GCE A LEVEL EXAMINERS' REPORTS

GEOGRAPHY
A LEVEL

SUMMER 2023

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GCE GEOGRAPHY

GCE A LEVEL

Summer 2023

COMPONENT 1: CHANGING LANDSCAPES AND CHANGING PLACES

General Comments

- The ability to use grid references to identify features on OS maps was erratic and many could not apply this geographical skill. Some candidates' work could be improved by reinforcing basic techniques of location on maps in general.
- Analysis of population pyramids needs to concentrate on overall patterns and be related to the question set.
- Analysis of patterns on tabulated data need to pay more attention to overview rather than isolated comparisons.
- The use of case studies in the essays was generally sound and appropriate but candidates should try to integrate and apply them in 8-mark questions too. In the Changing Places essays, they need to be employed in a more fitting manner so that they address the question rather than just demonstrate knowledge of examples.
- Candidates should identify their selected questions on the front sheet of the answer booklet.

Comments on individual questions/sections

Section A: Changing Landscapes

Coastal Landscapes was the most popular route with 78% of the candidates choosing this option. Mean marks for the glaciated landscapes option were generally slightly higher than those for the coastal landscapes option.

Q.1 (a) Candidates were able to access the information provided in the figure with the majority able to provide descriptive outlines of the impacts of coastal erosion in the two Nigerian states. The better answers were more analytical as required by the question and viewed the information using a more interpretive approach. These answers usually combined aspects of the tabulated data to review the different impacts. For example, many commented on the economic losses in the context of the coastal population in each state whilst others referred to the inverse relationship between rate of erosion and economic loss. These candidates used the information as support for their analysis rather than the focus of their answer. Less successful answers found it hard to not simply describe and lift from the resource. A small number of answers drifted into explanation which is not required in a skills-based question.

(b) Answers to this question generally lacked balance between the outline of longshore drift and solution as processes of coastal transport. The best answers were often those that addressed longshore drift through an illustrative approach using a well annotated diagram to show the link between prevailing wind, swash, backwash and direction of sediment movement. These answers were well developed and gave detail on both process and the variables involved. These answers were often given context with a developed example such as the Holderness coast and Swanage Bay. Unfortunately, many responses were limited and displayed little progress beyond GCSE level giving only a basic synopsis of the process. There was also a significant minority that confused the pattern of swash and backwash. Solution was a particular stumbling block and misunderstood by the majority of candidates and answers tended to focus on erosion rather than transport. There was limited comment on the movement of material in solution by wave and currents. Answers frequently displayed a lack of knowledge with regards to both the process of solution and the pH of sea water. Very little reference was made to biochemical reactions, but some more developed responses did use the examples of chalk and limestone to add depth to their outline of this process.

Q.2 (a) Answers to this question fluctuated between very good and limited. The basis of the question was an application of basic map skills with many candidates showing the ability to identify and locate features on an OS map. However, a significant number of candidates could not successfully locate a valid landform using eastings and northings, often confusing the correct order. In addition, many identified a valid landform but quoted an incorrect grid square. Other candidates went beyond the requirements of the question and spent valuable time explaining the development of their selected landforms.

(b) There were some good answers that focused on beaches as the selected landform. Candidates who addressed the time element highlighted in the question examined the seasonality of storms, wave type and wave energy often with diagrams explaining the characteristics of destructive and constructive waves. These variations were linked to changes in the nature of beaches across the seasons concentrating specifically on their steepness, width and composition. Some candidates developed these points and referred to the development berms and storm beaches. Good answers frequently related variation to located examples with some describing the impacts of seasonal change on specific beaches in eastern England, Devon and Pembrokeshire. Some responses addressed seasonal change in the context of sand dunes. Those who selected erosional landforms such as cliffs, stacks and caves tended to focus on changing characteristics that operated on a more extended timescale. Although some were able to refer to erosional processes that had a seasonal magnitude and relate their impact to a sequence of seasons, most answers that looked at erosional landforms focused on process, which was only part of the question. A minority of candidates took a stretch of coastline instead of a single landform which diluted their answers.

Q.3 This was the least popular of the coastal essays and tended to produce polarised answers. Good responses usually focused on tidal flats and salt marshes where the operation and impact of fluvial processes could be outlined and explained. The importance of rivers as the source of sediment was acknowledged with some answers also referring to transport processes to address the AO2 element of the question. The methods of deposition in these environments were usually well developed with comment on the interaction between sea water and rivers. The importance of biotic processes in salt marshes again addressed the AO2 content of the answers. Some candidates addressed coastal environments outside the UK with sections of their essays devoted to estuarine mangrove swamps in S.E. Asia with developed comment on the role of vegetation. There were some sophisticated answers that took the suite of landforms found on and behind a spit and looked at the relative importance of fluvial processes in the formation of salt marsh, spit and dunes with Spurn Point as the usual example. Some successful answers adopted a comparative approach examining the relative importance of fluvial and biotic processes against human intervention in the formation of landforms. Many appropriate examples were chosen to exemplify this approach for example Dawlish and Farlington. Unfortunately, many answers did not know what fluvial processes were and examined marine and aeolian processes reflecting on how they operated in a low energy coastal environment to produce landforms. It was difficult for this approach to gain Band 3 credit as it failed to overtly address the focus of the question.

Q.4 This was the most favoured of the coastal landscapes essays. The focus of the essay was on positive impacts of coastal processes on human activity and of course many answers devoted a large proportion of their answers to a discussion of tourism. Successful answers need to display an understanding of coastal process as well as positive impacts and many chose to discuss the formation of specific landforms before discussion of their influence. An analysis of depositional and erosional landforms often exposed different reasons for their attraction for tourists and thus the nature of the positive impacts. The Jurassic Coast was frequently used to outline the production of spectacular scenery with the development of beaches and dunes on the Holderness coast, Devon and Northumberland as contrasts. The impacts were initially developed as economic benefits but many also commented on the social and psychological benefits of leisure facilities. This gave ample opportunity for candidates to address the AO2 element of the question. Another successful approach examined a broad range of positive impacts which enabled a comparison with tourism. These candidates discussed the processes linked with the development of mangroves and coral reefs and related these to the protection they gave to settlements and economic activity in the locations used as support. The negative aspects of tourism, such as over-heating, increased house prices and second home ownership, were frequently used to provide balance the discussion and this was a credit worthy adjunct to the answer. Unfortunately, a significant number looked at negative impacts as a contrast to positive and this went outside the bounds of the question and usually involved detailed case studies of erosion.

Q.5 (a) Candidates were able to access the information provided in the figure with the majority able to provide descriptive outlines of the potential impacts of glacial lake outburst floods in the two Nepalese glacial lakes. The better answers were more analytical as required by the question and viewed the information using a more interpretive approach. These answers usually combined aspects of the tabulated data to review the different impacts. For example, many commented on the potential economic losses in the context of the number of people potentially affected below each lake whilst others referred to the limited impact of expansion rate on economic loss. These candidates used the information as support for their analysis rather than the focus of their answer. Less successful answers found it hard to not simply describe and lift from the resource with comments based on infrastructural and agricultural data. A small number of answers drifted into explanation which is not required in a skills-based question.

(b) There were some good responses to this question with accurate and detailed outlines of both internal deformation and basal sliding. These answers were usually organised around cold-based and warm-based glaciers and used the characteristics of these glaciers to outline how and why the processes were linked to this classification. Some candidates were able to enhance their answers using diagrams which helped in the explanation of complex processes. Only a small number gave examples such as Greenland for cold-based glaciers or Alpine glaciers for warm-based. Answers were less impressive where candidates had only a partial grasp of the processes or where they attempted to discuss aspects of each in a less structured commentary.

Q.6 (a) Answers to this question tended to fluctuate between very good and limited. The basis of the question was an application of basic map skills with many candidates showing the ability to identify and locate features on an OS map. However, a significant number of candidates could not successfully locate a valid landform using eastings and northings, often confusing the correct order. In addition, many identified a valid landform but quoted an incorrect grid square. Other candidates went beyond the requirements of the question and spent valuable time explaining the development of their selected landforms.

(b) There were some good answers that approached the question through an analysis of post-glacial changes to a corrie. These focused on the impact of weathering on the characteristics of the backwall and the accumulation of scree slopes at its base. Some candidates addressed the infilling of corrie lakes with sediment and the impacts of fluvial action on moraines on the lip of the corrie. These answers, in addition, often referred to post-glacial changes to arêtes. Case study material, often showing fieldwork experience, was frequently used to illustrate and enhance explanations with Cwm Idwal and Red Tarn being popular examples. Other candidates approached to question in a broader format taking a glacial trough as the landform and discussing the impact of periglacial, fluvial and human processes in its post-glacial development. These answers were not as detailed but displayed a wider grasp of landscape evolution. Some answers lacked balance and spent too much time on the processes operating with limited comment of the alteration of the landform. Less successful responses failed to recognise the post-glacial focus of the question and concentrated on the glacial formation of the selected landform, usually corries.

Q.7 Good answers were usually structured around an analysis of contrasting depositional environments associated with lowland glaciation. A typical sub-division examined processes operating beneath the glacier (subglacial), on top of or along the margin of the glacier (supraglacial/ice-marginal), and out in front of the glacier (proglacial). Candidates used this sub-division to demonstrate how lodgement, ablation and fluvioglacial meltwater contributed to assemblages of specific landforms. The most developed were the proglacial environments where candidates explained the role of meltwater in the production sandur, kettle holes and varve deposits. Ice marginal moraines also featured in many answers, but the processes associated with their formation were not well understood by a number of candidates. Fewer answers examined the formation of different till deposits although the development of drumlins formed an element of many answers. Those answers that took a landform-by-landform approach tended to be less successful in analysis of relative importance as they switched between environments regularly. In some cases, candidates found it difficult to focus on depositional processes and included information on glacial erosion. Exemplar material came from present and historical glacial landscapes. This was acceptable when relating erosion to the production of sediment to be deposited but some drifted into landforms of erosion which was outside the remit of the question.

Q.8 Answers to this question were usually structured around the temporal divisions shown in the specification. Glacial and interglacial periods formed the basis of most answers' discussion of long-term variation in budgets with suitable causes put forward in explanation. This was approached mainly from a theoretical standpoint, but it would have been more constructive if answers had been supported with reference to variations in the extent of ice in the glaciations of Britain. Medium term changes were well explained with some informed development of the causes and character of the LIA and MWP. Seasonal changes were usually explained effectively and outlined in the context of Alpine glaciers. It would have been nice to see more on a description and explanation of seasonal change in ice sheets. As would be expected, candidates were strong on the impact of climate change on glacial budgets. Answers could have been more evaluative and made more overt reference to magnitude, timescale and process. There were some weaker answers that just covered the seasonal scale.

Section B: Changing Places.

Q.9 (a) (i) Candidates were able to access the information presented in the figure and scored well overall with most being able to identify patterns of gentrification in western USA. Many answers approached the question holistically commenting directly on the distribution of categories shown in the key. The coastal and western concentrations of urban areas with a high number of gentrified neighbourhoods were identified by the majority of candidates. Overview comments were usually supported with reference to information extracted from the resource. Fewer responses commented on the more dispersed nature of urban areas with low numbers of gentrified neighbourhoods, but the anomalies found in the northwest and southeast were seen by many. Answers that relied on an accumulation of specific comments were scarcer. Some answers drifted into explanation with comment on wealthy populations and migration, but these candidates were a small minority.

(ii) This question generated a good deal of discussion with candidates presenting an abundance of information about gentrification. The better responses did not deviate from the social changes that formed the central requirement of the question. Some focused on a small number of changes and developed their answers with good depth and development of argument whilst others presented a broader view that gave emphasis to linkages that constitute social change. Many candidates made population characteristics the centrepiece of their answers explaining how gentrification led to changes in the wealth and ethnicity of a located area. The consequential social impacts of gentrification were discussed in many answers with reference to housing, health and education. Although not common, a number did observe the impact of gentrification on the identity of a place, particularly the creative and tech images forged by gentrified places. The use of case study material was a feature of most answers with reference to gentrified areas of London, Liverpool, Birmingham, Sheffield, Manchester, Newcastle and Cardiff commonplace. The key to a good answer was organisation and direction and good answers had a tight organisation based on question analysis. Many candidates however simply provided rehearsed answers that covered all aspects of gentrification from causes to woolly consequences and even drifted into unspecific regeneration.

Q.10 (a) Many responses took a descriptive approach that focused on the identification of specific age groups and extraction of comparative data rather than a holistic examination of the two population pyramids. The theme of a significant number of answers also drifted towards a detailed comparison of the gender split between the suburb of Clifton and the whole of Bristol when the question asked for the age structure. A smaller number were diverted into explanations of the age characteristics of Clifton citing the location of the university as a reason for the proportion of population aged 15-29. There were however more sophisticated overview statements relating to both pyramids having a high proportion of young adults and a relatively low proportion of children/young dependants.

(b) This question had a number of facets that many candidates did not appreciate. Good answers initially identified and outlined a valid change that has occurred in rural places such as counter-urbanisation, growth of second home ownership or regeneration. This should have instigated a discussion of consequent inequalities in the rural community which could have referred to income, housing, communication or services. Although many candidates demonstrated understanding of rural issues their application of concepts and knowledge to inequalities was not clear and these had to be teased out by the examiners. Too often answers focused on the problems and difficulties of living in rural areas and were developed in a ‘rural v urban’ context. Many answers mentioned the digital divide from this standpoint using generic statements that were quite simplistic such as ‘rural areas do not have wi-fi’ and ignored the fact that many rural places are rapidly upgrading. The digital inequality lies between those that have and have not been upgraded. Candidates often referred to case study material frequently using examples from Cornwall, Gwynedd and the Lake District.

Q.11 This is the first time that this section of the specification has been examined as an essay and it was only answered by a small proportion of the candidates. Many found the nature of the question problematic and did not recognise the importance of place meaning and representation as an essential element of the answer. There were three segments to the question that had to be addressed – the meaning/representation of a place, the subsequent change to the place and an examination of both segments. Only a small number of candidates structured their answers accordingly. The meaning/representation segment, where included, was not given enough attention or development, and was often discussed in a brief and incomplete fashion. Meaning and representation was frequently only a few sentences that outlined how a place was seen as rundown or had traditional rural characteristics. Other aspects of meaning were usually ignored. The majority of responses launched into a description of change in their selected place(s) without reference to its meaning/representation and as a result credit was limited as the answer only partially addressed the question. There were some good responses that addressed all segments of the question and these usually covered a number of places where the original place meanings/representation had led to different types of change such as economic, social and demographic. Areas of industrial decline and regeneration, such as Salford Quays, Blaenau Ffestiniog and Digbeth in Birmingham, were frequently used as examples. Other answers examined how the representation of coastal villages had led to change in social structure and home ownership using examples from Cornwall, Yorkshire and Ceredigion.

Q.12 By far the most popular essay question with many candidates demonstrating confident knowledge and understanding of located places that have experienced industrial decline. There was large variation in the choice of case studies, Liverpool, Stratford, Cardiff, Sheffield and Detroit were frequently used to good effect although in a number of cases the historical background took a large part of the content. As the question addressed industrial decline many answers began with initial comments on the negative outcomes of deindustrialisation with explanations of the economic, social, demographic and environmental repercussions. Elaborate responses recognised and developed the linkages between these elements using the spiral of decline as an organising tool to make their points. More sophisticated answers examined how some places had attempted to overcome the negative impacts over time with varying degrees of success, for example enterprise zones in South Wales and the regeneration of Kelham Island or Salford Quays. Many commented on the positive impacts of industrial decline such as the reduction of pollution levels and improved health for the local population. There was also evidence of impacts being more widely felt on males versus females and how the ‘culture’ of a place had changed over time as a result of the loss of a ‘male’ dominated industry e.g. coal mining, shipbuilding. Many candidates focused on one located example in depth but some also took a comparative approach with more than one example to contrast against. Overall, a well answered question by the majority.

Summary of key points

- Candidates may benefit from a more analytical study of the key geographical features displayed in resources. An examination of patterns and trends rather than extraction of specific data would improve responses. Candidates should aim to use data to support overview comments.
- Time taken in question analysis to identify their key elements will provide more focused answers.
- The assessment element of the essay questions could be improved by an examination of temporal and spatial characteristics as well as processes.
- Where handwriting is clear it is easy to follow the arguments made in an answer. Examiners reported that it was sometimes very difficult to read candidates' handwriting.

GCE GEOGRAPHY

GCE A LEVEL

Summer 2023

COMPONENT 2: GLOBAL SYSTEMS AND GLOBAL GOVERNANCE

General Comments

Candidate performance overall was similar in profile to June 2022. Now, as then, the mean mark for all 20-mark questions was in the 11 to 12 range. The mark distributions for questions 1, 3, 5 and 6 were also similar, with mean marks in the range 5.6 to 6.3 in 2022 and 5.8 to 6.1 in 2023. The mean mark for Question 9 in both 2022 and 2023 was 19. In both years, Question 9 was answered by more than two-thirds of all candidates.

Comments on individual questions/sections

Section A: Global Systems

Question 1

Q.1 (a) (i) A minority of candidates incorrectly answered 3, having misread the scale of the y axis. In some cases, this included candidates who scored highly across the paper as a whole. Candidates should be reminded not to rush tasks they perceive as relatively simple.

(ii) In common with the previous question, a surprising number misidentified the month with the greatest water deficit as June.

(iii) Performance on this question was disappointing. A significant number of candidates described the entire resource rather than focusing solely on precipitation, as instructed. Those that did focus correctly on precipitation often gave an account that listed the data for different months yet made no explicit reference to the *annual pattern* of precipitation. In essence, they described how precipitation varies by month, which is not quite the same thing. For full marks, it was essential that candidates could communicate effectively to the reader the essential character of the annual pattern. All that was necessary to fulfil this requirement was to include a brief overview of the marked seasonal variations in precipitation or mention the strong contrast between summer and winter data. Only a small minority of candidates did this.

(iv) This question required candidates to apply their understanding of water cycling and storage over varying timescales to a novel location in northern Canada. Many answers showed little progression beyond GCSE level understanding of the water cycle. These candidates explained that hotter temperatures in the summer leads to more evaporation and more transpiration at a time when rainfall is low. In fact, the figure shows the opposite: summer is when precipitation is highest in this location, a fact that the previous question had drawn attention to. The relatively simple understanding that higher summer temperatures can result in higher evaporation and transpiration than in winter was insufficient to warrant the award of a band 3 mark.

High-scoring answers correctly noted that a winter water surplus is utilised during summer. Good geographical reasoning was demonstrated by candidates who suggested that northern Canada is a region where winter snowfall might melt and evaporate during summer, resulting in evaporation rates that exceed precipitation levels. Some high-scoring candidates effectively applied understanding from their carbon cycle learning about temperate grassland ecosystems and climates.

Q.2 (a) Most candidates competently drew comparisons between the two distributions. Almost all candidates identified the occurrence of peatlands in northern and western areas with a cold and wet climate. The majority made reference also to the presence of peat in Wales, along with smaller areas in eastern England that were usually framed as 'anomalies'. Identification of the latter did not automatically guarantee access to mark band 3 however. The highest-scoring answers provided a genuinely developed or sophisticated analysis with sustained manipulation of evidence. Some noted that peatland is associated with both cold and wet *and* warm and wet conditions, leading them to surmise that the common denominator is a local climate that is wetter than the UK as a whole. Other high-scoring candidates made use of the map legend to quantify the size of the small peatland areas in East Anglia.

(b) Relatively few candidates were able to access the higher mark band. This question about physical geography was clearly challenging for many. Some candidates wrote about human factors such as agriculture. In such cases, some limited credit was awarded for details of peat forming processes. However, answers with a human focus were unlikely to score more than 1 or 2 marks. Candidates were expected to demonstrate understanding that physical factors such as relief, altitude, geology and soils are key physical factors controlling local drainage. Vegetation was also credited as a physical factor. Answers at the top end of the marking range typically provided a correct explanation of the role that slopes and impermeable rocks play in promoting water logging and thus anaerobic conditions.

Q.3 This was the least popular of the four 20-mark essays on this year's examination paper. Less than one-fifth of candidates attempted question 3. Many of those who did, however, often gained a secure band 2 or band 3 mark. Popular themes included the importance of fossil fuels for economic growth and development, along with the importance of aquifers for settlement growth in semi-arid and arid areas. Candidates usually made effective use of a case study of an aquifer to support their argument. High-scoring answers often demonstrated understanding that all water and carbon stores are ultimately of great importance due to the way in which Earth's water and carbon cycles and connecting flows operate. Lower-scoring responses to this question, of which there were not many, tended to dismiss the essay title out of hand and focused instead on other stores including the atmospheric and oceans. Candidates need reminding that statements provided for discussion should not be dismissed out of hand in favour of alternative propositions. Candidates are always advised to focus their argument primarily on the ideas, concepts or issues that they have been presented with in the essay statement.

Q.4 Most candidates chose this question. At the upper end of the marking range, they produced well-informed essays focused on deforestation, afforestation, urbanisation, groundwater extraction and peatland destruction or restoration. The highest-scoring answers linked all activities securely with the idea of changing land use. Thus, they framed their material dealing with peat soils as a land use change towards agriculture, or the abandonment of farmland and reversion to wilderness. High-scoring answers also tended to reflect on what was meant by a 'highly negative way'. They distinguished between (i) changes interfering with the natural functioning of systems and cycles, and (ii) changes impacting negatively on human life or ecosystems.

In the middle of the marking range, candidates typically wrote about a narrower range of themes (perhaps just two), or covered a wider range but with scant if any supporting evidence. Some of the changes described were not linked securely with the idea of land use, especially accounts of deforestation and peat destruction. It was unclear what if any land use change was the reason for forest removal or peat destruction. Answers in band 2 usually managed to still gain AO2 credit, however, by discussing at least one positive and one negative change - usually by mentioning that afforestation can help to repair the damage done by deforestation.

At the bottom end of the mark range, candidates gaining band 1 or low band 2 marks were only able to offer brief and generalised descriptions of forest removal and urban growth. They scored particularly poorly under AO2 in cases where only two or three negative changes had been sketchily described.

Question 5

Q.5 (a) (i) The majority of candidates correctly identified the percentage value as 44.

(ii) For the award of full marks, candidates were expected to describe variations in the rural-rural migration percentage in relation to the level of urbanisation recorded on the y-axis. Some candidates made no reference to the y-axis and simply listed the maximum and minimum percentages. Candidates achieving band 3 identified the minimum and maximum and further noted the inverse relationship with the level of urbanisation. They additionally made wide use of the resource by observing the relatively similar values recorded for countries with a medium level of urbanisation.

(iii) Surprisingly few candidates achieved a secure band 3 mark. The majority were instead awarded a band 2 mark for relatively generic answers suggesting that rural-urban migration rates vary in accordance with the level of jobs available in different countries' cities, or the strength of rural push factors such as unemployment. In other words, candidates were often unable to apply the more detailed and specific understanding they are meant to have acquired through study of this part of the course, notably in relation to the specific urban pull factors that operate in many emerging economies, including employment provided by MNCs and the growth of export processing zones.

In contrast, candidates who had revised section 2.2.5 thoroughly had no difficulty in accessing the top mark band. They wrote confidently and thoughtfully about mechanised agriculture, land grabs and global supply chain growth in export processing zones. The best answers showed excellent geographical understanding that the most urbanised countries - such as New Zealand - no longer experience large-scale rural-urban migration.

Q.6 (a) This was the most well answered of the four descriptive and analytical tasks on this year's paper. It was pleasing to see most candidates providing an overview of the data that communicated changes in both size and importance effectively. Many candidates seemed well versed in manipulating the numbers using words and phrasing that conveyed the significance of changes, typically the recognition that Shanghai has 'more than doubled' in capacity.

The highest-scoring answers at the top of the mark range were more discerning in their analysis. In addition to identifying the number of Asian ports rising from 6 to 9, they additionally noted that the original 6 were not all still present in 2019 - certain cities had dropped out of the top 10. Answers at the lower end of band 2 were often too brief and sometimes lacked focus on the Asian ports. The clear wording of the question is such that there is absolutely no credit to be gained by explicitly naming the ports of Rotterdam, Hamburg, Dubai and Los Angeles.

(b) Candidates made use of a wide range of agreements, contexts and ideas when answering this question. Wherever possible, credit was given to answers whose focus was the governance of international movements of shipping vessels and their contents, including people. The most popular themes, as intended, were UNCLOS provisions and EEZ rules. Credit was given too to answers that outlined the need to regulate international shipping movements through canals, or the need to support landlocked countries whose governments or companies wish to operate shipping. Where possible, some credit was given to answers focused on international rules affecting the commodities that are moved by ocean-going vessels. For example, some credit was given to answers that outlined the way goods moved by shipping between different European ports are not normally subject to tariffs under EU rules. While this might not be the most immediate way of answering the question, it nonetheless has some validity.

Q.7 This was the more popular of the two human geography essays on this year's examination paper. Most candidates experienced little difficulty in framing several themes they had learned about as sources of economic, social or environmental risk for people, societies, environments or the planet as a whole. At the top of the marking range, candidates typically evaluated the economic and social risks associated with: damage to undersea cables; misuse of the internet; environmental harm created by oil spills; and the contribution that international shipping makes to global carbon emissions. The highest-scoring answers carefully weighed up the severity of different risks, or commented explicitly on their magnitude and scale.

Band 2 responses in the middle of the marking range usually consisted of a reduced range of detailed themes, or a wider range of generalised ideas with little specific detail or evidence. For example, a candidate scoring half marks on this question typically outlined the vulnerability of sea cables to various generic hazards before briefly describing the danger that migrants put themselves in when crossing the English Channel. Such answers tended to be relatively weak in relation to assessment objective 2, with the candidate simply stating repeatedly that all risks are severe.

Q.8 This question was relatively less popular. Candidates who answered well were knowledgeable about the UK's past and the varied ways in which colonial history continues to shape present-day links and connections between the UK and other countries. Popular themes included international migration, diaspora communities and the UK's soft power (for example, the benefits gained on account of the importance of English as a global language). Some candidates argued that wealth accumulated by Great Britain during the colonial era helps explain its ongoing privilege and status as a G7 member. A few candidates noted that the UK's special relationship with the US dates back to the latter's time as a European colony.

Band 2 answers in the middle of the marking range typically lacked range or depth. Candidates scoring half marks were likely to write one paragraph about the Commonwealth Games and a second paragraph about the Windrush generation. As with other essays, band 2 and high band 1 responses tended to be descriptive and scored more highly for AO1 than for AO2.

Q.9 Just over two-thirds of candidates chose question 9. Most were able to tell a coherent geographical story using the four figures combined with their own understanding from taught elements of the course. Typically, candidates identified landscape changes that might promote migration before contrasting these with human causes of refugee movements, such as conflict in figure 6. An alternative counter argument was also available using figures 7 and 8. These show climate change mitigation is possible if people make informed choices to reduce their carbon footprint (figure 7) and industries and universities continue to innovate (figure 8).

At the upper end of the mark range, candidates were able to discuss all of these ideas in a more developed way. For instance, the highest-scoring candidates linked figures 5 and 6 together by arguing that many of the causes of refugee movements in figure 6 that appear at first glance to be independent of climate change may, in fact, be connected after all. Thus, changing environmental conditions may promote competition over land and resources that become categorised as political and conflict-related causes. In other words, there are both direct and indirect causes of refugee movements in figure 6, all of which can be linked with climate change in figure 5.

The highest-scoring answers were usually critical of figure 7 too. They noted that small changes to one mode of transport in a single country may do little for global climate change mitigation: action on a larger scale is needed. Typically, they also recognised that the data for 2020 may be misleading as flights would have been grounded during the Covid-19 pandemic. The best answers supported all points with evidence and examples drawn from course learning, notably in relation to coastal erosion, land grabs and quaternary industries.

Candidates in the middle of the mark range lacked the developed discussion seen in higher-scoring responses. Figure 5 and figure 6 were therefore used to frame a basic argument that some movements are caused by climate change while others are not. Figures 7 and 8 were used to argue a simple case that climate change can still be presented if people are prepared to do the work. These answers usually scored fairly highly according to AO3 - often obtaining 7 or 8 AO3 marks - but were less likely to gain AO1 and AO2 credit due to a paucity of additional course learning and discussion points.

At the bottom end of the mark range, candidates in band 1 or at the lower end of band 2 typically used only one of the two possible counterarguments. *Either* they argued that there were causes of migration other than climate change, *or* they argued that climate change can be stopped from becoming a cause of migration. Often, these answers contained almost no additional knowledge and understanding and so scored poorly under AO1.

Answers at the bottom end of the marking range were sometimes unsure how migration and figures 7 and 8 were connected. They argued that figure 7 suggested fewer people were now migrating using aeroplanes - even though half of the flights shown are domestic. They argued that climate innovation clusters are a cause of international migration because they attract many international scientists to Bristol. While this could possibly be the case, it is not the most sure-footed way of applying figure 8 to the question asked.

Q.10 Responses to question 10 typically began with some discussion of the permanent harm to societies and environments suggested by figures 5 and 6. A counterargument was then introduced based on figures 7 and 8, both of which show actions that may yet stop climate change from causing excessive harm. At the top end of the marking range, candidates developed their discussion of figures 5 and 6 using their own understanding of positive feedback and tipping points. They were therefore able to stress and emphasise the *permanent* harm that is suggested by figure 5, and the feedback loops suggested by thawing permafrost in particular.

Their discussion of figures 7 and 8 was usually more nuanced also. They were able to both argue and counterargue that the actions in figure 7 and 8 will be sufficient to stop permanent harm. High-scoring answers were critical of figure 7 and noted the small scale and ambition that it suggests, and the anomalous impact of the Covid-19 pandemic on flight data. They were also able to explore figure 8 in a more nuanced way, for example by arguing that more ambitious technologies such as carbon capture and storage need to be realised urgently.

Answers in the middle of the mark range in band 2 typically used the figures in an undeveloped way. They crafted a simple discussion in which the impacts shown in figures 5 and 6 were presented as disasters that may yet be averted thanks to the actions shown in figures 7 and figure 8. Provided some thorough use was made of all four figures, and a few fragments of candidate's own AO1 understanding featured in the answer, marks in the upper teens were easily attainable even with this limited approach to discussion.

Answers in band 1 tended to be those that made little if any use of the figures. For example, candidates focused unevenly on cliff erosion (figure 5) and Greta Thunberg (figure 7), with little or no reference to figures 6 and 8.

Summary of key points

The following points were all raised in the previous report for the June 2022 examination and are worthy of repetition here because they remain the most common causes of underperformance other than insufficient revision.

- Some candidates continue to answer questions with insufficient attention paid to the wording. Candidates are reminded to underline key words and phrases in short answer questions and to ensure their response is addressing the question in full. This year, a surprising number of candidates described figure 1 in its entirety in Q1(a)(iii) instead of focusing on precipitation only. In Q2(b), some candidates ignored the restriction 'other than climate' while others wrote about human factors.
- Candidates are reminded – once again - to use their time wisely. A minority of this year's candidates, as in previous years, wrote three very long essays without leaving sufficient time to answer the shorter questions fully. The net impact on their cover mark was negative.
- It is essential that candidates are fully versed in the weighting of the assessment objectives in Section C of the examination. Writing in depth about pre-learned case studies while neglecting to make use of the figures will restrict candidates' access to the higher mark bands.
- Candidates should approach the data skills questions on this paper as an exercise in communication and data storytelling. Which key ideas do they need to communicate to the reader? What are the most important trends, patterns or stories shown by the data? How best can changes and trends be communicated in a reader-friendly way, for example by using phrases such as 'more than doubled' or 'almost halved' when referencing data changes? This year, performance on Q6(a) was very strong in this respect. The entire cohort's performance on Q1(a)(iii) was weaker, however.

GCE GEOGRAPHY

GCE A LEVEL

Summer 2023

COMPONENT 3: CONTEMPORARY THEMES IN GEOGRAPHY

General Comments

- This component places considerable demands on candidates, both terms of its breadth of subject content and the challenging nature of the essay questions set. This year, unlike in 2022, no Advance Information was released to candidates and therefore the paper was exactly comparable to all other previous papers since the beginning of the specification.
- This paper proved to be accessible to most candidates with extremely few rubric errors, but there were quite common misinterpretations of questions.
  Question 3 – failure to write on succession and local scale ecosystems.
  Question 13 – writing about the UK's climate as opposed to weather.
  Question 14 – writing on hazards associated with low pressure.
- Most candidates were able to answer all three questions within the time allocated. There was some evidence that candidates still spent too long on Section A Hazards (lower tariff) and had to rush their last question. Similar to previous years, candidates from some centres had been briefed to do Section A last in recognition of this lower tariff, a strategy that worked well.
- The paper differentiated very effectively with substantial numbers of candidates displaying both an impressive level of knowledge and conceptual understanding (AO1) combined with sophisticated skills of analysis, evaluation and synthesis (AO2). However, there were also significant numbers of weaker candidates who found some questions very challenging and experienced considerable difficulties with structuring their answers and applying their often overprepared learning to fit the question set.
- There was increasing evidence of the use of diagrams but to be worthwhile, these should be well drawn and well annotated and referred to in candidates' essays. Answers to Q1, 2, 3 and 13 were really enhanced by good diagrams. The mark scheme provides several examples of very useful diagrams and in the mark scheme under AO3 suggestions are made both for suitable diagrams and for using graphs/statistics/maps.
- An area of concern this year, highlighted by nearly all examiners, was the illegibility of candidates' handwriting. It would seem that, in many centres, homework was done using computers, and that candidates had little experience of developing good quality, clear, legible handwriting, and in the selection of suitable pens and/or other stationery.
- A further concern was the quality of essay writing in terms of paragraph use and style (see section on essay writing skills below). Many essays drifted from the focus of the question as candidates were often determined to show their results of revision, e.g. discussion of measures of development Q9 or causes of global warming Q14.

Effective preparation for this examination should focus on two facets:

1. Revising the knowledge and understanding for the chosen options

A number of activities may prove very useful:

- Putting clear focus on the specification detail to ensure students understand all relevant concepts and key terms, e.g. primary and secondary hazards (Q2) or Hard and Soft power. Q.6/8
- Revising specialised concepts which had relevance for the chosen option e.g. Risk and Resilience (Q1 & 2), Sustainability (Q4), Globalisation (Q6 & 8) or Adaptation and Mitigation (Q14) or
- Explaining complex concepts and geographical terminology, e.g. Ecosystem succession (Q3), Hard and Soft Power (Q6 & 8), Water Security (Q5 & 7), Desertification (Q10), Jet Stream (Q13) were areas some candidates struggled with.
- Updating case studies, for example, studying examples of recent tectonic hazards (e.g. White Island 2021, Turkey and Syria 2023) or reading summaries of relevant reports (e.g. Dasgupta Report on Biodiversity 2020) and the results of the IPCC and ISBES reports from the most recent COP conferences at Glasgow, Sharm El Sheik and Bonn. It was notable that with the Development in Africa option, many case studies were outdated and use of journals such as The Economist should prove helpful.
- Encouraging the candidates to work on their case studies and research to identify possible relevance. A brief fact file on location, causes, impacts etc is often useful, with records of any noteworthy features.
- Preparing easy to draw diagrams which might be relevant frameworks, (e.g. Degg or Parks Models, Risk Equation, Hazard Management Cycle for Section A and Spectrum of Biodiversity, Ecosystem Succession, Energy Transition Model or Kuznet's Curve for Section B), as well as precise statistics and data, for example, of energy mix or impacts of hazard events.

2. Honing the candidates' essay writing skills

- Practise planning essays effectively with clear plans for paragraphs, not based on case studies, but on arguments for and against etc., i.e. establishing a structure.
- Developing the skill of writing an introduction which defines the issues and introduces key terms from the title. Far too many essays began with the 'I am going to do or tell you' style or 'I agree with the statement' before they had written the essay. A better style would say 'Arguments for..'.
- Practise using evaluative language – as these are evaluative essays.
- Ensure that case studies are used effectively to add precision to general frameworks not just as blocks of well learned description.
- Practising and allowing time for conclusions which referred back to question.
- Thinking about where to insert useful diagrams and prepared statistics as well as to use specialised concepts in a natural as opposed to contrived way.
- Making candidates familiar with the generic mark schemes so they understand how their essays will be assessed.

It was apparent from the scripts that certain very successful centres had embedded these essay writing skills in their teaching and learning and it made a huge difference to their candidates' performance.

Comments on individual questions/sections

Section A
Theme 1: Tectonic Hazards

Whilst many candidates showed competence in answering these questions, some answers were very disappointing for a number of reasons:

- Many candidates spent far too long on this section, frequently writing longer answers than the more heavily mark weighted Section B questions.
- Many answers were extremely descriptive with knowledge of case studies not matched by an understanding of their importance in contributing to an evaluation of the question.
- Around 30% of candidates concentrated on a 'two case study only' approach, one to agree with the question and another to disagree, e.g. HIC/LIC. Whilst depth can be rewarded as well as breadth, long descriptive case studies disadvantage the candidate, often with a failure to extract key features such as the importance of tsunami following earthquake at Tohoku 2011 (Q 2).
- There were frequent case study inaccuracies, for example, on magnitude, (VEI or MM) and timing or nature of products ejected.
- A few candidates muddled up earthquakes and volcanoes and developed hybrid responses.

Q.1 Whilst some good responses were seen, many candidates provided little knowledge as to how volcanic eruptions could be predicted. In particular, prediction is very complex, as while volcanic eruptions are spatially predictable, in many other aspects, such as VEI, or nature of products erupted, they can be very unpredictable.

The best answers provided good quality detail on means of monitoring and forewarning to evacuate local people. Many drifted away from risk to life (question wording) and moved into descriptive details as to the effects of the ash cloud from E15 in Iceland and its disruption of air travel and other aspects of loss from eruptions.

Some of the best answers explored the improvement of technology over time, for which the use of historic case studies such as Vesuvius AD79 were a legitimate case study. Equally, Mt Nyiragongo in D.R. Congo provides a very useful study when comparing earlier eruptions (2003) with the most recent, in terms of loss of life, and exploring the impact of the Goma Plan 2016. Much greater accuracy in case study approach is necessary with Nevado del Ruiz, Soufriere, Montserrat and Mt Pinatubo, Philippines – all suffering from imprecision.

Another problem occurred where answers on the success of prediction and monitoring was purely explained by level of development. The 'two case study' approach, usually of E15 (developed HIC) or Mt Merapi, Indonesia or Fire Mountain, Guatemala (undeveloped LIC) did not work as the reality is there were so many other factors involved.

Intrinsic characteristics of the volcanic eruption (e.g. products erupted, VEI) and extrinsic circumstances (e.g. governance, population density in immediate area, management of risk etc.) provide a more useful framework for analysis (see mark scheme).

Q.2 Again, there were many good responses, but many candidates were unable to differentiate clearly between Primary and Secondary hazards. Whilst there is some blurring of the two in much of the available source material, with some texts emphasising the time differential and yet others explaining that secondary hazards result indirectly from the primary hazard of ground shaking. Impacts such as liquefaction are difficult to place so latitude was permitted.

A further issue is defining severity. A useful framework was environmental, economic (destruction, damage) and social (deaths, injuries) impacts.

Those candidates who concentrated on just two case studies, frequently the broadly comparable (in terms of MM scale), Loma Prieta (1989) and Haiti (2010) earthquakes were unable to make informed, wide-ranging judgements. Equally, whilst it could be claimed that tsunami were rare, but devastating secondary disasters, an analysis of both 2004 Indian Ocean and the 2011 Tohoku events gave more breadth of discussion to an answer. However, both cases were often very muddled as a result of inadequate revision and frequently mixed up. Again, the intrinsic/extrinsic framework is a useful one for evaluating whether primary or secondary hazards are more serious.

Section B
Theme 2: Ecosystems (and Biodiversity)

Although ecosystems remains a very popular option, candidates performance in both questions continues to be very variable.

It can be surmised that a sizeable number of candidates seemed in a ‘catch 22’ situation, having not revised the Arctic Tundra, but also struggling for knowledge and understanding of the concepts and processes of succession. Performance in this option was disappointing.

Q.3 One senior examiner described this question as a ‘marmite’ question. A small number of candidates produced excellent responses, using evidence from fieldwork or their NEA, particularly in the context of psammoseres or hydroseres. High marks were obtained where candidates could combine knowledge of ecosystems at a local scale within the context of succession. The essays showed an excellent knowledge of succession terminology, often demonstrated by an annotated diagram (see mark scheme) showing seral stages in a prisere from pioneer species through to climatic climax, with an evaluation of physical factors arresting climatic climax and leading to subclimax, or the importance of human factors in the formation of a plagioclimax and the degree they influenced the succession process. Some analysed secondary successions which resulted in some quality answers and even considered the positives of human actions (conservation etc.) which influenced their final conclusion.

Many candidates were quite resourceful and ‘dredged up’ a mixture of examples, <u>some</u> of which were local scale such as the colonisation of Surtsey or Krakatoa, or more local scale moors and heathlands, but also included some regional or global scale biome examples such as coral reefs or tropical rainforests. Whilst the succession concept was partially understood, often the examples were <u>not</u> at appropriate scales and therefore middle band marks were achieved.

At the other end, a significant number of candidates achieved minimal marks as they just wrote about ecosystems with no mention of succession, but just a few details of factors such as deforestation or overfishing usually in biomes and the problems facing ecosystems.

Q.4 There were a number of very sound answers from candidates who had revised the Arctic Tundra Biome (ATB). Responses were differentiated by the quality of discussion, in particular the degree to which activities were impacting on the sustainability of the very fragile ecosystem and why the threats might be increasing, and whether the discussions were supported by high quality exemplars such as the impact of climate change, the threats to the sustainable lives of native groups (Inuits, Sami) and activities such as mineral extraction, military bases and tourism. Svalbard proved an interesting exemplar of tourism and ecotourism as did ANWR or Siberia for drilling and Norilsk for smelting.

Many weaker candidates could not define where exactly the ATB is located (often incorrect latitudes and even mention of the South Pole – the use of a map during teaching is recommended) and also failed to provide details of the biome itself, such as low productivity and food webs. There was a very good opportunity, often not taken, to use specialised concepts to discuss Arctic Amplification (by a number of positive feedback loops) as well as permafrost and sea ice decay and the impact of Arctic Greening and biome shift, with its impact on the future of the ATB.

A very useful source is published by the Geographical Association in the TopSpec Geography series by Terry Callaghan which provides even now an excellent source for studying issues in the Changing Arctic.

Theme 3: Economic Growth and Challenge

This theme enables a choice of options from either India, China or development in a sub-Saharan Africa context. The questions for India and China are identical, with those for sub-Saharan Africa broadly parallel as permitted by the specification. The most popular option is sub-Saharan Africa, followed by China and then a minority study India. In all these questions, wider reading on the current state of affairs greatly enhanced performance in all the options, for example, reference to the Modi Plan or China's latest global ambitions (OBOR) or more up to date examples of mineral exploitation or managing the consequences of desertification.

India and China

Questions 5 and 7

Parallel questions were set on the extent to which water availability was an increasingly serious physical constraint on economic development in India or China.

Overall, the quality of the answers was mediocre in both options for a number of reasons.

Most candidates had very insecure knowledge (best taught using maps) of what the water supply situation was within the countries. References to sources of supply, for example, from the large river systems within both countries, was vital.

Very few candidates recognised that the major problem in both countries was one of distribution, largely exacerbated by the pattern of monsoon rainfall across the countries as areas of greatest water supply were not in the areas of greatest demand, for example, in India, rural-urban contrasts, or in China, the North-South problem.

Overall, all candidates were slightly more secure on the details of demand, based on population distribution and various sectors of the economy (agriculture, industry and service activity).

The glaring gap in nearly all answers was the generality of responses with almost no ability to name areas of water deficit, for example, water scarce states in India (e.g. Rajasthan) or North East/Beijing in China. The mark scheme supplies full details of both national levels of water availability in terms of water shortage and stress levels as well as sources of supply and areas of demand.

A further dimension to this question was one of constraint and whether the constraint was increasing. Many candidates wrote that there was clearly no real problem as in both cases the countries were booming (growth rates of between 6 – 10% etc). The impact of the huge size of populations and the growing demands to feed them was barely mentioned, for example, the impact of the Green Revolution in India, or large scale commercial, often irrigated, farming in China leading to over abstraction.

Some candidates did explore issues of water quality in connection with the widespread pollution of supplies which made them hazardous for domestic use in both countries. When discussing whether availability of water supplies was an increasing problem, it was clearly useful to consider what steps were being taken by governments to manage and possibly remedy the situation. Almost no candidates supplied details of schemes in India (at a national and state level) and in China, mentions of even mega schemes such as the Three Gorges Dam or the south-North transfer schemes were surprisingly rare.

Again, the mark schemes provide details of various steps taken to manage water availability. The main reason for modest performance was just a lack of precision and detail.

Questions 6 and 8

Parallel questions were set here on the extent to which soft power is increasingly significant in enhancing the global importance of India and China.

Overall, this question showed a better performance, especially in the China section where the best candidates showed an impressive grasp of current geopolitics, for example, in the south China Sea or OBOR. With India tipped to become an emergent superpower and China already considered to be one by many, clearly the role of soft power was an interesting topic to evaluate.

Many candidates struggled to focus on the question initially as they failed to define either global influence or soft power. Nye's original definition include several elements, participation in global organisations and governance, importance of economic links via trade and FDI and strength of cultural influences and political values, i.e.. all aspects of non-coercive power. This was in contrast to hard military power. Increasingly the distinction has become blurred as many of the China answers explained when analysing the impact of OBOR (now a global scheme). Most candidates were able to support their analysis with a selection of various aspects of soft power.

For India, cultural influences such as Bollywood, food and the impact of the diaspora were frequently cited. For China, it was usually FDI and the OBOR scheme. The role of the two countries in global organisations and governance was less commonly referred to. Many of the upper end answers challenged the statement, mentioning the limitations which hindered the influence of soft power, e.g. for India, how the world's largest democracy was in a very 'delicate' position in its external relations with the world and also held back by internal shortcomings and for China, concern over human rights issues and growing threats of war. Overall performance by many candidates was encouraging and showed how up to date research was supporting their performance.

Development in an African context
Questions 9 and 10

In this very popular option, there was a considerable range in the quality of essay response. Question 9 was more popular than Question 10. Some centres had heeded the advice in last year's report by trying to ensure that all their candidates studied an overview of each topic before 'launching' into detailed case studies from their chosen two or three countries.

Question 9 was a challenging question, which differentiated clearly between candidates and frequently by centre as the quality of teaching and student research made a particularly significant contribution to the standard of response. Better candidates understood the concept of the Resource Curse and how conflict was both a cause and consequence of it. High quality answers were very well exemplified to enable candidates both to agree with the statement (e.g. oil in the Nigerian delta or 'blood' diamonds in Sierra Leone or cobalt and coltan and other rare minerals in D R Congo), or to disagree (e.g. diamonds in Botswana, or HEP in Ethiopia) to provide analytical evaluations.

Weaker responses had little or no understanding of the Resource Curse or conflicts and often used very outdated, inaccurate examples, (e.g. the 'blood' diamonds of Sierra Leone and Angola need an update). Whilst it was a legitimate argument to suggest that successful development of Sub-Saharan African countries could occur in a number of ways, for instance in primary sector agriculture in Kenya or manufacturing in South Africa or tourism in Tanzania, many weaker candidates drifted into long, descriptive case studies of these activities which were of peripheral importance, especially if no details were provided concerning the development of mineral and energy resources. Another issue was overlong introductions on defining development as opposed to interpreting the question.
Many of the weaker candidates exhibited a regrettable lack of knowledge and understanding of the impact of the continent's history or mining development and the role of MNCs or, more recently, China's so called 'neo-colonisation'.

Question 10 was done by a minority of candidates with varying success. Many candidates failed to define desertification in detail as a concept and therefore fell short on an analysis of causes and subsequent consequences. As shown in the mark scheme there are wide ranging causes including physical and human factors. Whilst most candidates had heard of the Great green Wall, many accounts of solutions were brief and frequently inaccurate.

The better answers looked at how consequences and causes were managed using examples from a number of countries at a variety of scales, often looking at smaller scale, bottom-up schemes run by Aid agencies such as Farm Africa.

A much weaker area was the evaluation of success, as a number of factors hindered success, ranging from exacerbation by climate change or the weakness of governance or the failure of agencies to take local cultural and socio-economic needs into account.
As this was a very wide-ranging question, it was not expected that all aspects of it would be tackled in great detail or depth.

Theme 4: Energy Challenges and Dilemmas

This theme is a popular option with many candidates answering the questions confidently and competently. In response to last year's comments, the better candidates had researched up to date examples which were especially useful for Question 11, with details of the impact of the Russia-Ukraine war and the latest COP conference (Sharm El Sheik).

Q.11 The best answers looked at the environmental problems associated with fossil fuels (defined as coal, oil and gas, not peat) at a local scale (pollution from coal, oil spills and increased damage from the need to use unconventional supplies of oil (fracking, tar sands etc) and methane release from the extraction and use of gas, and then went on to consider the global scale of the 'wicked' problem of climate change, now considered to be the 'climate emergency'. The consideration of economic problems was less well done overall but good answers reviewed the finite nature of fossil fuels and the advent of peak oil/peak gas as well as comparing costs of fossil fuels with renewables and recyclables.

On the other hand, the political dimension was very well handled by most candidates with details of the concentrated distribution of both oil and gas resources and the geopolitical power of the cartels such as OPEC or the impact of reliance on Russian gas supplies in the recent Ukraine war which has impacted countries of Europe such as Poland and Germany. In these countries, shortages of supplies and rising prices led to new strategies for energy security.

Conclusions were often astute, with assessments on the time factor or the scale of the problem, or alternatively observing that all the problems were interlinked.

Q.12 Whilst the concept of energy mix was almost universally understood and defined by candidates, some answers suffered from very inaccurate data usage with much confusion between energy use and use for electricity generation. The more sophisticated factorial analysis approach was often better than the 'three case study' approach, which usually featured a LIC (e.g. Ghana), a MIC or EE (usually India) and a HIC (e.g. Iceland or UK).

It was surprising that the Energy Transition Model (see mark scheme) was very rarely used as a framework as it formed an ideal structure for analysis of the impact of level of development. Many other factors were often cited, such as geographical/geological factors influencing availability, the need for security of supply and a range of political, economic or socio-cultural factors or the need for sustainability (see mark scheme).

Very few candidates mentioned national/international legislation, which has a huge impact on future energy mixes with the commitment to Zero Carbon targets. Many candidates rightly concluded that level of development was highly significant as it was an overarching factor influencing many others.

Theme 5: Weather and Climate

Whilst the option is increasingly popular, as with ecosystems there is a need for careful research and learning of concepts.

Q.13 Overall, this question was the more popular of the two questions, but with a wide disparity of performance. The main problem (not envisaged) was that many candidates were not able to distinguish between weather and climate and therefore provided much irrelevant information on factors influencing the UK's climate, such as latitude or maritime/continental influences or ocean currents. Weather is concerned with day-to-day short-term changes to atmosphere conditions. Whilst the jet stream is a complex concept, it is increasingly being used (as it always has been in the USA) by the Met Office to explain UK weather patterns. The Met Office provide some excellent videos and other teaching materials online which aid the teaching of this topic.

Some candidates produced very good and accurate analysis of the role of the Polar Front Jet Stream (PFJS) as a major influence on UK weather. They supported their essays with excellent diagrams (see mark scheme) showing the impact of the jet stream on weather systems, as well as explaining the impact of both its position and pattern on the weather, often supported by useful examples such as droughts, heatwaves (1976) or the Beast from the East (intense cold spell) or Tropical storms series with periods of flooding. The best answers showed the interlinkage between the PFJS and weather systems and air masses. Additionally, they explored other factors, often more local, such as altitude or the impact of large urban areas and some even speculated on the impact of climate change (Arctic amplification) which could decrease temperature differentials at the polar front leading to a more meandering wave pattern and extreme weather for the UK. Conversely, there were a number of very poor answers which had very limited knowledge and understanding of PFJS and wrote about any other factor of which they had some knowledge, such as the Gulf Stream.

Q.14 There were two major problems here. Firstly, the question requested knowledge and understanding of hazards (more than one) associated with high-pressure systems and quite a number of candidates wrote on just droughts - the addition of heatwaves and/or wildfires was acceptable here, although there are many examples listed in the mark scheme. Secondly, a significant minority of candidates got very muddled and wrote on just low-pressure hazards such as storms/floods or a combination of both. Both of these factors will have impacted on the mean mark and led to disappointing levels of performance.

In terms of focusing on the answer, clearly the impact of short-term climate change (global warming) or possibly ENSO will have had huge impacts on management by increasing the severity, frequency and the spatial spread of many hazards leading to increased risk. Yet many of the hazards can be successfully managed with growing impact of a range of solutions, especially techno-fixes in HICs, especially for smaller scale hazards such as fogs and frost.

In some of the successful answers there was exemplar support with extended examples and mini case studies, such as a comparison of droughts in Ethiopia, Australia and the UK combined with heatwaves and forest fires.

Summary of key points

Candidates should:

- Carry out individual research to bring each theme up to date – latest hazards, key reports, e.g. on biodiversity, latest technological innovations in, for example, earthquake and volcano prediction and monitoring or changing economic activity in Africa, China (OBOR) or India.
- Take opportunities to develop their essay writing skills, paying attention to style, structure, introduction, conclusion, paragraphs etc, with a brief plan before they start. This last feature has improved since last year, but sometimes plans were as long as the essay.
- Make themselves familiar with the concepts embedded in the specification as all questions will be based on this.
- Develop their geographical terminology – a particular problem in Ecosystems.
- Be familiar with specialised concepts such as feedback loops.

- Develop case study fact files and really think how they could be used within essays by reading beyond standard textbooks which are now becoming dated. Many candidates used these case studies very tangentially.
- Get a suitable pen and work on improving the legibility of their handwriting and practising writing at speed. With many candidates using computers for regular homework, examiners reported illegibility as an increasing problem which may impact the marks awarded.

GCE GEOGRAPHY

GCE A LEVEL

Summer 2023

COMPONENT 4: INDEPENDENT INVESTIGATION

General Comments

Once again it was pleasing to see a variety of interesting and mostly appropriate investigations being undertaken by candidates, the majority of which were clearly linked to the specification.

Though centre administration of samples was mostly excellent, several issues continue to arise. These are:

- Failure to complete the correct proposal forms (centres must use the proposal form available electronically via the subject website).
- Failure to annotate accurately or provide clarity of how marks have been awarded.
- Failure to ensure candidate and/or teacher signatures have been included on authentication sheets where required.
- Mathematical or mark transfer inaccuracies.
- Failure to ensure titles are appropriate for the candidates. Some centres allowed titles to be attempted that were not appropriate to the specification or were too complex for the capability of the candidates. Many titles were temporal, considering change of a location through redevelopment etc. but then lacked the appropriate data and simply focused on a snapshot in time thereby failing to answer any of the sub-questions posed. Centres should be making use of the Title Approval Service where there is any doubt as to the validity of the title.

Candidates would find it helpful if they identified, at the planning stage, specific focus point from the specification, such as '3.2.10 – Marine pollution and plastic waste' rather than just 'Global Governance'. Such focus allows candidates to identify the relevant bullet points which then drive the data collection process.

There was evidence that candidates were being allowed to attempt topics that were too broad and not achievable e.g., 'How does biodiversity vary along the North Wales coast's sand dunes?', or 'How has COVID-19 impacted the retail patterns in Cardiff compared to Newport?'. Some were outdated e.g. focusing solely on models such as Burgess or Hoyt as a basis for a 21st-century investigation. Topics related to the impacts of COVID, or online shopping are often difficult to assess, as there is often little data that is accessible. Candidates also use expressions such as 'to what extent` or 'what are the effects of' in their titles, but often forget to come back to those key words 'extent' and 'effects' during their discussions.

Once again it was noted that many investigations were considerably over length, the longest seen consisted of 152 pages and over 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. Securing manageable and focused investigation titles for each candidate, through detailed discussion at the outset could greatly assist this process.

Comments on individual questions/sections

Context

Nearly all candidates had sub-questions or hypotheses, which in most cases were relevant to the research question. A number of candidates did not match their data collection to the sub-questions identified. Application of theory still appears to be an aspect of the investigation that many candidates have difficulty with; often just giving some generic background that bears little reference to theory or context.

The use of literature is gradually improving; however, many still have little idea about how to use literature sources. Literature reviews were used by some, while most had a list of literature sources in their appendix, these were mostly references to web sites, such as Wikipedia and Google. The best candidates made excellent use of literature throughout their work, with relevant sources clearly identified in the text, using a recognised system such as Harvard.

Most had clear reference to risk assessments, but they did tend to be generic in nature. Ethics was much weaker and in many candidates was absent. Locational context was frequently poorly developed, while at the other end of the scale it escalated into pages of somewhat unnecessary text.

Methods of Field Investigation

It was noted that some centres still appeared to feel challenged by the impacts of COVID-19, relying very heavily on the use of secondary data, which did not always deliver the required results. It is good practice to include copies of data collection sheets such as questionnaires and environmental quality surveys, which in turn can be annotated to clarify what is being attempted. Some centres encouraged candidate to complete pilot studies which then allowed methods to be adapted more closely to the data required.

Better candidates clearly linked their methods to their sub-questions using a comprehensive table. This allowed for clear description, justification, discussion of relevant sampling strategies and in some cases evaluation. Many candidates used methods of data collection that were not mentioned in their methodology, which suggests a lack of thorough planning.

The best candidates had a good range of varied methods that were clearly aimed at collecting data to allow them to answer their sub-questions. These methods were well described, replicable and clearly justified. Weaker candidates had a limited range, often only two or three, that did little to answer their questions and tended to reflect attempts by centres to shoehorn their standard fieldwork days into the NEA. It was disappointing to note that poor descriptions of methods seemed to be on the increase, with many lacking justifications.

The main weakness with this section was sampling, a requirement of the mark scheme. Most candidates made brief statements and there was clear misunderstanding of strategies, particularly random sampling, when opportunistic sampling would have been more appropriate. Justification of the chosen sampling strategy was often missing or limited. To access Band 5 candidates are required to have a ”*sampling strategy that is well designed, explained and justified. The strategy is wholly appropriate to the investigation*.”

Data Presentation and Findings

This was possibly the most disappointing aspect of this year's cohort with what appeared to be a deterioration in general standards. Centres are reminded that their candidates need to be made aware of the requirements of Band 5. Wide ranging does not mean over-reliance on bar charts, line graphs or pie charts. In many instances centres over credited this section.

Digital maps were very poorly used, frequently lacking the necessary protocols, i.e., scale, north point, heading and where appropriate a key. These were often too small to be meaningful and lacked clarity due to reduction in size. To be valuable a location map needs to show where data was collected.

As noted last year it was disappointing to see that many candidates did not make use of more sophisticated methods of data presentation. Good examples might include, well annotated and located photographs, data located on maps, e.g., photographs, graphs, proportional circles, and cross sections. Many candidates need to be educated into how beach/dune profiles, kite diagrams, and pedestrian flows should be drawn. All graphs should have axes appropriately labelled and given clear headings. Graphs were also used incorrectly, e.g., line graphs are used for quantitative data and bar graphs for qualitative data, a fact that often confuses candidates.

It should be noted that the reproduction of maps and diagrams solely from secondary sources cannot be credited as they are not the work of the candidate.

Analysis and Interpretation of Findings

Centres are reminded that to achieve Band 5 marks candidates are required to give a sophisticated analysis and interpretation of findings, clearly showing why they were appropriate and relevant to the research question. The best candidates also reflect on their theory, secondary data, and literary review.

The most competent candidates produced a successful analysis which cross referenced geographical theory and individual research to a high standard, compared data sets, and used statistical measures to develop their findings further. In addition, candidates who organised their work under clearly defined sub-questions for data presentation and analysis tended to produce a more focused analysis, often cross referencing their primary and secondary data with skill, whilst linking to the relevant sub-question. The use of relevant statistical techniques assisted the quality of analysis, and this was often evidenced in the centre marks awarded.

In contrast the work of many candidates was very descriptive, with limited consideration of data presented. Where findings were integrated within the analytical context the interpretation was much more effective and focused. It also helped to reduce the word count. Many middle range candidates who attempted statistical analysis often had insufficient data, for example Spearman with less than ten pairs of data, and questionnaires that were limited in sample size, e.g., five questionnaires.

In the weakest investigations the tendency was to methodically describe each graph while some placed their data presentation in the appendix where, if not referred to, it became difficult to credit. This in turn might impact upon marks awarded for structure. In these cases, candidates were unable to develop analysis that supported their sub-questions and overall investigation.

Conclusions and Presentation Requirements

Candidates should be reminded that to access Band 5 marks candidates must have a sophisticated and confident summary that draws thorough conclusions which address the research question and is underpinned by relevant theory. At the same time they must present a well-structured, concise, and logical report that accurately references secondary information.

Confident conclusions were effective in drawing the investigation to a close, linking the findings to sub-questions and the research title. For some the conclusions repeated much from the analysis and introduced new data, which was not always relevant. They lacked conciseness and were often not substantiated. While sub-questions were covered, elements such as assess, contrast and effect, in the title were often ignored.

Returning to the suggested word guidance, candidates should be reminded that producing work that is seriously over this guidance can lead to a lack of conciseness, limiting marks. It should be noted that Bands 4 and 5 require concisely worded investigations.

Evaluation

Candidates should be reminded that to achieve Band 5 marks they must produce a highly effective evaluation of the knowledge and understanding gained from field observation. They must have a perceptive evaluation of each stage of the fieldwork investigation including the ethical dimensions of the field research; have perceptive and well-considered reflections of further research and extension of their geographical understanding.

It was good to note that candidates are starting to gain a better understanding of what is required for this section, however, it is better to evaluate all aspects of the investigation rather than tackle it sub-question by sub-question as some candidates did.

Many candidates appeared to assume that since this section has the highest number of marks available, they had to write at great length, rather than focusing on the quality and depth of reflection. The focus was mostly on how to improve data collection methods rather than reflecting on the planning and findings. Consideration of the validity and reliability of the knowledge gained could be much stronger and there is still scope to develop ideas for improvements, further research and extension of their geographical knowledge. This section tended to be overmarked by centres.

Summary of key points

Candidates should ensure that they

- have a clear concise title, linked to the specification, 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.
- 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.
- give further consideration to the validity and reliability of the knowledge gained.

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