. Beach width, gradient and sediment size were most commonly compared. A few candidates were able to compare the planform (straight as opposed to bayhead beach). There was some good use of terminology, but this could be developed further.

Weaker answers drifted towards description of features beyond the beaches and some candidates offered an explanation rather than a comparison of characteristics. There were discussions of the types of waves that might have created the beaches for example. A small number of candidates gave two separate descriptions of the beaches with no direct comparison of the characteristics.

(ii) Candidates understood this question and were able to accurately identify reasons for the presence of sand dunes, mainly linked to aeolian processes or the supply of sand. The best answers included clear explanations of how a large intertidal range led to sand drying out and thus being easily transported by wind to the back of the beach. Answers referring to the role of vegetation in trapping and stabilising sand were also successful.

In weaker answers candidates gave reasons that were too simplistic e.g., there is sand on the beach. To gain credit there needed to be a reference to a plentiful supply of sand due to the size of the beach or sand being dry and easily transported. Many candidates achieved 1 out of 3 marks for identifying a reason but not giving clear development points. Candidates could be reminded to make sure they fully develop their explanations for maximum marks.

(b) Few answers achieved the highest marks due to a lack of focus on beach profiles. There was strong knowledge and understanding of the characteristics of constructive waves and most candidates were able to explain that deposition occurs due to the stronger swash. A significant number did not apply this to the development of beach profiles and there often appeared to be a misunderstanding of the term. Profile was confused with planform and many answers drifted into explanations of longshore drift and the formation of spits. AO1 marks were often therefore limited to band 2. Assessment of the importance of constructive waves was variable. A small number of candidates did not address this part of the question at all and achieved no marks for AO2. Conversely, those candidates who had interpreted the question well and offered some assessment of the importance of constructive waves often gained the 3 marks for AO2. Sometimes the AO2 mark was higher than AO1. The strongest assessments were able to consider the temporal changes in profile due to the presence of destructive waves in winter. Some also argued that human influences could alter beach profiles.

Q.2 **(a)** **(i)** The maps were accessible to all candidates. This question was generally answered well.

Most candidates understood the idea of pattern and were able to comment on the highest rates of crustal movement and where sea level was rising. Strong answers described the decrease in the rate of crustal movement with distance from the Gulf of Bothnia and mentioned the concentric pattern. They used the scale to give the approximate size of the area that is rising most quickly and gave named places and regions to illustrate the location of the different rates of crustal movement.

Weaker responses used the terms left and right rather than compass directions or gave generalised statements about countries e.g., Sweden is 6-9mm per year. In fact, there are four categories across Sweden. Isolated statements or lists rather than a description of pattern limited the mark awarded to 2, e.g., Norway is 3-6, Finland is 6-9. Generalisations such as “the sea has the lowest crustal movement” cannot be credited because in fact the Gulf of Bothnia has the highest rate of movement.

(ii) This question was not answered well, and a small number of candidates did not attempt it. The best responses identified isostatic rebound as the reason for the variation and were able to develop the answer by discussing variation in the thickness of ice and depression of the crust across Scandinavia. A significant number of candidates identified tectonic activity as the reason and only a very small number were given credit as they referred to a plume of magma pushing up the crust. This was accepted as it could explain the pattern shown. Very few achieved 3 marks overall. Weaker answers were able to identify isostatic rebound but did not explain the variation seen on the map. Many answers discussed tectonic uplift due to the possible presence of a plate boundary, but this could not produce the pattern shown and so could not be credited.

(b) The majority of candidates found this question very challenging and were unable to identify a mass movement process. A significant number of candidates did not attempt this question. Those candidates that did understand the term were able to discuss rockfall or slumping and the strongest answers included an explanation of how landforms such as wave cut platforms develop due to mass movement. Many candidates also explained that the material from rock falls may be transported to build up beaches and spits and this was acceptable. A small number of candidates gave very perceptive assessments of the role of mass movement in the development of landforms for AO2. The influence of geology and other factors was explained very well. There were many responses that achieved zero marks. Most incorrect answers explained longshore drift and the formation of spits. Some candidates gave long explanations of types of erosion and how caves, arches and stacks form. While the words “the arch collapses” were within the answer it was incidental and not emphasised as mass movement so did not gain credit.

Q.3 **(a)** **(i)** A well answered question overall. Clear comparisons were made, most candidates needed to give development points to access full marks e.g., the heights of the cirques. It was difficult to find 5 different characteristics to compare. The most common comparisons were the heights of the cirques, the presence or absence of a lake and the overall size of the cirques. Many were able to comment on how rugged or smooth the cirques were and the presence of vegetation or scree slopes. Weaker responses gave two separate descriptions of the cirques which cannot be given credit.

(ii) Better responses were given to this question compared to 1(a)(ii) though few achieved 3 marks. Most answers identified a bigger glacier and stronger answers went on to explain that this leads to more erosive power and more rapid plucking and abrasion. A small number of answers discussed variations in geology or northerly aspect. Weaker responses failed to focus on only one reason or gave more comparison of the cirques with no reason for the differences offered. Others identified a reason but gave no explanation of the variation shown. Many candidates suggested that one cirque had a glacier present for longer than the other. This was not accepted as they are both located in Snowdonia and would therefore have very similar climates over time.

(b) An accessible question and most candidates demonstrated good knowledge and understanding of glacial erosion processes. There was great variety in the quality of explanation for AO1, the strongest answers explained clearly why thicker ice leads to more rapid erosion. There was an accurate explanation of the impact on rates of abrasion and plucking and on pressure melting at the base of the glacier which increases velocity. Some of the best answers also assessed the relative importance of geology, gaining marks for AO2.

Very few answers included thermal regimes or jointing of bedrock. Weaker responses included inaccuracies; a significant number of candidates discussed the shrinking of a glacier itself so had apparently misunderstood the meaning of glacial erosion. Others thought that thinner and smaller glaciers would cause more rapid erosion. Few responses considered the relative importance of ice thickness and therefore marks for AO2 were limited, even for those that performed very well for AO1.

Q.4 **(a)** **(i)** Candidates understood the question though the resource was challenging for some. The strongest answers clearly described the variation in flow rates across the glacier using compass directions and recognising the anomaly in the NE. Supporting data was also given. A small number of candidates identified that the sides of the glacier moved more slowly and used the scale to describe clearly at what distance down-slope the flow rates changed. Weaker answers did not use compass directions and referred to left and right. Some candidates thought the glacier was moving towards the NW; this did not impact on the marks achieved if they described the pattern of velocity correctly using directions. Many answers mistook the flow lines for contour lines and described links between flow and height which was incorrect. Some answers were too simplistic and stated that the glacier moves faster in the North. This is not accurate and could not be credited.

(ii) A challenging question though done marginally better than 2(a)(ii). Most answers focused on steepness of slope and the force of gravity. The strongest answers were able to clearly explain why a glacier moves more quickly down a steeper gradient. Weaker answers contained inaccuracies. Candidates commonly stated that temperatures increase downhill causing the glacier to move faster but that is contrary to the pattern shown. Others stated that ice is thinner downslope and will move faster, this is both inaccurate and contrary to the pattern shown.

(b) Similar to question 2(b) the majority of candidates found this question very challenging and were unable to identify a mass movement process. A significant number did not attempt to answer. Strong answers used knowledge and understanding of rockfalls, solifluction and soil creep, making the link to scree slopes or solifluction lobes. A few candidates that had strong answers for AO1 were also able to examine the role of mass movement in the creation of those landforms, discussing the relative influence of weathering for example. In weaker answers there was no examination of the role of mass movement in the creation of landforms for AO2. A high proportion of answers achieved zero marks.

There was some confusion between periglacial and fluvioglacial landforms and lots of reference to pingos and ice wedges with no reference to mass movement.

Q.5 **(a)** **(i)** A significant number of candidates got 3 marks out of 5 for this question as they could identify the most and least significant causes of death and lift some supporting data. To achieve full marks, they needed to further analyse the relative significance of the different hazards, for example calculating the range or percentages. The best answers included this type of data. Hazards were also grouped e.g., the first four account for 90% of deaths.

(ii) An accessible question. Resources were used effectively to support the examination of the physical factors that influence the number of deaths. The best responses made links between the different factors shown and produced a sophisticated examination with clear focus on the number of deaths.

They took a methodical approach, examining the three factors in relation to pyroclastic flows, lahars and gas in turn. Overall, fewer candidates commented on VEI compared to distance from eruption. Some did not appear to understand the term VEI, which was explained simply in the title of Fig 5b. Many candidates chose to discuss physical factors which were not shown on the resources. Most commonly this included topography or location of the volcano e.g., coastal or inland. These ideas were credited but it is harder to use supporting data which often limited marks. Weaker responses tended to look at the graphs separately or only picked out one factor such as distance from eruption. At the lower end candidates described the resources with little or no examination. Many answers drifted into explanations of the hazards and sometimes the impacts of the hazards. A small number discussed human factors in part or, more rarely, all the answer.

(b) This question was answered very well with many answers including more than the maximum of 8 statements that were creditworthy. Many candidates could clearly outline the characteristics of both types of eruption and used terminology accurately and effectively. They focussed particularly on lava viscosity, type of plate boundary origin and type of lava. Some used bullet point lists but the nature of the mark scheme meant that this did not have a detrimental impact on marks awarded. Small numbers of candidates achieved few marks as they outlined the characteristics of the different volcanoes rather than the eruption. There were a very few who did not know the differences in enough depth. The most common error was to get high and low viscosity the wrong way around.

Q.6 **(a)** **(i/ii)** Most candidates answered these correctly. Candidates should be reminded to give the unit in their answer (%) as the answer is not credited without it. A small number of candidates were unable to work out a mean.

(b) An accessible question where nearly all candidates correctly identified the greatest threat to infrastructure. Some very strong answers included calculations of range and mean and accurately identified anomalies. The best answers considered the named countries as well as the types of infrastructure. Marks were often quite limited, however. Weaker answers failed to make full use of the information given or simply lifted data off the resource. There was limited or no examination of differences between the countries shown.

A number of candidates got the percentage figures wrong by simply adding them up e.g., 115% of cities in all 3 countries exposed to lahars, which could not be given credit as it is 115 out of 300.

(c) **(i)** Most candidates answered this correctly, marks were lost if the unit (%) was missing and some candidates missed the instruction to answer to one decimal place.

(ii) Overall a well answered question. Candidates methodically compared the number of high, medium and low risk volcanoes that were not monitored or monitored monthly. Accuracy of phrasing in the answer could sometimes limit marks e.g., 'low high risk' and 'high low risk'. Not all backed up their points with data and some looked at yearly and continuously monitored volcanoes despite them not being required in the answer. Some candidates made separate statements with no comparison which cannot be credited.

(d) Students took a wide range of approaches to this question. Strong answers used the resources as a stimulus to show their knowledge of human reasons that could explain variations in impacts. Most discussed population size or density, level of wealth/development and monitoring, some considered the potential for evacuation. They often used their own case studies in addition, to back up their examination. There were some very perceptive answers which considered resilience and ability to respond to eruptions.
Some candidates could describe the resources but did not focus on variations in severity which limited their marks. Weaker answers did not use the resources at all and relied on their own knowledge or case studies, mostly Japan and New Zealand. This meant that there was little specific data to illustrate their ideas. Some drifted into discussion of physical factors.

Q.7 **(a)** This question was not well answered due to a lack of focus on the requirements of the question. A significant number of candidates did not attempt the question. There were a few excellent answers which fully explained the causes of ground shaking and the characteristics of P and S waves which were then clearly linked to the hazards produced. There was also accurate explanation of how liquefaction occurs and why landslides may be triggered. However, many candidates were able to describe hazards produced by earthquakes but did not explain the processes associated with them. There was good knowledge of case study material, but this was often incorrectly applied to highlight the impacts of hazards rather than process. Many candidates discussed tsunami and used Japan and SE Asia as case studies. Some were able to accurately explain the processes triggering tsunami, but the focus of many answers was on the impacts and therefore marks were limited. There were a few answers that focussed on volcanic hazards e.g., lahars which did not achieve any marks.

(b) An accessible question which was generally answered well. The most effective answers used named examples to explain the long-term responses to earthquake hazards and how successful they were. It is difficult to comment on levels of success without a reference to place. The case study of Japan was commonly used in relation to earthquake proof buildings and earthquake drills. Many candidates demonstrated a clear understanding of the requirements for the AO2 marks and thoroughly examined the levels of success of the responses. This makes a big difference to the overall mark achieved. Less successful answers referred to short-term recovery rather than long term response, typically discussing aid to Haiti. This often led to zero marks being awarded. Some answers gave only a list of responses with no development and simplistic comments about success. On occasion a lengthy examination of levels of success for AO2 came at the expense of explanation of responses, there were only brief and simple statements for AO1.

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UNIT 2: CHANGING PLACES

General Comments

The quality of answers in this first post COVID exam was disappointing for the most part. This is reflected in the significant decrease seen in the mean mark in relation to 2019. On the positive side candidates generally found the resources accessible and were able to respond to the command word of compare that was used in question 1(a)(i) and 2(a)(i). Despite the candidates' knowledge being sound for 1(b) and 2(b) they did not really respond confidently to the AO2 command words in these questions or in 3(b). It is interesting to note that the mean score was higher for question 5 than 4 – despite both often being based on the same study. This has clearly been a challenging year for these candidates, and most will not have prepared for and sat external exams before. The lack of authentic fieldwork experiences is likely to have impacted the quality of responses for questions 3-5. Centres should focus on fieldwork provision as they prepare for the next series and develop the candidates' ability to respond to the challenge of fully addressing the AO2 demands of the higher-tariff questions on this paper.

Comments on individual questions/sections

Q.1 (a) (i) Most candidates managed to identify differences between the two differing representations and used the resource effectively. A minority did not compare, thus clearly impacting their chances of securing the higher marks. The answers to 1 (a)(ii) were not as good. Some candidates did not organise their answer effectively in a way that made it clear what factor responsible for a differing attachment they were discussing. Popular answers included length of residency and experiences they may have had at Aberystwyth. Perhaps this lack of clarity of writing was a result of lack of practice under exam questions. Many candidates gained good marks in 1 (b). This was the best answered of the higher tariff questions on the paper. Where candidates did not score well this was due to a lack of focus on the social impacts of gentrification. Some responses drifted into an answer that was mainly focused on economic impacts. Another weakness was a failure to respond to the statement with the answer mainly listing positive and negative impacts.

Q.2 Again 2(a)(i) was well answered. Statistically the best answered on the paper. Most candidates did compare the LSOA with Wales making good use of the statistics. Where candidates did not gain the full 5 marks in (i) was because they did not recognise the overall pattern. 2(a)(ii) however was not well answered with many candidates not able to recognise a limitation of the data. Successful answers included the date of the data and the fact that the location of the LSAO was not known. Responses to 2(b) showed that candidates understood what quaternary clusters were and were able to offer reasons for their formation. However, the examination element was not sufficiently developed.

The reason that was best developed was the formation of clusters close to universities. The lack of development of the AO2 evaluative element was a constant theme throughout this paper.

Q.3 In (a)(i) most candidates managed to identify two hazards – although a disappointingly large minority did not understand the word 'risk' and interpreted the question as a risk to gaining credible results. Most candidates that identified suitable risks id gain the mark in (ii) by identifying ways of limiting this risk with suitable clothing being a popular response. In question 3(a)(iii) only a small minority used the term 'cross-sectional line' however many gained some credit by suggesting a line graph as a suitable method. Unfortunately question 3(b) was poorly answered. Whilst most candidates managed to identify a primary and secondary source, a minority of candidates did not know the difference between primary and secondary. Another common error was to describe a method very similar to the method in the question. A popular secondary method was internet research. However, there was not enough depth such as maned websites. Much of the evaluation came in the way of justification.

Q.4 This question was not well answered. Many candidates did not write well about their findings. With these two questions, it is important not to forget about the AO1 element. If candidates did not write in detail about their findings, the ways of developing their study further were rather generic with answers such as 'we could visit another location' or 'we could visit at a different time of the year'. Whilst such answers did gain some credit, they did not score highly for AO2. Better answers took time to inform the examiner of their findings, making good use of statistics. A successful approach was to go through their study one sub-question or hypothesis at a time noting their findings and suggesting ways of developing their study. Whilst a significant percentage of candidates did rely on generic ideas to develop their study it was pleasing to see some interesting ideas for further study in the best responses.

Q.5 Most candidates managed to identify two data collection techniques. Better responses chose techniques that allowed them to describe in detail how these methods were carried out. These answers were then better placed to effectively evaluate their effectiveness. Weaker responses tended to simply name their data collection techniques e.g., 'we measured the size of rocks' and then offered some justification for the decisions made. Although not totally incorrect, answers that did focus on justification overall failed to score highly for the AO2 element. It is important for candidates to understand the difference between justification and evaluation. A surprisingly large number of candidates looked at different sampling methods in this answer. Whilst sampling is part of data collection it is not a data collection method.

Summary of key points

- Centres should encourage pupils to write in a way that means they are clear when making their points.
- For extended questions pupils should re-read the question whilst answering – this can help them keep focused on the key words in the question.
- Justify and evaluate are two different command words – however candidates often struggle to differentiate between them.
- Candidates should take increased ownership of their fieldwork experiences so that they have a better understanding of the work they have carried out.

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UNIT 3: GLOBAL SYSTEMS AND GLOBAL GOVERNANCE

General Comments

- The paper was accessible across the ability range with limited evidence of questions being omitted; however, many candidates found some of the longer questions challenging. The paper differentiated well, and all questions and their constituent parts gave the required characteristic of providing the opportunity to the most able to demonstrate some excellent knowledge and understanding of the specification, whilst also being accessible to those of lower ability.

- Time management did not appear to be an issue for most candidates, with some producing lengthy, detailed answers to all questions; this resulted in some candidates writing in far too much detail for the lower-tariff questions.

- Often, there was strong evidence of excellent guided learning having taken place during the preceding two years in relation to understanding of the assessment objectives. Most candidates were well-versed in the requirement for evaluative extended writing throughout this paper. Many strategically integrated specialised concepts - including scale, interdependence, and resilience - in ways which enhanced their evaluative writing style.

- Essays were typically well-structured, and featured appropriately sized paragraphs linked by connective words such as however, furthermore, moreover, etc. Most candidates demonstrated excellent discipline by leaving sufficient time to provide a conclusion for each of their three essays. Given the requirement that they must arrive at a judgement (under assessment objective 2(c) this is, of course, vitally important.

- The problem of poor handwriting persists for a significant number of candidates. It is easy to lose the thread of an argument or account when focusing on deciphering what has been written. Centres are urged to encourage those with poor handwriting to explore opportunities to have the use of a word processor or a scribe. Spelling, punctuation and grammar are still proving to be an issue for a number of candidates.

- In some cases, candidates still need to be reminded to respond directly to the questions' command word. Furthermore, in several cases, some candidates did not take care to read the wording of the questions, leading to irrelevant responses.

Comments on individual questions/sections

Section A: Global Systems

Most candidates were successful at **Q.1(a)** by logically comparing the two diagrams; in a small minority of cases, candidates did not adhere to the command word to compare, and simply describe each diagram without adhering to the requirement to compare.
Only a small minority of candidates were successful at **Q**.**2(b)** with many appearing to confuse 'temperate grasslands' with 'savanna grasslands' and perhaps leaning on GCSE knowledge as there is no requirement within the specification to study savanna grasslands but within 3.1.7, the temperate grasslands are clearly referenced.

Q.3 proved a fairly straightforward question for many candidates who attempted it (as an alternative to question 4); however, there were a significant number who were unable to show understanding of the concept of 'river regime' per se, only able to access the question via the concept of discharge. Best candidates made excellent use of case studies such as the Colorado or the Severn and were eloquent in their examination of contrasting factors.

Furthermore, **Q.4** proved a straightforward question for many candidates who attempted it (as an alternative to question 3); however, a small minority of candidates did not appear to have read to the end of the question, thus omitting to link the recent changes in atmospheric carbon to the water cycle.

Section B: Global Governance

There were some very good answers to **Q5(a)** and **5(b)**, with **5(a)** requiring candidates to apply knowledge of remittances to global inequality; for most, this did not represent too great a challenge and were well-versed in the connection between these two concepts as outlined in 3.2.3.

Q.6 **(a)** **(ii)** Was problematic for a significant majority of candidates who either produced an incorrect answer or did not attempt this question. Candidates should be reminded that there are skills marks (AO3) in each of the written components and therefore they should be prepared to expect these and that they would be wise to take a calculator into the examination room as it was clear that many candidates attempted this question without this piece of vital equipment.

(b) Proved similarly problematic to many who were unfamiliar with local strategies to manage marine waste. The best answers referenced specific strategies; weakest answers relied on suggestions such as national strategies to reduce plastic bags. The need to be familiar with (and sometimes evaluate) strategies is a strong requirement of this specification.

Q.7 Produced some excellent answers assessing a range of consequences of international economic migration on source countries, including valuable case study material relating to Poland, India and Mexico. It was very disappointing that a number of candidates wrote about the impact on host countries.

The alternative question in this section asked candidates to examine efforts to manage sea cables and global flows of shipping. This question produced some excellent answers with candidates knowledgeable of a range of efforts relating to both elements of the question and able to routinely evaluate their success (or failure).

Both questions 7 and 8 demonstrate the maturity of the specification and how Centres are successfully drilling their candidates in the need to balance knowledge and understanding (AO1) with examination (AO2.1c).

Section C: 21st Century Challenges

Answers to **Q.9 and 10** similarly illustrate centres' successful preparation of their candidates to produce high scoring pieces of writing. Most candidates routinely used the resources to support integration of applied knowledge and understanding from across the specification, producing some excellent answers which the examining team found interesting to read. In a small minority of cases, candidates did not refer to any of the resources, thus forfeiting the 6 AO3 marks, meanwhile, a similar minority based their answers exclusively on the three resources, simply describing these in relation to the wording of the question, without using any knowledge and understanding from across the specification, thus forfeiting the AO1 marks available.

Summary of key points

- Centres are to be congratulated and thanked for the supportive preparation of their candidates for this examination series, particularly as these candidates have sat neither GCSEs or AS examinations.

- From reviewing scripts across a range of centres, it is clear that candidates are carefully strategising their approach to this paper with a significant number of candidates answering Part C first, and in many cases followed by the questions requiring extended answers (3/4 and 7/8). Total marks for such approaches did not appear significantly different to those who approached questions in the order they appear on the paper, however it is noted, that these candidates completed all questions across the paper, which was not the case for all candidates.

- Finally, it is worth sharing that the very best candidates were able to successfully reference their theoretical knowledge and understanding against detailed real-world exemplification. Such exemplification can score AO1 marks as well as AO2 marks interpretation, analysis, and evaluation and thus candidates should be encouraged to routinely illustrate key points in their writing with real-world exemplification.

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UNIT 4: CONTEMPORARY THEMES IN GEOGRAPHY

General Comments

The Unit 4 paper was significantly modified this year, due to the challenges created by the ongoing Covid-19 pandemic. As a result, the comments and data provided during this report should be viewed in context. Teachers and learners have been dealing with very challenging circumstances since March 2020 and should be commended for their considerable efforts. However, this report contains matters which need to be addressed and it is hoped that they will help to inform teaching and learning approaches for the 2022 – 2023 academic year.

Comments on individual questions/sections

Theme 1: Tectonic Hazards

Q.1 This was the most popular option in Theme 1, with 73.4% of candidates choosing to address this question. The average mark was only 0.3 marks below the equivalent Question 1, which was set in 2019 (11.3 in comparison to 11.6). The best responses were able to discuss the impacts of volcanic activity at a variety of scales, using effective case study support. Some of the best responses utilised the example of the 2010 eruption of Iceland's Eyjafjallajökull volcano. These answers included reference to the varying impacts of volcanic activity at local, regional, national, and global scales. Good evidence was also used to supplement and support the points raised throughout. For instance, reference to the demographic, economic, environmental, and social impacts of volcanic activity. Specialised concepts were also introduced and discussed. Globalisation, risk, and sustainability were commonly cited. However, in weaker responses, there was an issue regarding the use of poorly executed case studies. For example, some candidates referred to the eruption of Krakatoa and Vesuvius, in very generic terms. This hindered candidates in their ability to access the 13 marks available for the AO2 component. It is perhaps worthwhile reminding centres what is stated in the specification: "*Examples and case studies selected for study by centres to exemplify the content must be contemporary, that is within the last two decades, unless a historical context is useful for a time dimension, which also informs the present context."*

Q.2 This was the least popular option in Theme 1, with only 26.5% of candidates addressing this question. Performance was on a par with Question 1, as the average mark attained was 11.4. Overall, candidates had a superficial knowledge of liquefaction and tended to shy away from discussing it in depth, instead preferring to discuss hazards such as ground shaking and tsunamis. The best responses referred to the 2010 Canterbury earthquake effectively and were able to compare the impacts of this event to case studies such as the 2004 Indian Ocean Tsunami, the 2010 Haiti earthquake and the 2011 Great Tohoku Earthquake. Reference was consistently made to specialised concepts such as place, risk, scale, and vulnerability.

Weaker responses were characterised by limited knowledge and understanding of liquefaction, ground shaking and landslides. For instance, some candidates referred to *"buildings collapsing"* as a *"primary hazard"*. A minority of candidates also drifted from the question set and tried to discuss volcanic hazards too.

Theme 2: Ecosystems

Q.3 This was the highest scoring essay in Theme 2, with an average mark of 11.8. The best answers examined the different functions of ecosystems (provision of goods, ecosystem services, regulating services and cultural services) and debated whether the provision of goods was the most important function of ecosystems. These answers benefited from detailed case study support and sustained analysis. Effective case studies revolved around examples from a variety of terrestrial and marine ecosystems, such as the Amazon Rainforest and the Great Barrier Reef. In addition, better responses were able to introduce and discuss concepts such as mitigation, resilience, sustainability, and thresholds throughout. Weaker responses were very descriptive and tended to focus on the provision of goods only, to the detriment of the other functions provided. This restricted the amount of AO2 marks that could be awarded.

Q.4 This was the least popular option in Theme 2, with 129/515 candidates attempting this question. Sadly, in many cases, candidates failed to address the *local scale* component effectively. Many candidates chose to discuss the Arctic Tundra or the Tropical Rainforest in very broad terms. There was a lack of focus on *ecosystem succession* and consequently, this type of response was self-penalising. The average mark was 10.7. Better responses examined the influence of physical factors on ecosystem succession at a local scale. Such answers often examined succession in local psammoseres and were able to critically assess the relative role of physical and human factors on the development of their chosen ecosystem. Examples used successfully to demonstrate these influences included the Sefton Coast, Crymlyn Burrows, and Freshwater West.

Q.5 40% of those addressing the Ecosystems theme selected this option. The average mark was 11.5, marginally below the 11.8 recorded for Question 3. Weaker responses tended to focus solely on the impacts of climate change on the Arctic tundra, without acknowledging the fact that a variety of abiotic and biotic factors are responsible for the unique characteristics of this biome. Such answers tended to drift significantly from the question set, which was self-penalising. Better responses stressed the fact that the Arctic tundra biome has a very distinctive climate, which in turn has influenced the soils, plants, and animals of the region. Such answers provided information on average monthly temperatures/precipitation levels, the nature of the permafrost and examples of plants (such as cotton grass, dwarf willow) and animals (Arctic fox, Caribou). Discussions surrounding adaptation, causality, interdependence, and place were at the heart of better responses.

Theme 3: Economic Growth and Challenge: India or China or Development in Sub-Saharan Africa

It should be noted at this point that only 27 candidates out of an entry of 1355 chose Economic Growth and Challenge in India.

India

Q.6 This question was only answered by 8 candidates, and it attained the lowest average mark on the Unit 4 paper of 9. Overall, candidates displayed secure, straightforward knowledge and a reasonable understanding of the factors affecting demographic change in India. However, support was lacking, and consequently, answers felt rather descriptive. In addition, a narrow range of factors were considered, which limited the number of marks that could be awarded for the AO2 component. AO2 is worth 50% of the marks available for the Section B essays and candidates needed to engage in a more robust and sophisticated discussion, to achieve marks in the higher AO2 bands. Moreover, specialised concepts could have been introduced and discussed.

Q.7 Only 6 candidates addressed this question, with an average mark of 10.7 In a similar manner to Question 6, secure and straightforward knowledge was advanced here, with examples that were partially evident. To access Band 3 for AO1 (7 – 9 marks), more wide-ranging and thorough knowledge needed to be displayed. Once again, the AO2 component was hampered by a lack of breadth. Candidates had the opportunity to introduce and evaluate the role of government, in comparison to the relative importance of physical, demographic, social and technological factors on the location and development of economic activity in India.

Q.8 This was the first time this question had been set and it delivered a range of responses. In total, 13 candidates addressed this question, attaining an average mark of 11.6. Weaker responses tended to focus on India's demography and military might. Such candidates agreed with the assertion fully, without offering evidence or any counterarguments. However, better responses introduced the concepts of cultural, economic, political, and social globalisation. Several candidates referred to India's role as an outsourcing capital, the Indian diaspora and "Bollywood". In addition, better candidates provided a counterargument and stated that India was not a global power, because of the major inequalities that exist within the country and ongoing environmental concerns. Such answers introduced the concepts of globalisation, interdependency, risk, scale, sustainability, and vulnerability

China

Q.9 This question was the most popular option for the China theme, and it recorded the highest average mark on the paper of 13.1/22. Better responses were able to examine the relative importance of a variety of factors, which have influenced demographic change in China. These discussions highlighted the distribution of China's population and discussed the reasons for these patterns. Cultural, economic, political, and social reasons were advanced. For instance, the hukou system and the role of the One Child Policy. Such responses contained plenty of supporting evidence, which was examined on a consistent basis. There was also reference to key concepts such as causality, inequality, interdependence, place, scale, and the temporal scale. Weaker responses were rather bland and narrow, tending to focus solely on the One Child Policy. There was also a poor grasp of the meaning of the term *"demographic change"* for some candidates, with erroneous arguments and material presented.

Q.10 The average mark attained on question 10 was 12.2. Better responses were able to critically evaluate the role of government in the location and development of economic activity in China. Such discussions referred to factors such as the role of SOEs and SEZ's. These answers benefitted from appropriate exemplification and factual support. In addition, following a discussion on the role and importance of the government, better responses examined whether physical, demographic, social and technological factors played a more influential role. This enabled such candidates to introduce specialised concepts such as causality, inequality, interdependence, place, and scale into their deliberations. Weaker responses tended to focus on the role of government only, without introducing a wider range of variables for discussion. Some weaker responses also lost focus and engaged in discussions regarding how the government is trying to deal with the impacts of economic development in China.

Q.11 This was the first time this question had been set and it delivered a range of responses. The average mark attained was 12.2, which is marginally better than the same question set for India. Weaker responses tended to focus on China's demography and military might. Such candidates agreed with the assertion fully, without offering evidence or any counterarguments. However, better responses introduced the concepts of cultural, economic, political, and social globalisation. Several candidates referred to China's involvement in Africa, in countries such as Angola and Zambia. Others chose to highlight the fact that China is in the WTO and a major global player. In addition, better candidates provided a counterargument and stated that China was not a global power, because of the demographic, environmental and political challenges it faces. Such answers introduced the concepts of globalisation, interdependency, risk, scale, sustainability, and vulnerability.

Development in Sub-Saharan Africa

Q.12 Question 12 was the most popular and highest scoring option for the Development in Sub-Saharan Africa theme (average mark of 12.9). The best candidates had good knowledge and understanding of the relative influence of social factors on the development of selected countries. For instance, they were able to critically analyse the role of social factors in comparison to the influence of climatic, cultural, economic, and political factors. Good examples included discussions on the impact of education in Zambia and the influence of debt in Chad. A wide range of specialised concepts were introduced and explored in such responses. Causality, inequality, place resilience, and scale were widely referenced. In addition, such candidates were able to discuss how the situation had changed over time, which provided more opportunities to secure A02 marks. Weaker responses tended to confuse and muddle factors. For instance, some candidates referred to colonialism as a social factor, as opposed to a political factor. Such answers also tended to refer to *"Africa",* without a specific reference to named examples and the underpinning specialised concepts.

Q.13 This was the lowest scoring option in Theme 4. However, some good answers were seen. Better responses examined the environmental impacts of development in Chad, Kenya, and Zambia. Lake Naivasha (Kenya) was a popular example. Such answers also introduced and discussed the specialised concepts of globalisation, inequality, resilience, risk, and sustainability and were ably supported by case study material. Weaker responses discussed environmental impacts in a very generic fashion, often referring to *"Africa"* in their discussions, without naming specific countries.

Q.14 This was the least popular option in this section of the paper (25% of those selecting this theme attempted this question). It was only 0.6 marks below the highest average mark recorded for Africa on Question 12. Good responses were generally characterised by detailed knowledge and understanding and sophisticated analysis. Such responses were able to show an understanding of how solutions can address a range of issues e.g., Soil and water conservation techniques such as the use of stone bunds and magic stones, The Great Green Wall, and the use of fuel-efficient cooking stoves. These discussions included an analysis of mitigation, place, risk, scale, and sustainability. Weaker responses lacked focus and tended to drift from the question set. For instance, some candidates wrote about the causes of desertification, and some chose to examine the impacts of desertification. If candidates did attempt to discuss the strategies implemented, they failed to focus on a specific location and talked in generic terms and stated that the strategy was *"effective"* or *"ineffective",* without a robust discussion or the inclusion of supplementary evidence and specialised concepts.

Energy Challenges and Dilemmas

Q.15 This was the least popular question in Energy Challenges and Dilemmas. Only 175 attempted Question 15, in comparison to 217 for Question 16. Generally, there was a poor grasp of the term "geological factors." Most candidates interpreted geological as *"geographical",* and as such, all factors discussed were referred to as being geological/geographical, which nullified their discussion to a degree. This is disappointing, as this question has been set previously. The best responses clearly understood the importance of geology and the conditions needed to produce certain types of energy e.g., fossil fuels and geothermal power. Most responses glossed over geology and discussed the role of climate and relief factors instead. Wind, tidal and HEP were common examples given, and in a handful of scripts, nuclear power. Better responses discussed a range of conceptual themes such as place, scale, and sustainability. Weaker responses were characterised by a poor understanding of geological factors and a superficial discussion of the importance of alternative factors.

Q.16 This was the first time this question had been set and it produced some good answers. Better responses examined a range of variables, which serve to influence a country's energy mix. Many candidates introduced economic, geological, political, and technological factors into their discussions. Several candidates referred to the ongoing war between Russia and Ukraine, highlighting the impact this conflict has had on energy supplies. Micro-hydro projects in Nepal were also popular, as was geothermal power in Iceland and nuclear power in France. This enabled candidates to introduce concepts such as causality, interdependence, place, scale, and sustainability. Weaker responses tended to stick closely to the theme of development, stating in broad terms that "*wealthier nations"* can afford a range of energy sources, whereas *"poorer nations"* cannot. Basic responses such as this lacked the depth, detail and refinement required to access Band 3 for AO1 and AO2.

Q.17 This was the highest scoring question for the Energy Challenges and Dilemmas theme, attaining an average of 12.1. Better responses were able to identify a range of alternative energy sources, with many candidates referring to biomass, geothermal, nuclear, solar and wind.

Good answers consistently evaluated the sustainability of alternative sources throughout, by discussing the social, economic, and environmental implications of their chosen energy sources. Consideration was also given to the short and long-term impacts, thereby enabling candidates to introduce a range of specialised concepts. Common case studies included the Nesjavellir facility in Iceland, Chernobyl, Fukushima, London Array, Walney and the Rance tidal power station. Weaker responses were characterised by generic knowledge and understanding of alternative energy sources and bland, unsophisticated assertions such as *"this makes it sustainable"* or *"this shows it is unsustainable".*

Weather and Climate

Q.18 This was the lowest scoring question in the Weather and Climate theme, as it recorded an average mark of 10.6. The focus was supposed to be on how *air masses* affect the weather in Wales and the United Kingdom. However, many candidates drifted from Focus 4.5.3 (Climate and weather of Wales and the UK) into Focus 4.5.2 (World's major climate types) and decided to examine seasonal variations in the position of the ITCZ instead. Evidently, this had an impact on the number of marks awarded for AO1, AO2 and AO3. Better responses examined the sources and characteristics of air masses and their influence on the weather in Wales and the United Kingdom. Such answers included case study examples, which highlighted variations in precipitation and temperature spatially and temporally. In addition, better responses also acknowledged the role of relief and the jet stream.

Q.19 Sadly, several answers failed to address the question set and discussed strategies to examine high-pressure hazards instead. In terms of the answers that did address the low-pressure element, the responses lacked breadth and depth in terms of knowledge and understanding. Some answers referred fleetingly to Hurricane Katrina and Hurricane Sandy but there was no supporting detail. Brief reference was often made to the role of the NOAA, *"education", "evacuation", "hazard resistant design"* and *"warning systems*". As a result, this hindered the evaluation component of the response, as candidates were unable to draw upon real strategies to underpin their discussions. The evaluation provided was mostly basic and failed to introduce any of the crucial specialised concepts, which would have served to enhance the marks awarded for AO2.

Q.20 Surprisingly, this was the least popular option in the Weather and Climate theme, with only a quarter of those pursuing this theme (120/477) attempting the question. It attained the highest average mark of the Weather and Climate questions, 12.2. Disappointingly, the weakest answers discussed the causes of anthropogenic climate change, as opposed to examining the question set, which asked candidates to evaluate the impacts of anthropogenic climate change. This highlights the importance of candidates developing effective examination techniques, which has already been highlighted during this report. Good responses evaluated the negative and positive implications of climate change and incorporated specialised concepts of adaptation, feedback, inequality, mitigation, place, sustainability, and vulnerability. These discussions revolved around issues including rising sea levels, extreme weather, shifting climate belts and strategies implemented to address climate change. Examples commonly cited included the impacts of climate change in Alaska, recent heatwaves in Europe (Lucifer) and the ongoing consequences of sea level rise in the South Pacific (Tuvalu).

Summary of key points

- Centres should think carefully about the content and examples that are being delivered for: 1) Impacts of volcanic activity 2) Ecosystems at a local scale 3) Physical factors determining the supply of energy 4) Climate and weather of Wales and the United Kingdom.

- The importance of contemporary and relevant case studies across all themes should also be considered.

- Candidates need to pay more attention to the questions set. Sadly, many candidates drift from the question provided, thus limiting the amount of credit that can be awarded.

- It is important to acknowledge that 2020 – 2022 has been a very turbulent time for centres and candidates alike. However, moving forward, AO2 skills, including the discussion and incorporation of specialised concepts need to be enhanced, if candidates wish to access the L3 band for AO2. Examples of appropriate specialised concepts and their application have been highlighted throughout this report.

GEOGRAPHY

General Certificate of Education

Summer 2022

Advanced Subsidiary/Advanced

UNIT 5: INDEPENDENT INVESTIGATION

General Comments

It was very pleasing to see a wide variety of interesting and appropriate investigations being undertaken by candidates, the majority of which were clearly linked to the specification. Most centres coped well with the administration and work arrived on time, which greatly helped the moderation process.

After two years without external moderation, it was good to see that many centres were still familiar with the demands of the Non-Examination Assessment (NEA); however, it was clear that some centres had adapted their approach, allowing less individuality in candidate investigations. Where this is the case, centres should make note of the comments in their individual centre reports. Centres must also be mindful of the requirement to support candidates fully at the planning stage. Many candidates had titles approved that were not appropriate and at times not achievable or poorly linked to the specification. Centres should note that the specification relates to the 21st Century.

Centre declaration forms were completed in all but a minority of cases, however, candidate proposal forms still appear to be an issue and it was worrying to note that many were still, as in previous years poorly completed. Several centres used the wrong forms. All relevant forms for the NEA submission process can be found on the Wjec website. Centres are reminded that WJEC offers an advisory service for teachers to submit proposals to check their appropriateness. If use is made of this advisory service, centres must attach the comments provided to their submissions.

Once again, some titles seen this year were too broad and hence lacked focus, for example, "*To what extent can current coastal management strategies and SMPs along the XXXX coastline sustainably mitigate the threat from climate change*?" while others were brief but not achievable within the scope if the individual investigation e.g. "*How can biodiversity have global impacts?*". Some, for example, set out to assess the impact of management on sand dunes, and then proceeded to reproduce their fieldwork on the dunes but lacked any reference to management. Centres must try and encourage candidates to complete the task they have set out to attempt or to address these issues fully in their evaluations.

Once again it was noted that many investigations were considerably over length, the longest seen consisted of 195 pages and about 10000 words. Centres must advise candidates of this fact and remind them of the impacts of producing work that fails to meet the assessment criteria. The guidance of 3-4000 words was introduced to give candidates a clear indication of the length and nature of the report required for the NEA. A concisely written, well-directed and focussed investigation will meet the Band 5 criteria for Analysis and Interpretation, Conclusions and Presentation requirements and Evaluations, whereas an overlength and unfocused one will not. Securing manageable and focussed investigation titles for each candidate, through detailed discussion at the outset could greatly assist this process.

Marking was often considered to be somewhat generous and over optimistic. Perceptions and annotations often did not match the work that was presented.

It was pleasing to note that most candidates followed the prescribed structure, with clear sections, as outlined in the specification, however, there is still some scope for improvement vis a vis the format of the investigations. The correct font size and spacing make the work much easier to read. Where work is printed from an electronic copy, centres should make every effort to supply these in colour.

Summary of key points

Candidates should ensure that they:

- Have a clear concise title; that is achievable and is of a manageable scale.
- Use their sub questions to plan their data collection and ensure that sample sizes are large enough to enable meaningful conclusions to be drawn.
- Have an awareness of what is required by the mark scheme to achieve high marks.
- Be aware that the evaluation is worth 25% of the total mark, and therefore, have a perceptive evaluation of each stage of the whole process.
- Consideration of the validity and reliability of the knowledge gained could be much stronger.

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