

Markscheme

November 2024

Geography

Higher and standard level

Paper 1

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Paper 1 markbands

These markbands are to be used for paper 1 at both standard level and higher level.

Marks	Level descriptor		
	AO1: Knowledge and understanding of specified content AO2: Application and analysis of knowledge and understanding	AO3: Synthesis and evaluation	AO4: Selection, use and application of a variety of appropriate skills and techniques
0	The work does not reach a standard described by the descriptors below.		
1–2	<p>The response is too brief, lists unconnected information, is not focused on the question and lacks structure.</p> <ul style="list-style-type: none"> • The response is very brief or descriptive, listing a series of unconnected comments or largely irrelevant information. The knowledge and understanding presented is very general with large gaps or errors in interpretation. Examples or case studies are not included or only listed. • There is no evidence of analysis. • Terminology is missing, not defined, irrelevant or used incorrectly. 		
3–4	<p>The response is too general, lacks detail, is not focused on the question and is largely unstructured.</p> <ul style="list-style-type: none"> • The response is very general. The knowledge and understanding presented outlines examples, statistics, and facts that are both relevant and irrelevant. Links to the question are listed. • The argument or analysis presented is not relevant to the question. • Basic terminology is defined and used but with errors in understanding or used inconsistently. 		
5–6	<p>The response partially addresses the question, but with a narrow argument, an unsubstantiated conclusion, and limited evaluation.</p> <ul style="list-style-type: none"> • The response describes relevant supporting evidence (information, examples, case studies et cetera), outlining appropriate link(s) to the question. • The argument or analysis partially addresses the question or elaborates one point repeatedly. • Relevant terminology is defined and used with only minor errors in understanding or is used inconsistently. 		

<p>7–8</p>	<p>The response addresses the whole question, the analysis is evaluated and the conclusion is relevant but lacks balance.</p> <ul style="list-style-type: none"> • The response describes relevant supporting evidence correctly (information, examples and case studies) that covers all the main points of the question, describing appropriate links to the question. • The argument or analysis is clear and relevant to the question but one-sided or unbalanced. • Complex terminology is defined and used correctly but not consistently.
<p>9–10</p>	<p>The response is in-depth and question-specific (topic and command term); analysis and conclusion are justified through well-developed evaluation of evidence and perspectives.</p> <ul style="list-style-type: none"> • The response explains correct and relevant examples, statistics and details that are integrated in the response, explaining the appropriate link to the question. • The argument or analysis is balanced, presenting evidence that is discussed, explaining complexity, exceptions and comparisons. • Complex and relevant terminology is used correctly throughout the response.

Section A

Option A — Freshwater

1. (a) (i) State how many countries on the Mekong River have dams. [1]

3

- (ii) State the main direction of flow of the Mekong River along the border of Thailand and Laos. [1]

SE / SSE

- (b) Outline **one** effect that the dams in the upper course of the Mekong River might have on agricultural land in Cambodia. [2]

Award [1] for the effect and [1] for development / explanation.

For example, potentially less productive for farmers [1] as less water / silt reaches the farmland downstream [1]

Other effects include:

- reduced flooding
- reduced water for irrigation

- (c) (i) Explain how river deposition may create a delta. [3]

Award up to [3] for explanation, development / exemplification.

For example, when the river enters the sea / lake - velocity decreases [1] sediment carrying capacity decreases [1] and bedload is deposited [1]

Other factors include:

- flocculation
- large sediment load of river
- small tidal range / weak currents in the sea so little transportation of deposited material.

- (ii) Explain how river erosion may create a waterfall. [3]

Award up to [3] for explanation, development / exemplification.

For example, hydraulic erosion / abrasion [1] when the river flows over bands of harder and softer rocks / wears away the softer (less resistant) rock [1] and undercutting occurs / bed of river becomes steepened [1].

Other points include:

- geology
- variations in discharge levels
- load causing abrasion in plunge pool
- retreat.

2. (a) Examine why growing pressures from stakeholders might make future management of wetlands difficult.

[10]

Marks should be allocated according to the markbands.

Wetlands are highly productive and diverse ecosystems that enhance water quality, protect areas from flooding, and are an important carbon sink. They also provide a variety of recreational opportunities. They are under growing pressure from activities such as urbanisation, agriculture, water abstraction, pollution, and drainage modification. It is important that wetlands are managed for a sustainable future.

Possible **applied themes** (AO2) demonstrating **knowledge and understanding** (AO1):

- The importance of wetlands: highly productive and diverse ecosystems; water quality; flood control; carbon sinks
- Wetlands are under growing pressure from a variety of stakeholders: water abstraction for irrigation and water supply; drainage for farmland; channel modification; pollution from agriculture; recreation and tourism; growth of urban areas.
- Stakeholders, at local, national, and international scales, who may be in conflict regarding wetland use and management include environmentalists, water suppliers and engineers, farmers, and tourists
- Management of wetlands for a sustainable future is difficult because of the different roles and priorities of stakeholders.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that examines the priorities and **power** and perspectives of different stakeholders, and possible future management.

For 5–6 marks, expect weakly-evidenced outlining of at least one pressure on wetlands.

For 7–8 marks, expect a structured account that includes:

- Either an evidenced explanation of growing pressures from stakeholders over wetland management
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives of future management possibilities.

For 9–10 marks, expect both of these traits.

2. (b) To what extent do physical factors cause increasing freshwater scarcity? [10]

Marks should be allocated according to the markbands.

The problem of increasing water scarcity is caused by both physical and economic factors. Physical factors leading to water scarcity include low, unreliable rainfall, and problems of drought, which might be increasing due to climate change. Economic factors include increasing demands from domestic, agricultural, and industrial purposes, together with growing populations and rising living standards. In addition, many freshwater supplies are being polluted, reducing water quality.

Possible **applied themes** (AO2) demonstrating **knowledge and understanding** (AO1):

- Physical water scarcity is a problem in areas of low, unreliable, and seasonal rainfall, and possible increase in frequency and intensity of droughts. Also, in areas lacking access to surface water from rivers and lakes, and from underground aquifers.
- Water scarcity intensifies as demand increases, due to economic development and population growth, or supply is affected by decreasing water quality.
- Pollution of rivers, lakes and aquifers reduces water quality, adding to scarcity problems.
- Over-extraction of water from aquifers may be greater than recharge rates
- Increasing population, especially in urban areas with inadequate water infrastructure; rising living standards, demands from agriculture and industry also intensify water scarcity.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that examines the varied causes and problems of water scarcity in different **places** and **scales**. They may also consider why water scarcity may increase over **time** and future management issues.

For 5–6 marks, expect weakly-evidenced outlining of how at least one physical factor may cause freshwater scarcity.

For **7–8 marks**, expect a structured account that includes:

- Either an evidenced explanation of physical and other (economic, social) factors causing increased freshwater scarcity
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives examining the relative importance of physical and economic factors

For **9–10 marks**, expect both of these traits.

Option B — Oceans and coastal margins

3. (a) (i) Estimate the length of the Great Pacific Garbage Patch from east to west. [1]

Accept any answer between 7000-9000km. (Units not required)

- (ii) State the direction of circulation of the North Pacific Gyre. [1]

Clockwise.

Accept west to east in the north, and east to west in the south but must have both of these.

- (b) Outline **one** reason why plastic pollution occurs along ocean coastlines. [2]

Award [1] for reason and [1] for development / explanation.

For example, coastlines / beaches are closest to the source (the dumping of plastic waste material / rubbish) [1] and any waste is kept near the shore by wave movement / ocean currents / onshore winds [1]

Other explanations include

- Densely populated / urban settlements at coastlines
- Waste not removed from rivers before it enters the sea

- (c) Explain **two** economic benefits of coral reefs. [3 + 3]

Award [1] for a benefit clearly linked to the economy and up to [2] for development / explanation / developed exemplification.

For example, employment in the local area [1] such as the Great Barrier Reef provides a significant number of full-time jobs in providing dive boats, sightseeing trips [1] thus raising the living standards in the area [1].

Other economic benefits include:

- Coastal protection from storms/flooding/surges for homes, resorts
- Fishing industry – breeding grounds for fish
- Provision of building materials, e.g., concrete aggregate
- Absorption of CO² (link to global warming – reducing the need for expensive mitigation elsewhere)

4. (a) Examine the importance of wave processes **and** lithology in the formation of coastal landforms of erosion. [10]

Marks should be allocated according to the markbands.

Landforms of coastal erosion include cliffs, stacks, and wave-cut platforms. They are the result of a complex interaction between various marine and sub-aerial processes, rock lithology, vegetation, topography, and possible changes in sea level over time. The relative importance of these factors varies between places and over time.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Coastal landforms are the product of a complex interaction between different processes over time
- High energy waves, influenced by strong winds, are important processes of erosion, by attrition, abrasion, solution and hydraulic action.
- Coastal lithology, including rock type and jointing will influence the amount and rate of wave erosion. Lithology also influences cliff profiles. Concordant and discordant coastlines affected by geological alignment.
- Other processes are also important, including sub-aerial processes, weathering and mass movement, which influence the shape and features of cliffs
- Also, changes in sea level may produce landforms such as raised wave-cut platforms and relict cliff lines

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that examine the power of inter-relationships between wave processes and lithology; together with the relative importance of other factors and processes (e.g., sub-aerial). These processes and factors vary between different places and may change over time.

For 5–6 marks, expect weakly-evidenced outlining of at least one influence of wave processes and/or lithology on coastal landforms of erosion

For **7–8 marks**, expect a structured account that includes:

- Either an evidenced examination of the importance of the interaction between wave processes and lithology in the formation of coastal landforms of erosion
- Or a discursive conclusion (or on-going evaluation) regarding their importance relative to other factors, such as sub-aerial processes and changes in relative sea level

For 9–10 marks, expect both of these traits

4. (b) Examine why it is difficult to manage international conflict concerning the strategic value of oceans.

[10]

Marks should be allocated according to the markbands.

The oceans have considerable strategic value, including transportation and trade, choke points, mineral and organic resources, and military. These result in conflict over rights, jurisdiction and contested ownership, including control of islands and canals. Competing political power is linked to geographic space, and involves sovereignty rights, territorial limits, and EEZs. In addition, management challenges include navigation rights and competition for resources, especially with climate change and melting of sea ice.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Oceans have considerable economic, political and military strategic value, which results in competition and argument over ownership, rights and jurisdiction.
- Contested ocean areas involve the sovereignty rights of nations in relation to territorial rights and EEZs.
- Conflict involving island ownership, such as in the South China Sea, transit choke points and canals.
- Issues also include trans-boundary pollution, fishing rights and management of over-fishing.
- Management difficulties include resolving issues through international treaties. These difficulties are partly caused by the relative political power of stakeholders, and the role of different international/multilateral organizations; future security and political stability.
- Management difficulties may change over time, including the effects of climate change and emergence of new resources.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that examines the perspectives and power of different stakeholders, the management challenges and future possibilities for resolving issues in different places and time scales.

For 5–6 marks, expect weakly-evidenced outlining of an international conflict in an ocean area

For 7–8 marks, expect a structured account which includes:

- Either an evidenced explanation of the difficulties of managing international conflict concerning the strategic value of oceans
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, possibly exploring the consequences of changing geopolitical tensions

For 9–10 marks, expect both of these traits.

Option C — Extreme environments

5. (a) (i) State the sector with the greatest loss of ice. [1]

Arctic sea ice

- (ii) Estimate the percentage of Earth’s ice lost from mountain glaciers. [1]

Accept any answer between 19-23% (units not required)

- (b) Outline **one** way in which the melting of mountain glaciers can negatively affect local communities. [2]

Award [1] for the way the community is affected and [1] for development / explanation.

For example, Water supplies may decline [1] thereby affecting the availability of water for farming downstream from the glacier [1]

Other ways include:

- Flood events more frequent
- Decline of (heli) skiing / tourism
- Losing ice from historic spots, e.g., Everest base camp
- HEP loss

- (c) Explain how **two** new technologies might help sustainable development in local communities in extreme environments. [3 + 3]

Award [1] for the technology and up to [2] in each case for explanation / development of a sustainable link (social and / or economic)/ exemplification.

For example: solar power / any renewable alternative energy [1] helps bring electricity to remote villages [1] and can power climatically controlled greenhouses increasing their food supplies [1]

For example: local desalinisation plants [1] which increases water supply allowing sedentary farming [1] thereby increasing employment locally / aiding the selling of crops in local markets [1].

Other new technologies include:

- IT and communications development e.g., cheap mobile phones
- Waste management
- New construction techniques
- Snow guns creating artificial snow

Note: Do not credit irrigation

6. (a) To what extent is water important in the formation of hot, arid landscape features? [10]

Marks should be allocated according to the markbands

Both wind and water are important in the formation of arid landscape features. However, their relative importance varies between different places and time periods. Water plays a vital role in weathering, erosional processes related to high intensity rainfall events, and the deposition of debris. For example, where mountains meet the plains distinctive features such as alluvial fans are formed. Water was also important in past wetter climatic periods (pluvials) that affected today's desert areas.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Both wind and water play important roles in the formation of landscape features, although their contribution varies between different places
- Water plays a vital role in weathering processes, including exfoliation, resulting in shattered rock fragments covering many desert surfaces
- Infrequent, high intensity rainfall results in flash floods, sheet wash and high energy ephemeral rivers – forming wadis, canyons, mesas and buttes, and transporting large volumes of debris
- Fluvial deposition forms alluvial fans and bajadas along mountain fronts, and lakes and playas
- Evidence of past wetter climates, resulting in formation of relict landscape features
- Wind is also an important process, in certain places, especially in dune formation, and may work with water to form features such as mesas and rock pedestals

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the relative importance of water and wind processes in the formation of landscape features, perhaps in different places. Another approach might be to examine the relative importance of water over different time scales, such as past climates.

For 5–6 marks, expect weakly-evidenced outlining of the role of water in the formation of one or more landscape features

For 7–8 marks, expect a structured account which includes:

- Either an evidenced explanation of the importance of water in the formation of two or more landscape features
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, examining the relative importance of water and other processes

For 9–10 marks, expect both of these traits.

6. (b) Examine the opportunities **and** challenges associated with irrigation in hot, arid areas. **[10]**

Marks should be allocated according to the markbands.

Hot, arid environments are characterised by very low and variable rainfall, resulting in water scarcity. Permanent agriculture is only possible with irrigation along water courses, oases, or water from aquifers. Opportunities for irrigation are limited, but may increase with economic development, dam and reservoir construction, water transfer schemes and greater access to groundwater. Challenges include: significant capital investment, access to technology, and management. Salinization is also a challenge but may be reduced by improved irrigation techniques. Over-exploitation of aquifers, lowering of water tables, is unsustainable and reduces availability of water for irrigation, unless properly managed.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Hot, arid areas are characterized by low, unreliable rainfall and general water scarcity
- Opportunities for irrigation are limited by physical technology and economic factors, and vary from place to place – along water courses, oases, and groundwater aquifers
- Economic development, access to capital and technology may increase opportunities for irrigation – dams and reservoirs, water transfer, exploitation of aquifers. Lack of capital may be a challenge and a barrier to development.
- Salinization is a significant challenge to irrigation, rendering land useless for farming and increasing pressures on food supply. The problem may be reduced by careful management and irrigation
- Other challenges include lowering of water tables in aquifers, and over-extraction of water from rivers

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of how opportunities and challenges vary between different places. The power of societies with access to capital and technology may benefit from opportunities and respond to challenges, and how these vary over time. Another approach might be to consider how extraction of water for irrigation in one area may lead to problems elsewhere.

For 5–6 marks, expect weakly-evidenced outlining of at least **one** opportunity and/or challenge for irrigation

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of the opportunities and challenges associated with irrigation
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, perhaps examining how these may change over time

For 9–10 marks, expect both of these traits.

Option D — Geophysical hazards

7. (a) (i) State the number of islands that the tsunami had reached after two hours [1]
2
- (ii) State how many hours it took the tsunami to reach **X**. [1]
9 (hours)
- (b) Outline **one** reason for the formation of a tsunami. [2]

Award [1] for the reason and [1] for explanation / development.

For example, shaking of ocean floor / sudden displacement of the ocean floor by an earthquake / volcanic eruption/ landslide [1] generates large ocean waves radiating out from the epicentre [1]

- (c) Explain **two** ways in which land-use zoning might reduce risk from geophysical hazards. [3 + 3]

Award [1] for a way and up to [2] in each case for development/ explanation / exemplification

For example: government planning [1] prevents settlement in coastal low-lying areas [1] which suffer wave surges from tsunamis [1]

For example, surveys from previous ash and lava from volcanic eruptions [1] help determine the area likely to be affected [1] so determining the area of evacuation needed in the event of another eruption [1]

Other ways / strategies include:

- Hazard mapping – build away from major fault lines
- Avoid settlements at base of steep slopes
- Restricting developments in regions prone to lahars, ash fall or lava flows

8. (a) Examine how social and economic factors may increase the vulnerability of communities to geophysical hazards. [10]

Marks should be allocated according to the markbands.

Vulnerability to hazards varies from place to place and within different communities. Despite greater understanding of distribution, frequency and causes of hazards, some communities are increasingly vulnerable, resulting in considerable economic and social loss. There are a number of complex, inter-related economic and social causes of increasing vulnerability, affecting communities at all levels of development

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Vulnerability from hazards may increase within and between in communities in different places. The reasons may be social, economic and political
- Social factors include increasing population pressures from rapidly growing populations located in hazard-prone areas (e.g., megacities and densely populated rural areas), access to healthcare/education or lack thereof.
- Economic factors include relative poverty/wealth, access to insurance, infrastructure
- Changing population structure – ageing or youthful populations may increase vulnerability
- Poor planning controls, allowing people to settle and develop hazard-prone areas
- Poor governance, resulting in a lack of, or weak, hazard management strategies
- Political instability, civil unrest, and war

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of social and economic reasons for the increasing vulnerability to geophysical hazards, how this varies between and within different places and communities and may increase over time.

For 5–6 marks, expect weakly-evidenced outlining of one or more social and/or economic reasons why vulnerability to communities to geophysical hazards might increase.

For 7–8 marks, expect a structured account which includes:

Either an evidenced explanation of the social and economic reasons why the vulnerability to communities to geophysical hazards might increase

Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, perhaps considering inequality in vulnerability with variations within and between communities

For 9–10 marks, expect both of these traits.

NB: If no geophysical hazard is mentioned, award a maximum of [4].

8. (b) Evaluate the effectiveness of post-event management strategies for mass movement hazards.

[10]

Marks should be allocated according to the markbands

Human vulnerability to mass movement hazards, including economic and social losses, may be reduced by strategies to reduce loss of life and injury, provide shelter and minimise the spread of diseases, together with longer term strategies of rehabilitation, reconstruction, planning and land use zoning. The effectiveness of these strategies will depend partly on social, economic, and political factors. Hazard risk and vulnerability may also vary with different types of mass movement, especially with landslides, slumps, rockfalls and avalanches.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Post event strategies may be short-term (rescue, medical care, secure water supply, and accommodation) and long-term (rehabilitation, reconstruction and planning)
- Effectiveness will vary with economic, social, and political factors, including availability of skilled search and rescue teams, access to technology and communications to locate and aid survivors
- Rehabilitation and reconstruction require access to capital and knowledge, ensuring that infrastructure is resilient to mass movement
- Planning and land-use zoning are also very important, depending on knowledge and understanding of causes and possible future location of mass movement events
- Education, and raising perception and awareness of possible future mass movement hazard risk, are also important in understanding the effectiveness of strategies

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the effectiveness of post-management strategies in the short and long term, the power of different stakeholders, and compare how effectiveness varies between different places at varying levels of social, political and economic development.

For 5–6 marks, expect weakly-evidenced outlining of at least one post-event management strategy for mass movement hazards

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of post-event strategies and their effectiveness
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, possibly comparing how effectiveness varies between different places and over varying time scales

For 9–10 marks, expect both of these traits.

NB: If no mass movement hazard is mentioned, award a maximum of [4].

Option E — Leisure, tourism and sport

9. (a) (i) Identify the fastest way to reach the top station from the base station. [1]

Funicular railway

- (ii) State the difficulty of the longest ski route shown on the map. [1]

Intermediate / blue. Accept easy / green.

- (b) Outline **one** physical factor that could reduce the number of visitors to this area. [2]

Award [1] for the factor and [1] for development / explanation.

For example, a warmer winter [1] means a lack of snow so no winter sports [1].

Other physical factors include:

- Climate change / global warming (can be any season related)
- Avalanche / landslide
- Other natural hazard e.g. winter storms, volcanic eruptions, earthquakes

- (c) (i) Explain how **movie location** tourism is used to achieve tourism growth. [3]

Award [1] for a way tourism growth is achieved and up to [2] for development / explanation / exemplification

For example, movie location tourists visit and take tours to film sites/ scenic resources in the country [1], such as where LOTR was filmed in NZ [1] thus increasing job opportunities in tour companies [1].

Other ways include:

- Global reach of films
- Niche markets
- Long term impacts - sequels

- (ii) Explain how **adventure** tourism is used to achieve tourism growth. [3]

Award [1] for a way tourism growth is achieved and up to [2] for development / explanation / exemplification

For example, attracts thrill seekers from other countries [1] for activities such as bungee jumping/ white water rafting [1], boosting the local economy as these types of adventure tourism require expensive equipment/highly trained local staff and services/ specialist gear to be purchased locally. [1]

Other ways include:

- Diversifying existing tourist destinations
- Encouraging younger demographic to visit

10. (a) Examine the extent to which economic **and** social factors affect personal participation in sporting activities. [10]

Marks should be allocated according to the markbands.

Personal participation in sports is influenced by a variety of economic and social factors. Economic factors include affluence and disposable income, access to sporting facilities, such as gyms and sports grounds. Social factors include attitudes to gender and disability, and stage in lifecycle. Other factors might include government policies, the influence of social media, personality, and educational opportunities.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- There has been a significant growth in personal participation in different types of sporting activities in recent years, but participation may be increasingly unequal in terms of wealth and social status
- This growth is related to social and economic development, including increased affluence and disposable income, education and awareness, and the influence of social media
- Greater opportunity for richer people. Children from less affluent families are often less active in sports; inequality persists into adulthood. Also linked to educational opportunities.
- Social and demographic factors are also important. These include ageing populations and retired people with more leisure time
- Changing political and social attitudes towards discrimination in terms of race, religion, gender and disability, sometimes increasing opportunities for participation
- Personal participation varies spatially at different scales, both within and between countries
- An increase in organized sporting activities, both in number and type

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the economic and social factors in personal participation in sports, from different perspectives or on varying time and spatial scales. Another approach might be to examine how these factors vary between different places at varying levels of development.

For 5–6 marks, expect weakly-evidenced outlining of one or more factors affecting personal participation in sporting activities.

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of the economic and social factors affecting personal participation in sports
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, examining the extent to which economic and social factors are important

For 9–10 marks, expect both of these traits.

- 10 (b) Examine ways in which the growth of tourism in rural hotspots can be managed for a sustainable future.

[10]

Marks should be allocated according to the markbands.

The growth of tourism in rural hotspots has resulted in various negative environmental, social, and economic consequences. Large visitor numbers have exceeded carrying capacity, resulting in problems such as: overcrowding, traffic congestion, shortage of housing for residents, changed character of settlements, and environmental degradation. Management strategies should be implemented to ensure a more sustainable future and increase site resilience.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Growth of rural hotspots has caused a number of negative consequences, carrying capacity has been exceeded, and future growth is unsustainable without management
- Negative environmental, social and economic impacts include congestion and overcrowding, erosion and pollution of landscapes, rising house prices, seasonal employment and cultural dilution altering the character of places
- Strategies might include: restricting visitor numbers and vehicles, creation of protected areas, prioritizing the needs of local residents, and education of visitors
- Improve infrastructure, such as waste disposal, recycling, encourage public transport, cycle and walking paths
- Encourage localization and sustainability, year-round job creation, and reduce power of outside tourist agencies; strengthen local governance

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that examines possible management options to secure a more sustainable future in rural tourist hotspots, the power and perception of different stakeholders, possible conflicts, and resolutions. Management strategies are at different scales: local, national and international.

For 5–6 marks, expect weakly-evidenced outlining of at least one approach to sustainable management in a rural area

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of different management strategies to ensure a sustainable future for rural hotspots
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, possibly examining the problems of strategy implementation

For 9–10 marks, expect both of these traits.

NB: The use of an urban area would gain maximum [4] marks.

Option F — Food and health

11. (a) (i) Estimate the number of reported cases at the peak of the cholera outbreak. [1]

Accept any answers between 700-730.

- (ii) Identify **one** physical reason that could explain why cholera cases increased again in 2018. [1]

- Heavy rain and/or flooding
- Water shortages

- (b) Outline **one** human factor contributing to the diffusion of water-borne disease. [2]

Award [1] for a factor, and [1] for development / explanation.

Inadequate sewage system [1] which contaminates other water sources [1].

Other factors include:

- Lack of education about water safety/ lack of water source testing
- Population density
- Poverty

- (c) Explain **two** benefits of using media in the management of a pandemic. [3 + 3]

Award [1] for a benefit and up to [2] for explanation, development / exemplification.

For example, providing information [1] especially the use of visual data [1] so the public are aware of their necessary response / public health campaigns [1].

For example, staying connected with others [1] by using digital technology e.g. Facetime, video conferencing, online games [1] during enforced lockdown periods [1].

Other benefits include:

- A learning platform for online education
- Advice on what to do e.g. low-cost strategies, what to do, where to get tests
- Up -to- date information on infection levels locally

12. (a) To what extent does international aid affect the severity of famine in **one or more** countries or areas? [10]

Marks should be allocated according to the markbands.

Severe famines occur in low-income countries and poverty-stricken areas with limited access to food. They are often accompanied by other problems, such as outbreaks of disease and lack of access to water. Famines may be caused by natural factors, such as droughts and earthquakes, or human factors such as war and break-down in governance. Famines may be short- or long-term, and apart from international aid agencies, governments, local communities, and the media may also influence the severity of famine.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Severe famines often occur in low-income countries and poverty-stricken regions, with limited access to food, capital, poor communications and unstable/weak governments. They may be short term, or long-term
- Successful aid may address the wider problems related to famine such as disease, limited access to clean water, poor housing, infrastructure and communications
- International aid, from governments and/or aid agencies, such as OXFAM, may alleviate the severity of famine in the short-term – providing food, shelter, medical care and safe water. In the long-term by implementing policies for long-term food security, safe water, shelter and stable government.
- The role of the media may be important by raising awareness, highlighting the severity of the famine and the need for action, aid and assistance
- International agencies may be criticized for providing inappropriate aid, encouraging dependency, corruption, and uneven distribution

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) that shows understanding of the factors that have contributed to severity of famine and examines the contribution and power of international aid agencies, and other stakeholders, in affecting the severity of famine. Another approach might be to examine the issue in different places and over different timescales.

For 5–6 marks, expect weakly-evidenced outlining of at least one way that international aid affects the severity of famine

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of the extent to which international aid and possibly other factors affect the severity of famine in one or more country or area
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, perhaps considering different timescales

For 9–10 marks, expect both of these traits.

12. (b) To what extent is food waste reduction the best solution to the problem of food insecurity?

[10]

Marks should be allocated according to the markbands.

Food security means that people have access to sufficient quantity and safe, affordable and nutritious food for an active and healthy life. Food insecurity is a widespread problem in low-income countries with rapidly growing populations, but also within poorer communities in high income countries. It may be short- or long-term. The incidence and severity of food insecurity may be reduced by tackling the lack of adequate and affordable food supplies and through improvements in communication, and social factors such as education. Food waste reduction is also important, both in production, transportation, and consumption of food.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Food insecurity refers to a lack of access to sufficient affordable, safe and nutritious food.
- It is linked to poverty and inequality, and common in low-income countries with rapidly growing populations, low food production, poor infrastructure and weak governance. It also occurs in poor communities within high income countries
- Solutions to food insecurity are complex and varied, including improving food production, infrastructure, raising employment and incomes, international trade, and political stability
- Food waste reduction is also important, especially in the storage and transportation of food, and reducing waste from retailers and consumers. Improved storage facilities, transport, consumer behavior, and action by retailers is also important
- Reducing food waste involves education and increasing awareness, perhaps promoted by media campaigns and different aid agencies
- Food waste reduction is a relatively simple and low-cost solution to food insecurity

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that shows understanding of the complex causes and possible solutions to food insecurity, the role of different stakeholders, and especially the importance of, and challenges to, food waste reduction as a strategy. Another approach might be to examine the solutions to food insecurity in different places, and varying time scales.

For 5–6 marks, expect weakly-evidenced outlining of at least one way that food waste reduction helps solve the problem of food insecurity.

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of the role of food waste reduction in reducing food insecurity and possibly other factors affecting food insecurity
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, considering other solutions to reduce food insecurity

For 9–10 marks, expect both of these traits.

Option G — Urban environments

13. (a) (i) State the six-figure grid reference for Ewing Park School in the northern part of the map. [1]

176104 /176103

- (ii) Estimate the distance, in kilometres, between the two buildings marked **A** and **B** on the northern part of the map. [1]

Accept answers between 1.5km -1.7km

- (b) Outline, using map evidence, **one** factor that might explain the absence of built-up areas to the south of Cheatham Lake. [2]

Award [1] for the factor and [1] for explanation / development.

For example, flat land [1] at risk of flooding / on the flood plain [1]

Other factors include:

- Recreational areas- golf course
- Possible wetlands- protected biodiversity

- (c) Explain **two** different ways in which human activities can modify the microclimate in an urban area. [3 + 3]

Award [1] for a way and up to [2] for development / explanation / developed exemplification.

For example, the increased use of concrete / tarmac in urban areas [1] causes the rise in temperature [1] due to the absorption of solar radiation / reduced albedo [1].

For example, vehicles emit exhaust gases [1] which causes air pollution / increased smog [1] which can create an urban heat island effect [1].

Other microclimate modifications include:

- changes in wind speed and air flow
- changes in local rainfall patterns
- change in humidity levels
- frequency of fog

14. (a) Examine the extent to which management strategies have reduced the impacts of traffic congestion in **one or more** urban areas. [10]

Marks should be allocated according to the markbands.

Traffic congestion is a significant problem in many urban areas, caused by a combination of rapid population growth and economic development, poor road infrastructure, lack of public transport and land-use patterns. Increasing traffic congestion has severe economic, social and environmental impacts.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Traffic congestion is a rapidly increasing problem in many urban areas
- Congestion causes significant economic, social and environmental impacts, including noise and air pollution, increased costs and journey times, stress and other health issues.
- Strategies to reduce the impact of congestion include: improvements to public transport, restricting vehicle access to affected urban areas, increases in parking and other charges, improvements to road infrastructure (creating more roads, or widening existing routes), and improvements to vehicle emissions.
- Success of management strategies depends on a variety of factors: effective governance, cost of implementation, public acceptance and compliance, education, and increased awareness/perception. Also, improved urban planning, and encouragement of alternative modes of transport.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that shows understanding of the causes and impacts of traffic congestion in urban areas, and the effectiveness of different management strategies. The role and power of different stakeholders, governance, availability of capital are also important, at different scales, within and between urban areas.

For 5–6 marks, expect a weakly-evidenced outlining of one or more ways of reducing urban traffic congestion

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of management strategies aimed at reducing the impacts of urban traffic congestion, perhaps examining the relative success of strategies to reduce congestion
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, perhaps examining the extent to which strategies have reduced congestion

For 9–10 marks, expect both of these traits.

- 14 (b) Examine the importance of physical factors **and** land values on the pattern of economic activities in urban areas. [10]

Marks should be allocated according to the markbands.

Patterns of economic activities will vary between different cities, influenced by physical and economic factors, land values, proximity to the central business district, and urban planning. Physical factors may have both a positive and a negative influence: including relief, drainage, access to rivers and estuaries, and on economic factors such as land value and transportation. Land values are also influenced by locational factors such as proximity to the central business district. Urban planning is important in newly created cities, but also affects patterns of land use in existing, older urban areas.

Possible **applied** themes (AO2) demonstrating **knowledge and understanding** (AO1):

- Physical factors affecting land use include relief, drainage, access to rivers and estuaries. These factors may also affect land values: for example, low-lying areas of flat relief near rivers may have relatively low value and be suitable for industrial activity
- Land values are influenced by proximity to the CBD: high order retailing close to the centre; retail parks requiring large physical space and lower land values on the urban fringe
- Economic activities might include retail, commercial and industrial.
- Other factors are also important, including the role of planning, provision of infrastructure and transportation, and the pattern of residential areas
- Land use planning is important in newly built cities and new towns, but also in urban renewal schemes and regeneration projects

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the importance and interactions between physical factors and land values, and of other influences (such as planning) on the pattern of economic activities, in different places and time scales.

For 5–6 marks, expect a weakly-evidenced outlining of one or more physical and /or land value factors influencing the pattern of economic activities.

For 7–8 marks, expect a structured account which includes:

- Either an evidenced examination of physical factors and land values and their importance, and possibly examining the importance of other factors affecting patterns of economic activity
- Or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives

For 9–10 marks, expect both of these traits.
