National
Qualifications
2022

2022 Geography

Physical and Human Environments

Higher

Finalised Marking Instructions

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General marking principles for Higher Geography

Always apply these general principles. Use them in conjunction with the detailed marking instructions, which identify the key features required in candidates' responses.

(a) Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.

(b) If a candidate response does not seem to be covered by either the principles or detailed marking instructions, and you are uncertain how to assess it, you must seek guidance from your team leader.

(c) Where the candidate does not comply with the rubric of the paper and answers two parts in one section, mark both responses and record the better mark.

(d) Marking must be consistent. Never make a hasty judgement on a response based on length, quality of handwriting or a confused start.

(e) Use the full range of marks available for each question.

(f) The detailed marking instructions are not an exhaustive list. Award marks for other relevant points.

(g) Award marks only where points relate to the question asked. Where candidates give points of knowledge without specifying the context, award marks unless it is clear that they do not refer to the context of the question.

(h) Award marks for knowledge/understanding where points are:
- relevant to the issue in the question
- developed (by providing additional detail, exemplification, reasons or evidence)
- used to respond to the demands of the question (e.g. evaluate, analyse).

Marking principles for each question type
There is a range of question types in this question paper. For each question type, the following provides an overview of marking principles, and an example.

Describe **questions**
Candidates gain marks for making relevant, factual points. These should be key points.
The points do not need to be in any particular order. Candidates may provide a number of straightforward points or a smaller number of developed points, or a combination of these. Candidates must provide more than an outline or list to gain marks. They could refer to, e.g., a landscape feature, a landscape formation process, a situation or facts demonstrating geographical knowledge.

Explain **questions**
Candidates gain marks for explaining or suggesting reasons for the cause or impact of something, or for referring to causal connections and relationships. Candidates must do more than describe to gain marks here.
- Where the question asks about a landscape feature, candidates should refer to the processes leading to landscape formation.
- For a source-based question, candidates should make use of these and refer to them within their answer for full marks.

Where candidates provide a purely descriptive answer, or one where development is limited, award no more than half the available marks for the question. Other questions look for candidates to demonstrate higher-order skills and will use command words such as analyse, evaluate, to what extent, and discuss.

***Analyse* questions**
Candidates gain marks for identifying parts, the relationship between them, and their relationships with the whole; and for drawing out and relating implications. Award an analysis mark where candidates use their knowledge and understanding or a source to identify relevant components (e.g. of an idea, theory, argument) and clearly show at least one of the following:

- links between different components
- links between component(s) and the whole
- links between component(s) and related concepts
- similarities and contradictions
- consistency and inconsistency
- different views or interpretations
- possible consequences or implications
- the relative importance of components
- understanding of underlying order or structure.

Where candidates are asked to analyse they should identify parts of a topic or issue and refer to the interrelationships between, or impacts of, various factors. E.g., where a question asks for an analysis of the soil-forming properties which lead to the formation of a gley soil, candidates should refer to how the various soil formatting properties contributed to its formation.

***Evaluate* questions**
Candidates gain marks for making a judgement of the success, failure, or impact of something based on criteria. They should give a brief description of the strategy or project being evaluated, before offering an evidenced conclusion.

***Account for* questions**
Candidates gain marks for giving reasons which are often (but not exclusively) from a resource, e.g.: for a change in trade figures; a need for water management; or differences in development between contrasting developing countries.

***Discuss* questions**
Candidates gain marks for exploring ideas about a project, or the impact of a change. They should consider different views on an issue or argument. This might not be a balanced argument, but they should give a range of impacts or ideas within their answer.

***To what extent* questions**
Candidates gain marks for considering the impact of a management strategy or strategies they have explored. They should give a brief description of the strategy or project being evaluated, before offering an evidenced conclusion. They do not need to offer an overall opinion based on a variety of strategies, but should assess each separately.

Marking instructions for each question

Section 1 — Physical Environments

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
1.			Check any diagram(s) for relevant points not present in the text and award marks accordingly. Candidates can gain full marks for well-annotated diagrams that explain the formation of an arête. Award **a maximum of 1 mark** where candidates provide a list of unexplained processes with at least two processes required for this mark. Award **a maximum of 6 marks** where candidates provide fully developed processes (up to **2 marks** per developed process). Award **1 mark** for each named process, where a basic explanation has been given. An additional mark can be awarded for further development. Award **a maximum of 2 marks** for the formation of a glacier. Award **a maximum of 1 mark** for a correctly named example of an arête. Award **a maximum of 9 marks** for answers which do not develop past the development of a corrie.	**10**	**Points may include:** **Glacier formation includes:** • snow accumulates in north facing hollows **(1 mark)** when more snow falls in winter than melts in the summer **(1 mark)** • north/north-east facing slopes are more shaded so snow lies longer **(1 mark)** with accumulated snow compressed into névé/glacial ice. **(1 mark)** **Processes include**: • plucking when ice freezes on to bedrock pulling loose rocks away from the backwall **(2 P marks)** • abrasion when the angular rock embedded in the ice grinds the hollow as the glacier moves **(2 P marks)** • frost shattering/freeze thaw weathering when water in cracks in the rock freezes, expands and contracts weakening the rock until fragments break off. **(2 P marks)** **Arête:** • glacier moves downhill due to gravity/weight **(1 mark)** • rotational sliding over deepens the hollow **(1 mark)** • an arête is formed when two corries erode back towards each other **(1 mark)** • frost shattering can make the ridge more pronounced **(1 mark)**, and can cause scree slopes to develop **(1 mark)** • an example of an arête is Striding Edge**. (1 E mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
2.			Check any diagram(s) for relevant points not present in the text and award marks accordingly. Candidates can gain full marks for well-annotated diagrams that explain the formation of a stack. Award **a maximum of 2 marks** where candidates provide a list of unexplained processes with at least two processes required for each mark. Award **a maximum of 6 marks** where candidates provide fully developed processes (up to **2 marks** per developed process). Award **1 mark** for each named process, where a basic explanation has been given. An additional mark can be awarded for further development. Award **a maximum of 1 mark** for a correctly named example of a stack. Award a maximum of **9 marks** for answers which do not develop beyond the development of cave/arch.	**10**	**Erosional processes:** • hydraulic action – pounding waves compress trapped air in the rocks creating an explosive blast which weakens and loosens rock fragments **(2 P marks)** • abrasion/corrasion – rock fragments thrown against the headland breaking down the cliff face, wearing away the rock **(2 P marks)** • solution/corrosion – carbonic acid/salts in sea water dissolves rock **(2 P marks)** • attrition – rock fragments slowly being ground down by friction from wave action into smaller and rounder pieces which can then be used as an abrasive material. **(2 P marks)** **Stack:** • rocks contain weak points that are more easily eroded **(1 mark)** • over time, lines of weakness are enlarged and develop into small sea caves **(1 mark)** • in some cases, a blowhole can form in the roof of the cave **(1 mark)** as compressed air is pushed upwards by the power of the waves, causing vertical erosion **(1 mark)** • there may be erosion on both sides of the headland **(1 mark)** due to wave refraction **(1 mark)** until eventually the sea cuts through the back walls of the caves, forming an arch **(1 mark)** • continued erosion enlarges the arch **(1 mark)** • the base of the arch is also undercut by the erosion, causing the arch to become unsupported **(1 mark)** • eventually the arch collapses due gravity to form a stack **(1 mark)** Old Harry is an example of a stack**. (1 E mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
3.			A well annotated diagram could achieve full marks. Award **1 mark** for each process/stage where a basic understanding is demonstrated. Additional marks can be awarded for further development.	**8**	**Points may include:** • the main input is precipitation through e.g. rain and snow **(1 mark)** • water vapour can be evaporated due to heat from the sun **(1 mark)** • when water vapour is lost to the atmosphere from vegetation it is called transpiration **(1 mark)** • advection moves clouds/water vapour inland **(1 mark)** • water vapour in the atmosphere can condense into water moisture **(1 mark)** • this will form clouds which when big enough produce precipitation **(1 mark)** • rainwater can be intercepted by vegetation slowing down the movement of water **(1 mark)** • it may also be stored on the surface in different volumes from puddles to lakes **(1 mark)** • water may move over the surface or the land as overland flow/sheet wash **(1 mark)**, • or flow into the soil in a process called infiltration **(1 mark)** • water can move downhill through the soil which is called throughflow **(1 mark)** • water may then percolate into the rocks below the soil **(1 mark)** • it can then flow through the rocks as groundwater flow **(1 mark)** • or be stored in the rocks as groundwater storage (the water table)**. (1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
4.			Award **1 mark** for each explanation. Candidates should be credited for answers which refer tundra and alpine gleys.	**8**	**Points may include:** • limited vegetation produces a thin acidic organic layer/mor humus **(1 mark)** low temperatures cause a slow rate of decomposition **(1 mark)** • heavy precipitation/snow melt causes waterlogging**. (1 mark)** Found on flat surfaces as relief can cause drainage problems**. (1 mark)** Impermeable clays can impede drainage **(1 mark)** • waterlogged soil creates anaerobic conditions **(1 mark)**, meaning iron compounds are changed from red brown to blue **(1 mark)**, due to oxygen being extracted by microorganisms **(1 mark)** • cold temperatures/waterlogged conditions mean few organisms can survive **(1 mark)** • limited biota reduces mixing causing clearly defined layers **(1 mark)** • burrowing animals/soil drying out in summer leave oxygen pockets **(1 mark)** this allows re-oxygenation of the iron **(1 mark)** in the soil causing a red mottling effect **(1 mark)** • shallow roots limit the recycling of minerals. **(1 mark)** • Freeze-thaw takes place causing vertical mixing **(1 mark)** causing large chunks of angular rock to be brought up to the A and B horizons. **(1 mark)** **Or any other valid point**.

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
5.	(a)		Award **a maximum of 3 marks** for each air mass. For each air mass, award **1 mark** where candidates provide the origin and **2 marks** for any weather characteristics. Do not award marks for origin over sea (X) or land (Y).	**6**	**Maritime tropical (mT):** • origin – Atlantic Ocean/Gulf of Guinea **(1 mark)** • weather characteristics – warm/hot, **(1 mark)** unstable air **(1 mark)** with high humidity, **(1 mark)** high precipitation. **(1 mark)** **Continental tropical (cT):** • origin – Sahara Desert **(1 mark)** • weather characteristics – hotter/very hot, **(1 mark)** low precipitation, **(1 mark)**, stable air **(1 mark)** with low humidity. **(1 mark)** Poor visibility caused by dust carried from the desert. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
5.	(b)		Award **a maximum of 5 marks** for either description or explanation. Award **1 description mark** for each comparison. Candidates should highlight the marked contrast in precipitation totals, seasonal distribution. Candidates may answer each command separately or as a holistic answer. Award marks accordingly.	**8**	**Descriptions may include:** • the north is very dry with a much wetter south**. (1 mark)** Timbuktu has an annual rainfall amount of less than 250mm whereas Bamako has just under 1000mm a year on average **(1 mark)** • Bamako has a clear wet/dry season regime whereas Abidjan has year-round rainfall**. (1 mark)** Timbuktu has 6 months with no rainfall, whereas Bamako has only 4 months **(1 mark)** • Abidjan has a twin-peak regime whereas the other areas have only one peak **(1 mark)** • Abidjan's peak rainfall is in June, whereas it is August in Timbuktu **(1 mark)** • Abidjan has a peak of 375 mm whereas Timbuktu's is approximately 80 mm. **(1 mark)** Explanations should focus on the role of the intertropical convergence zone (ITCZ) and the movement of the Maritime tropical and Continental tropical air masses over the course of the year. E.g.: • the ITCZ is an area of low pressure where the trade winds/air masses meet **(1 mark)** pushing the maritime air up, cooling and condensing to form clouds **(1 mark)** • the twin precipitation peaks can be attributed to the ITCZ moving northwards in the early part of the year **(1 mark)** in line with the thermal equator/overhead sun **(1 mark)** • Abidjan on the coast is influenced by the wet mT air for most of the year. **(1 mark)** Timbuktu, on the other hand, is under the influence of the dry cT air for most of the year. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
6.			Award **1 mark** for each explanation. Named examples will enhance a candidate's answer, with **a maximum of 2 marks** for relevant examples.	**12**	**Problems of gathering population data:** • countries with many official languages have to translate their census forms **(1 mark)** and employ enumerators who can speak multiple languages **(1 mark)** • many people can't read and write and therefore are unable to complete the forms **(1 mark)** or might make mistakes unintentionally leading to inaccuracy **(1 mark)** • the poor infrastructure and difficult terrain **(1 mark)**, e.g. in the Amazon Rainforest **(1 E mark)**, may make it difficult for enumerators to distribute census forms **(1 mark)** • conflict can make it too dangerous for enumerators to enter parts of a country **(1 mark)**, or for data to quickly become dated **(1 mark)** • undertaking a census is a very expensive process. **(1 mark)** In developing countries, there may be higher priorities for spending, including housing **(1 mark)** • rapid rural to urban migration, can make it difficult to gather accurate population data **(1 mark)** • many people in developing countries may be living in informal housing, so have no official address **(1 mark)** e.g., Dhararvi **(1 E mark)** • people who are illegal immigrants are unlikely to complete a census **(1 mark)** for fear of deportation, leading to inaccurate data **(1 mark)** • nomads/shifting cultivators can be easily missed or counted twice **(1 mark)** e.g., the Tuareg/Fulani/Bedouin **(1 mark)** • ethnic tensions and internal political rivalries may lead to inaccuracies **(1 mark)**, e.g., northern Nigeria **(1 E mark)** was reported to have inflated its population figures to secure increased political representation. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
7.			Award **1 mark** for each explanation. Care should be taken not to credit direct reversals. Where candidates give generic answers which do not refer to a specific case study, **a maximum of 5 marks** should be awarded.	**6**	Possible answers for Poland to Scotland may include: **Push factors:** • not enough jobs with very few opportunities. **(1 mark)** E.g., until 2019 the unemployment rate in Poland was high **(1 mark)** • low paying jobs resulting in a low standard of living **(1 mark)** • state benefits are very low compared to Scotland and the UK **(1 mark)** • due to increased mechanisation/privatisation of farms rural unemployment has risen. **(1 mark)** **Pull factors:** • until 2020 unlimited migration within the EU allowed Polish migrants to move freely **(1 mark)** • the exchange rate meant that the sterling conversion into zloty was favourable **(1 mark)** and meant that people could send money back to family members in Poland **(1 mark)** • there were plenty of available jobs in parts of the economy in Scotland, such as in construction **(1 mark)** • employers advertised vacancies in Poland for jobs in Scotland **(1 mark)** • healthcare in Scotland is free at the point of delivery. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
8.	(a) and (b)		Award **1 mark** for each description of a strategy. Award **a maximum of 2 marks** where candidates provide a list of basic, unexplained points with at least two required for each mark. Award **1 mark** for a named example of a strategy. **A maximum of 9 marks** should be awarded for either part (a) or (b). Candidates may choose to answer holistically and answers should be marked accordingly. Where candidates give generic answers, which do not refer to a specific case study, award **a maximum of 9 marks**.	**10**	**For Rio de Janeiro, strategies may include**: • Favela clearance was initially used by the local government prior to the 2016 Olympic Games **(1 mark)** • self-help schemes use the skills of local people **(1 mark)** e.g., Favela Bairro **(1 E mark)**. Much of the housing has been upgraded with concrete and bricks**. (1 mark)** Many houses have been connected to metered electricity. **(1 mark)** Pacification introduced community police forces into some favelas. **(1 mark)** Improved refuse collection improves the environment **(1 mark)** • site and service schemes are brick homes built by the local government **(1 mark)** installing pipes to provide sanitation and water supplies **(1 mark)** Residents were given the right to buy after initially renting. **(1 mark)** Streets are wider to allow access for emergency services/waste lorries **(1 mark)** • roads have been paved and given formal addresses. **(1 mark)** **Effectiveness may include:** • it was soon realised that slum clearance was not effective and that people would simply move to another location and begin again **(1 mark)** • self-help schemes, are much more effective as it gives residents a sense of ownership **(1 mark)** and improves the community spirit through working together. **(1 mark)** This is a cheaper alternative to brand new housing areas. **(1 mark)** the Favela Bairro project has been successful as the money from rents has allowed other favelas to be developed. **(1 mark)** However, it does not help families without jobs who cannot afford to pay rent. **(1 mark)** It is only the smaller favelas (500-2500) which have been a focus for this investment **(1 mark)** • Pacification was not totally successful because the police were accused of violent behaviour. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
9.			Award **a maximum of 1 mark** for a specific named example of a tribe, city, region within a country or event. Award **1 mark** for each valid point. Where candidates give generic answers, which do not refer to a specific case study, award **a maximum of 9 marks**.	**10**	**For the Sahel, answers may include:** • loss of fertile topsoil through water or wind erosion **(1 mark),** leading to the inability of the land to support vegetation **(1 mark)** • when crops fail/livestock die off food supply is reduced **(1 mark)** leading to malnutrition and famine **(1 mark)** • rural migration into overcrowded urban areas in the south of the Sahel **(1 mark)** has caused more pressure on the growth of shanty towns **(1 mark)** • the collapse of the nomadic way of life due to the lack of grazing and water **(1 mark)** forcing many nomads to settle in villages increasing pressure/tension in these areas **(1 mark)** • farmers have lost their income as a result of poor crop yields **(1 mark)** meaning they can no longer afford to pay for their basic needs, such as schooling **(1 mark)** • conflict over land/resources as people are forced to move **(1 mark)** and re-settle – growth of large refugee camps **(1 mark)**, e.g., Darfur **(1 EG mark)** • some Sahelian countries are becoming increasingly reliant on international aid to gain access to food and water **(1 mark)** impacting development as debt repayments are high **(1 mark)** • desertification has become so severe that it has led to the southward expansion of the Sahara Desert into the Sahel. **(1 mark)** In the last 50 years, 65 million hectares of the Sahel have turned into desert. **(1 mark)**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
					For the Amazon Basin, answers may include: • RLD can lead to destruction of the way of life of the indigenous people **(1 mark)** e.g. the Yanomami **(1 eg mark)** • it can also lead to the destruction of sustainable development of rubber plantations **(1 mark)** • the creation of reservations for indigenous people who have lost their land **(1 mark)** has contributed to an increase in 'western' diseases and alcoholism **(1 mark)** • it has an adverse effect on the nutrient cycle in the rainforest due to a lack of leaf litter **(1 mark)** reducing the fertility of the soil affecting crop production. **(1 mark)** • the top soil can be removed due to increased surface run-off, **(1 mark)** resulting in the silting up of rivers **(1 mark)** • heavy rain can infiltrate the soil leading to leaching **(1 mark)** • the loss of biodiversity with danger of extinction. **(1 mark)** **Or any other valid point.**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
10.			Award **1 mark** for each relevant point. If candidates discuss more than one area, mark all and award marks to the highest scoring area. Award **a maximum of 2 marks** for specific named examples within the chosen area. **A maximum of 11 marks** should be awarded if the answer does not clearly relate to a specific case study.	**12**	**For the Lake District, points may include:** • traffic congestion on narrow rural roads **(1 mark)** leads to high levels of air and noise pollution **(1 mark)** • tourists park on grass verges leading to erosion **(1 mark)** e.g. Bowness **(1 EG mark)** • tourists wander off footpaths widening them **(1 mark)** and stone walls can be damaged by people climbing over them **(1 mark)** • litter if eaten by wildlife or livestock can harm or kill **(1 mark)** • tourists leave gates open causing farm animals to escape **(1 mark)** • dogs off leash can worry sheep leading to miscarriages **(1 mark)** this will reduce the farmers income **(1 mark)** • speedboats on lakes can erode beaches **(1 mark)** and oil from engines can harm aquatic life **(1 mark)** • quarrying can produce large quantities of dust **(1 mark)** e.g. Shap Beck Quarry **(1 eg mark)** which can settle on plants stunting their growth **(1 mark)** • this can also lead to visual pollution in spectacular landscapes **(1 mark)** • tourists buying second homes pushes prices up for locals **(1 mark)** and can lead to rural depopulation, **(1 mark)** which can reduce demand for local services which may close. **(1 mark)** **Or any other valid response.**

[END OF MARKING INSTRUCTIONS]