National
Qualifications
RESOURCE

X833/76/11

Geography
Physical and Human Environments

Marking Instructions

Please note that these marking instructions have not been standardised based on candidate responses. You may therefore need to agree within your centre how to consistently mark an item if a candidate response is not covered by the 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 (for example 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, for example, 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 (for example 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. For example, 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, for example: 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

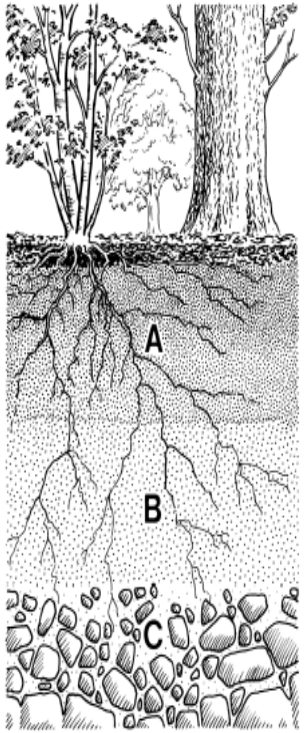
Section 1 — Physical environments

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
1.			Credit an explanation of the formation of a glacier to **a maximum of 2 marks.** Check any diagram(s) for relevant points not present in the text and award marks accordingly. Well-annotated diagrams that explain conditions and processes can gain full marks. Award **a maximum of 6 marks** for three fully developed processes (up to **2 marks** for each process). Award **1 mark** for a correctly named example.	**10**	**Glacier formation includes** • snow accumulates in north facing hollows **(1 mark)** when more snow falls in winter than melts in the summer. **(1 mark)** **OR** • north/north-east facing slopes are more shaded, **(1 mark)** so snow lies longer with accumulated snow compressed into ice. **(1 mark)** **Processes include** • plucking is when ice freezes on to bedrock **(1 mark)**, pulling loose rocks away from the sides **(1 mark)** • abrasion, when the angular rock embedded in the ice **(1 mark)** grinds the valley floor, making it deeper **(1 mark)** • frost shattering is when water in cracks in the rock freezes **(1 mark)**, expands and contracts weakening the rock until fragments break off. **(1 mark)** **U-shaped Valleys** • gravity causes the glaciers causes them to flow downhill, **(1 mark)** following existing V-shaped valleys **(1 mark)** • former interlocking spurs **(1 mark)** may be cut off by the glacier as it flows downhill leaving truncated spurs **(1 mark)** and steep valley sides **(1 mark)** • the width and shape of the resulting glacial trough will depend on the nature of the rock type **(1 mark)** and the intensity and weight of the glacial and its erosion **(1 mark)** • the valley becomes wider and straighter, **(1 mark)** often with a misfit stream which no longer fits the valley floor **(1 mark)** • for example, Glencoe. **(1 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 terminal moraine	**6**	**For a terminal moraine** • terminal moraine is a ridge across the valley **(1 mark)** and made up of glacial deposits/till/boulder clay **(1 mark)** which is unsorted **(1 mark)** • as the glacier moves downhill it acts like a bulldozer **(1 mark)**, pushing sediment in front of its snout as it goes **(1 mark)** • on reaching lower altitudes/or when temperatures rise, the glacier melts **(1 mark)**, losing power and depositing the moraine **(1 mark)** • terminal moraine marks the furthest point that the glacier reaches. **(1 mark)** Once the ice has retreated, the terminal (or end) moraine can often form a natural dam, creating a ribbon lake. **(1 mark)** **For an esker** • eskers are meandering ridges along a valley floor **(1 mark)** formed by meltwater streams in/or underneath a glacier **(1 mark)** • they are made up of meltwater sands and gravels. **(1 mark)** These are sorted by size **(1 mark)** because heavier stones are dropped first by flowing water **(1 mark)** • the stones also tend to be more rounded than glacial deposits **(1 mark)**, because of the action of flowing water rounding the edges by erosion **(1 mark)** • on reaching lower altitudes/or when temperatures rise, the glacier begins to melt **(1 mark)**, and sub-glacial streams deposit in the tunnels. **(1 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) and (b)		Candidates must include both descriptions and explanation for full marks. Award **a maximum of 5 marks** for descriptions. Candidates may answer each command separately or as a holistic answer. Award marks accordingly.	**10**	**Descriptions may include** • there is a lag time of one hour **(1 mark)** • there is a no rise in discharge until 10:00 **(1 mark)** • there is a gentle rising limb until 12:00 **(1 mark)** when the rising limb becomes steeper until 13:00 **(1 mark)** • the discharge then falls to 7 cumecs at 14:00 **(1 mark)** • it then rises steeply to a peak discharge of 27 cumecs **(1 mark)** • there is a steep recession limb from 16:00 until 18:00. **(1 mark)** **Explanations may include** • the initial rain may have been intercepted by vegetation **(1 mark)** • the water may also have infiltrated and be stored in soil **(1 mark)** • the decrease in rain at 13:00 will have led to the initial drop **(1 mark)** • the heavy rainfall at 15:00 will have led to the high peak **(1 mark)** • the river rises because soil storage has been exceeded **(1 mark)** • there may be a high number of tributaries transporting water to the channel quickly **(1 mark)** • it may be a small catchment area meaning less travel time to the main channel **(1 mark)** • the catchment area may be steeply sloping leading to faster initial overland flow **(1 mark)** • the area may have impermeable surfaces leading to overland flow **(1 mark)** • there may be a drainage system transporting water quickly **(1 mark)** • the recession limb is due to the lack of rainfall after 16:00. **(1 mark)**

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
4.			Check any diagram(s) for relevant points not present in the text and award marks accordingly. Well annotated diagrams that contain conditions and processes can gain full marks. Award **a maximum of 4 marks** for two fully developed processes (up to 2 marks for each process). Award **a maximum of 6 marks** if candidates only explain the formation of a meander.	**8**	**Processes** • hydraulic action which is when the force of the water compresses air **(1 mark)** and pressure on the river bank causes materials to be dislodged **(1 mark)** • abrasion is when the force of the water throws bedload **(1 mark)** against the banks wearing them down **(1 mark)** • solution is when soluble rocks **(1 mark)** react with acids or salts in the water **(1 mark)** • attrition occurs when rocks in suspension **(1 mark)** hit off each other eroding further. **(1 mark)** **Explanation may include** • in a straight river channel, water twists and turns around obstructions such as large boulders **(1 mark)** • resulting in areas of slower and faster water movement, as the river starts to become more sinuous **(1 mark)** • riffles and pools lead to changes in speed and depths in the river channel **(1 mark)** • pools are areas of deeper water whereas riffles are shallower with greater turbulence **(1 mark)** • river flows fastest on the outside bend increasing the erosive power, **(1 mark)** undercutting **(1 mark)** to form concave river cliffs, **(1 mark)** which gradually retreat **(1 mark)** • river flows slowest on the inside bend leading to deposition **(1 mark)** • helicoidal flow **(1 mark)** transfers sediment from river cliffs to slip-off slopes in a corkscrew movement **(1 mark)** • meanders become more pronounced over time **(1 mark)** • the neck of the meander becomes narrower **(1 mark)** • during flood there is more energy **(1 mark)** and the water may cut through the neck **(1 mark)** • deposition seals off the old meander **(1 mark)** • over time the abandoned channel may dry up. **(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.			Award **a maximum of 6 marks** if candidates do not provide an annotated profile. Award **a maximum of 6 marks** where candidates provide a 'ladder' type diagram (with A, B, and C horizons) and separate text answer.	**8**	 • associated vegetation is deciduous woodland **(1 mark)** • with abundant leaf litter **(1 mark)** • thick humus layer **(1 mark)** • mull/less acidic humus **(1 mark)** • long tree roots extend deep into the soil **(1 mark)** • and high levels of biota/bacterial activity **(1 mark)** • dark brown A horizon **(1 mark)**, with a loamy texture **(1 mark)** and well-aerated **(1 mark)** • well drained soil **(1 mark)** • lighter brown B horizon **(1 mark)** • indistinct horizons **(1 mark)** • C horizon is generally weathered rock. **(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.			Check any diagram(s) for relevant explanations not present in the text and award marks accordingly. Well annotated diagrams can gain full marks.	**8**	• due to the curvature of the Earth, **(1 mark)** in the tropics the sun's rays are concentrated on a much smaller area **(1 mark)**, resulting in more intense heating **(1 mark)** • rays have less atmosphere to pass through at the tropics **(1 mark)**, so less energy is lost through absorption and reflection **(1 mark)** • albedo is the reflectiveness of the land surface **(1 mark)** darker forest surfaces at the tropics **(1 mark)**, have a lower albedo so absorb more energy **(1 mark)** in contrast with lighter snow/ice covered areas at the poles **(1 mark)** • due to the tilt of the Earth **(1 mark)**, limited insolation is received at the Poles in winter **(1 mark)**, whereas tropical areas receive insolation all year round. **(1 mark)** Or any other valid point.

Section 2 — Human environments

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
7.			Award **1 mark** for each relevant point.	**6**	Points may include • lack of basic facilities such as schools, water **(1 mark)** • lack of public utilities such as sewerage or power **(1 mark)** • high incidence of disease **(1 mark)** • high rates of unemployment **(1 mark)** • unsightly dwellings made out of scrap materials **(1 mark)** • located on areas prone to flooding or landslides **(1 mark)** • often built without legal permission **(1 mark)** • overcrowded dwellings lead to lack of privacy/waste. **(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 explanatory point. Award **a maximum of 5 marks** for description, including a maximum of one mark for an appropriate specific named example within the chosen city. Candidates must include description and explanation for full marks.	**8**	For candidates who have studied Glasgow, possible answers might include • the M74/ M77/Glasgow Southern Orbital Route **(1 EG mark)** by-pass/ring roads mean that through traffic does not need to travel into the city centre **(1 E mark)** • sections of Argyle Street and Buchanan Street **(1 EG mark)** were pedestrianised **(1 D mark)** to make it safer and more pleasant for shoppers **(1 E mark)** • commuters have been encouraged to travel into the city centre by public transport **(1 D mark)** to reduce the number of cars on the road **(1 E mark)** such as free wi-fi on trains/buses **(1 D mark)** • additional parking has been provided at suburban train stations, **(1 D mark)** to encourage commuters to park and ride **(1 E mark)** • the introduction of bus lanes on main commuter routes **(1 D mark)** has reduced journey times for bus users **(1 E mark)** • many city centre streets are now one way **(1 D mark)** for example, around George Square and Hope Street **(1 EG mark)** to improve the flow of traffic at junctions **(1 E mark)** • parking charges have been increased **(1 D mark)** to deter drivers from bringing their cars into the city centre **(1 E mark)** • new bridges have been built across the Clyde **(1 D mark**) like the Clyde Arc ('Squinty Bridge') **(1 EG mark)** to reduce bottlenecks on existing roads **(1 E mark)** • Glasgow has introduced a low emission zone to deter older vehicles **(1 D mark)** which will improve air quality **(1 E mark)** • the speed limit has been reduced to 20mph in Glasgow city centre **(1 D mark)** to make the streets safer for cyclists **(1 E mark)** • the government has introduced a workplace parking levy **(1 D mark)** to encourage commuters not to take their car to work. **(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
9.			Award **1 mark** for each relevant point. Award **a maximum of 2 marks** where candidates give appropriate named examples within the chosen case study. Award **a maximum of 8 marks** where candidates give generic answers which do not refer to a specific case study.	**10**	**For the Sahel, answers may include** • loss of fertile topsoil **(1 mark)** leading to the inability of the land to support vegetation **(1 mark)** • crop failures/death of livestock, reducing food supply**, (1 mark)** leading to malnutrition and famine **(1 mark)** in Sudan/Ethiopia **(1 EG mark)** • large scale rural migration into overcrowded urban areas in the south, **(1 mark)** causing more pressure and 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)** • economically, 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 within and sometimes, between countries **(1 mark)** as people are forced to move and re-settle – growth of large refugee camps for example Darfur **(1 EG mark)** • countries 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)** Or any other valid point.

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
10.	(a) and (b)		Award **1 mark** for each relevant point. Award **a maximum of 2 marks** where candidates give appropriate named examples within the chosen case study. Award **a maximum of 10 marks** where candidates give generic answers which do not refer to a specific case study. Award a maximum of **8 marks** for either part (a) or (b).	**12**	**For the Lake District, answer may include** • removing litter bins in remote areas **(1 D mark)**. This has encouraged people to take their litter home **(1 D mark)** • traffic restrictions such as one way streets/limited waiting times **(1 D mark)** for example, Ambleside **(1 EG mark)** • improved public transport to lower congestion **(1 D mark)** for example, Lake District Park and Explore **(1 EG mark)** have had limited success as people prefer the convenience of their own vehicles **(1 EFF mark)** • using farmers' fields as temporary car parks reduces on-street parking **(1 D mark)** this is effective and can bring in another form of income for the farmer **(1 EFF mark)** • planting trees around unsightly developments can shield them **(1 D mark)** but this is a long term solution **(1 EFF mark)** • new developments are controlled by NPA by-laws **(1 D mark)** ensuring they use local materials which means they blend in with the landscape **(1 D mark)** • speed limits to reduce beach erosion have been implemented **(1 D mark)**, for example, Lake Windermere **(1 EG mark)** however this has resulted in speedboat users moving to other Lakes **(1 EFF mark)** • footpaths have been improved by laying local stone **(1 D mark)** for example, Fix the Fells **(1 EG mark)** however this is very costly to implement **(1 EFF mark)**. This is also voluntary and so can take longer to complete. **(1 EFF mark)** Or any other valid point.

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
11.			Award **1 mark** for each relevant point. Award **a maximum of 4 marks** where candidates give generic answers which do not refer to a specific case study.	**6**	**For Poland to Scotland Voluntary Migration** **Impacts on receiving country** • the government receives tax from migrant workers **(1 mark)** who are doing jobs that British people will not do due to low wages and unsociable hours **(1 mark)** • generally, migrants are perceived as hard workers and many are highly skilled and/or graduates **(1 mark)** so brought sought after skills during the UK construction boom **(1 mark)** • the language barrier and cultural differences can lead to racial tension **(1 mark)** with ethnic groups tending not to integrate which can add to the tension **(1 mark)** • may lead to the development of over-crowded, multi occupancy accommodation **(1 mark)** due to the pressures on housing in certain areas **(1 mark)** • the education system may become strained **(1 mark)** due to the number of children for whom English is not their first language **(1 mark)** • due to the number of migrants entering Scotland this can lead to increased unemployment rate **(1 mark)** as a knock-on of the economic downturn **(1 mark)** • positives for a multicultural society **(1 mark)** would include Polish shops or aisles in supermarkets. **(1 mark)** Or any other valid point.

Question			General marking instructions for this type of question	Max mark	Specific marking instructions for this question
12.			Award **1 mark** for each consequence or **2 marks** for a developed point.	**8**	**Consequences may include** • the total population will put additional pressure on services and resources like education **(1 mark)** • housing in many developing countries, is already overcrowded **(1 mark)** This problem is likely to continue, with many people being forced to live in shanty town housing **(1 mark)** • there will be a much larger potential workforce **(1 mark)** which may attract multinational companies to the country **(1 mark)** • an increase in the active age group, however, could also result in higher levels of unemployment or underemployment **(1 mark)** • significant investment in maternity hospitals, immunisation programmes and education will be needed. **(1 mark)** It will be necessary to build more schools and train more teachers **(1 mark)** • government policies may promote smaller families **(1 mark)** or encourage emigration to reduce the problems of over-population **(1 mark)** • it will also be necessary to invest in health-care to meet the needs of an ageing population. **(1 mark)** Or any other valid point.

[END OF MARKING INSTRUCTIONS]