

Mark Scheme (Results) Summer 2008

GCE

GCE Geography A (6464/01)

Question Number	Indicative content
1(a)	<p>Anticyclone = a large area of high pressure, usually associated with subsiding air, typically $\geq 1000\text{mb}$ at the surface.</p> <p>Appearance = widely-spaced, fairly circular isobars with increasing pressure towards the centre, more closely spaced isobars towards the centre, lack of fronts, winds blowing clockwise (northern hemisphere), covers a large area, typical figures may be quoted.</p> <p>NB 'Appearance' may be addresses via a labelled sketch.</p> <p>Point Mark. 2/3 marks for definition and 2/3 marks for description to max 5.</p>

(5)

Question Number	Indicative content
1(b)	<p>"Examine" requires description, explanation and comment.</p> <p>"Winter weather" should include temperature, winds, humidity, precipitation etc.</p> <p>Focus should be on British Isles.</p> <p>Good answers will appreciate that there will be spatial variations across the British Isles, for example coastal/inland.</p> <p>Good answers should recognise that not all anticyclones are the same.</p> <p>Impact on human activity is likely to be negative in terms of disruption to road, rail, water transport and loss of life due to cold/accidents etc. Positive impacts may also be relevant.</p> <p>Evidence should come from located examples.</p>

(20)

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on human impact or low pressure systems.
Level 2	4-7	Mainly descriptive of typical weather conditions. Shows knowledge of weather conditions but without effective understanding. Some reference to human activity.
Level 3	8-11	Effective description with explanatory statements with reference to valid weather conditions, but limited in range and depth. Likely to focus on generalities of weather conditions. May refer to broad human impacts, perhaps becoming sidetracked onto this. Lacks specific data/location to support descriptive comments.
Level 4	12-15	Accurate description and sound explanation with reference to a reasonable range of weather characteristics. Shows understanding of processes involved. Likely to show some appreciation of variations of at least one type. Valid comments about human activity. Provides some data/location as evidence.
Level 5	16-20	Accurate description and thorough explanation with reference to a good range of weather characteristics. Shows clear understanding of processes involved. Appreciates variations, perhaps spatial and temporal. Valid comments on specific human activity. Uses a range of data/location as evidence.

Max Level 4 if no reference to British Isles.

Question Number	Answer	Mark
2(a)	<p>Urban micro-climate = local climatic conditions of built-up or urban areas, differing noticeably from those of the surrounding rural areas. They exhibit distinctive features of wind, temperature, visibility and precipitation.</p> <p>Urban heat island = Urban temperatures being higher than those of surrounding rural areas. Temperatures increasing towards the centre.</p> <p>The difference is, therefore, that the former refers to a range of climatic conditions, the latter only to temperature.</p> <p>POINT MARK. 2 marks for each definition and 1 mark for the distinction being evident.</p>	(5)

Question Number	Indicative content	
2(b)	<p>“Explain” requires reasons to be considered. Reasons include building height, building material, direct combustion, pollution, lack of vegetation/water surfaces etc.</p> <p>“Spatial” means from place to place. This could be at a range of scales in good answers, eg contrasts between urban areas and variations within.</p> <p>“Temporal” means over time. This could also be at a range of scales in good answers, eg seasonal variations and changes during urbanisation.</p> <p>The focus is on temperature only, not other weather characteristics. Evidence should come from located examples.</p>	
		(20)
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on broader scale climatic/weather conditions.
Level 2	4-7	Mainly descriptive of typical temperature characteristics. Shows knowledge of at least one reason, possibly linked to pollution, but little effective understanding. Broad references to place/time.
Level 3	8-11	Some accurate explanatory statements with reference to valid reasons, but limited in range and depth. Has knowledge of processes involved, possibly linked to building materials/surfaces. Likely to focus on spatial or temporal variations. Names locations/times but lacks specific data.
Level 4	12-15	Sound explanation with reference to a reasonable range of reasons. Shows understanding of processes involved. Addresses spatial and temporal variations, but not necessarily in a balanced way. May not refer to a range of scales. Provides some data as evidence.
Level 5	16-20	Thorough explanation with reference to a good range of reasons. Shows clear understanding of processes involved. Addresses both spatial and temporal variations in a fairly balanced way. May appreciate a range of scales. Uses a range of data as evidence.

Question Number	Answer	Mark
3(a)	<p>Mass balance (budget) = the pattern over time (1) of the amount of ice in a glacier/size of a glacier (1). The net or positive/negative(1) difference is determined by subtracting the total ablation/output from the total accumulation/input. (2).</p> <p>Point Mark.</p>	(5)

Question Number	Indicative content
3(b)	<p>“Describe” requires mass balance to be identified as positive or negative in different circumstances. “Explain” requires reasons to be considered. Reasons should focus on climate (temperature, precipitation...)... ...may link to processes of evaporation, sublimation, calving, global warming etc “Spatial” means from place to place. This could be at a range of scales in good answers eg contrasts between glaciers and either side of the equilibrium line. “Temporal” means over time. This could also be at a range of scales in good answers eg seasonal variations and longer term. Evidence should come from located examples.</p>

(20)

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on mechanisms of movement.
Level 2	4-7	Mainly descriptive of changes in glaciers eg advance/retreat. Shows knowledge of role of temperature but without effective understanding of impact on mass balance. Possibly focused on global warming.
Level 3	8-11	Some accurate explanatory statements with reference to valid reasons, but limited in range and depth. May be temperature only but does apply to mass balance. Likely to focus on spatial or temporal variations. Names locations/times but lacks specific data.
Level 4	12-15	Sound explanation with reference to a reasonable range of reasons, with a focus on climate likely. Shows understanding of processes involved. Addresses spatial and temporal variations, but not necessarily in a balanced way. Possibly seasonal and temperate/polar differences. May not refer to a range of scales. Provides some data as evidence.
Level 5	16-20	Thorough explanation with reference to a good range of reasons. Shows clear understanding of processes involved. Addresses both spatial and temporal variations in a fairly balanced way. May appreciate a range of scales, particularly seasonal and effects of long-term global warming. Uses a range of data as evidence.

Question Number	Indicative content
4(a)	<p>Periglacial environments =</p> <p>Location - at the edge of ice sheets and glaciers (1) Range of locations eg high latitude/high altitude/continental interiors (1)</p> <p>Climate - “Summer” temperatures >0°C (1), temperatures fluctuate around zero (1)</p> <p>Other - permafrost (1) freeze-thaw cycles dominate geomorphological processes (1)</p> <p>Point Mark up to 4.</p> <p>Recognition that climatic conditions are the key determinant is required for max (5)</p>

Question Number	Indicative content
4(b)	<p>“Assess” requires the role of temp fluctuations to be fully considered, but that other factors are also discussed.</p> <p>Freezing and thawing conditions affect ground as well as sub-aerial processes. Expect references to physical weathering=scree, frost-heave=patterned ground, ground contraction=ice wedge polygons, solifluction=lobes/sheets. Evidence should come from located examples.</p> <p>May refer to formation and modification of landforms.</p> <p>Good answers will recognise the role of other influences, such as seasonal thaw creating significant fluvial processes, aeolian, human...</p> <p>The question refers to landforms although a broader view of the landscape is also acceptable.</p> <p>(20)</p>

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on inappropriate processes or landforms.
Level 2	4-7	Mainly descriptive but with some simplistic explanation. Shows knowledge of some landforms but little effective understanding. Focus on freeze-thaw weathering likely. Does not assess.
Level 3	8-11	Effective description with some accurate explanatory statements with reference to valid landforms, but limited in range and depth. Has knowledge of processes involved, but limited understanding and application to landforms. Lacks specific examples/data to support descriptive comments. Little explicit assessment.
Level 4	12-15	Sound assessment of temp fluctuations with reference to a reasonable range of landforms. Shows understanding of processes involved. Likely to show some appreciation of both above and below ground processes, but not necessarily in a balanced way. Provides some examples/data as evidence. May not appreciate other factors.
Level 5	16-20	Full assessment of temp fluctuations with reference to a good range of landforms. Shows clear understanding of processes involved. Appreciates both above and below ground processes in a fairly balanced way. Refers to other factors as well and/or recognises different timescales eg diurnal/seasonal. Uses a range of examples/data as evidence.

Question Number	Answer	Mark
5(a)	<p>Biomass = amount of living matter (plant and animal) in an area, usually expressed as g/unit². OR amount of stored energy in an area/ecosystem.</p> <p>Ecosystem = functioning, interacting system composed of one or more living organisms and their effective environment both physical and biological. OR similar, recognising plants, animals, the environment and the relationship between them.</p> <p>Point Mark. 2/3 marks for each definition to max 5.</p>	(5)

Question Number	Indicative content	
5(b)	<p>“Examine” requires description, explanation and comment.</p> <p>Factors include climate, soil, human activity....</p> <p>“Spatial” means from place to place. This could be at a range of scales in good answers eg between and within ecosystems</p> <p>“Temporal” means over time. This could also be at a range of scales in good answers, eg seasonal and successional.</p> <p>Evidence, such as species names, biomass and climate data, should come from located examples.</p>	
		(20)
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on general characteristics of one biome or ecosystem.
Level 2	4-7	Mainly descriptive of biomass. May lift material from the resource. Shows knowledge of factors but little effective understanding. Broad references to biomes or ecosystems are likely.
Level 3	8-11	Effective description with some accurate explanatory statements with reference to valid factors, but limited in range and depth. Has knowledge of processes involved, but limited understanding and application to biomass. Likely to focus on either spatial or temporal variations only. Lacks specific examples/data to support descriptive comments.
Level 4	12-15	Accurate description and sound explanation with reference to a reasonable range of factors. Shows understanding of processes involved. Likely to show some appreciation of both spatial and temporal variations, but not necessarily in a balanced way. Provides some examples/data as evidence.
Level 5	16-20	Accurate description and thorough explanation with reference to a good range of factors. Shows clear understanding of processes involved. Appreciates spatial and temporal variations, perhaps at a range of scales. Valid comments on specific human activity. Uses a range of examples/data as evidence.

Question Number	Answer	Mark
6(a)	<p>Zonal concept = A system of categorising/grouping soils(1) based on the dominance of different soil forming factors(1). It recognises three broad types of soil: Zonal = soils, dominated by climatic characteristics. Intrazonal = soils dominated by a factor other than climate. Azonal = immature soils/not yet reflecting the influence of any one particular factor.</p> <p>Point Mark. 2 marks for understanding of the concept. 1 mark each for knowledge of the three types. NB award 1 mark if the three types are stated but not differentiated. NB Max 3 for answers based on zonal soils only, with references to <u>dominance</u> of climate and soil type.</p>	(5)

Question Number	Indicative content	
6(b)	<p>“Assess” requires judgements to be made. “Relative importance” requires the significance of the factor stated be compared to the significance of the other influencing factors. Other factors are climate, organisms, relief (topography) and time. Parent material is important initially and dominates in some intrazonal soils. Climate is the most important factor on a global scale. Evidence should come from located examples.</p>	
	(20)	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-3	Very little accurate description or factual content. Likely to lack relevance, perhaps focussing on general characteristics of one soil or soils in general.
Level 2	4-7	Mainly descriptive of soil characteristics. Shows knowledge of some factors but little effective understanding. Likely to lack any evidence from named/located soil types.
Level 3	8-11	Some assessment of parent material as a factor. May name other factors. Has knowledge of processes involved but limited in range and depth. May focus on a single soil type. Unlikely to refer to the zonal concept. OR a broad, generalised account of a range of factors, with some accurate explanatory statements, limited in depth and not supported with evidence.
Level 4	12-15	Effective assessment of a reasonable range of factors, with a likely focus on parent material and climate. Shows understanding of processes involved. Makes strong concluding comments, but on-going assessment may be implied in places. May refer to zonal concept. Provides some examples/data as evidence.
Level 5	16-20	Accurate assessment of a good range of factors. Shows clear understanding of processes involved. Assesses via comments throughout the answer, not just in conclusion. Likely to apply the zonal concept. Uses a range of examples/data as evidence.