M23/3/GEOGR/BP1/ENG/TZ0/XX/M

Diploma Programme
Programme du diplôme
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Markscheme

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Geography

Higher level and standard level

Paper 1

25 pages

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	**The response is too brief, lists unconnected information, is not focused on the question and lacks structure.**		
	• 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.	• No evidence of evaluation or conclusion is expected at this level.	• Information presented is not grouped logically (in paragraphs or sections). • Maps, graphs or diagrams are not included, are irrelevant or difficult to decipher (only if appropriate to the question).
3–4	**The response is too general, lacks detail, is not focused on the question and is largely unstructured.**		
	• 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.	• If appropriate to the question, the conclusion is irrelevant. • There is no evidence of critical evaluation of evidence (examples, statistics and case studies).	• Most of the information is not grouped logically (in paragraphs or sections). • Maps, graphs or diagrams included lack detail, are incorrectly or only partially interpreted without explicit connections to the question (only if appropriate to the question).
5–6	**The response partially addresses the question, but with a narrow argument, an unsubstantiated conclusion, and limited evaluation.**		
	• 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.	• If appropriate to the question, the conclusions are general, not aligned with the evidence presented and/or based on an incorrect interpretation of the evidence. • Other perspectives on evidence (examples, statistics and case studies) and/or strengths and weaknesses of evidence are **listed**.	• Logically related information is grouped together (in sections or paragraphs) but not consistently. • Maps, graphs or diagrams included do not follow conventions, and include relevant and irrelevant interpretations in the text (only if appropriate to the question).

<table>
<tr><td>7–8</td><td colspan="3">The response addresses the whole question, the analysis is evaluated and the conclusion is relevant but lacks balance.</td></tr>
<tr><td></td><td>• 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.</td><td>• If appropriate to the question, the conclusion is relevant to the question, aligned with the evidence but unbalanced.
• Other perspectives on evidence (examples, statistics and case studies) and/or strengths and weaknesses of evidence are described.</td><td>• Logically related information is grouped together (in sections) consistently.
• Maps, graphs or diagrams included contribute to/support the argument or analysis (only if appropriate to the question).</td></tr>
<tr><td>9–10</td><td colspan="3">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.</td></tr>
<tr><td></td><td>• 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.</td><td>• If appropriate to the question, the conclusion is relevant to the question, balanced and aligned with the evidence.
• Evaluation includes a systematic and detailed presentation of ideas, cause and effect relations, other perspectives; strengths and weaknesses of evidence are discussed; (if appropriate) includes justification of the argument and conclusion.</td><td>• Response is logically structured with discussion (and if appropriate to the question, a conclusion) focusing on the argument or points made, making it easy to follow.
• Maps, graphs or diagrams are annotated following conventions and their relevance is explained and support the argument or analysis (only if appropriate to the question).</td></tr>
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Option A — Freshwater

1. (a) (i) State the direction of flow of the Darling River. **[1]**

SW

(ii) Estimate the length of the wetland, in kilometres, between **A** and **B.** **[1]**

280 km. (*Allow answers between 260 and 300 km).*

(b) Outline **one** benefit of maintaining a wetland area. **[2]**

*Award [**1**] for the benefit and [**1**] for explanation.*

For example: Wetlands provide a habitat for wildlife [**1**] so improving the biodiversity in the area [**1**].

Other possible benefits include:
- Improve water quality/supply
- Provide flood control
- Pollution filter
- Opportunities for education/research
- Recreational opportunities
- Carbon sink

(c) Explain **one** pressure on wetlands from agriculture **and one** pressure on wetlands from altered water flow. **[3+3]**

*Award **[1]** for the pressure and **[2]** for development/explanation in each case.*

<u>Agriculture</u>
For example: Eutrophication **[1]** can occur when fertilizer applied to farmland nearby runs off into the water **[1]** causing algae blooms and a decrease in water quality/biodiversity **[1]**.

<u>Altered water flow</u>
For example: Wetlands can be drained **[1]** for development of infrastructure **[1]** in order to house a growing population **[1]**.

Other pressures include:
- Draining of wetlands for agriculture
- Irrigation or water abstraction – lowers water tables
- Drought – lowers water tables
- Tourism and recreation – must be linked to altered water flow
- Dam construction – restricting flow of water into wetlands

Do not double credit if same point used for both parts of the question

2. (a) Examine the view that it is increasingly difficult to predict river flooding. **[10]**

Marks should be allocated according to the markbands.

Prediction of frequency and magnitude of river flooding is increasingly difficult, especially with the impact of climate change on weather systems and uncertainty in climate modelling. Human activity within drainage basins can also increase the risk of flooding in unpredictable ways. However, it may be argued that with the increasing power of computer technology, weather satellites, remote sensing and monitoring stations, river floods are easier to predict. But this may only apply to advanced industrial societies.

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

- River flooding is an increasing problem, partly due to the effects of climate change on weather systems and rainfall patterns, and also because of human activities altering the characteristics of drainage basins.
- Flood prediction involves: weather forecasting, to determine precipitation inputs (amount, intensity and duration), and analysis of the hydrograph characteristics of drainage basin to determine river responses and the possibility of flooding.
- Weather forecasting, using data collection, satellite technology, and computer modeling is becoming more accurate. Also, instrumentation of drainage basins makes flood prediction (timing and intensity) more reliable.
- Possible long-term changes to weather systems caused by climate change has increased the uncertainty of climate modeling and unpredictability of weather systems.
- The increasing impact of human activity on drainage basins, (including deforestation, urbanization and channel modification) impacts on characteristics of storm hydrographs and increase the risk of flooding.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines processes and systems affecting the accuracy and reliability of forecasting flood events in different places. Another approach might be to examine how future risks may increase over longer time scales.

For 5-6 marks, expect some weakly-evidenced outlining of the difficulties and/or ease of predicting river flooding.

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

- either an evidenced explanation of the difficulties and/or ease of predicting flooding due to climate change, human activity, technology.
- or a discursive conclusion (or ongoing evaluation of the different views) grounded in geographical concepts and/or perspectives.

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

2. (b) Examine why water management issues might be a cause of conflict between stakeholders. **[10]**

Marks should be allocated according to the markbands.

Water management issues include agricultural activities, tourism, domestic and industrial use, all of which can have a significant impact on water quality. The focus should be on the problems of water management and the differing, sometimes conflicting, views of stakeholders.

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

- Management of water may give rise to conflict between different stakeholders. These include farmers, tourism, local communities, agribusiness, planners, water authorities, government agencies, scientists and national governments.
- Stakeholders, of different powers, may have conflicting views and perspectives regarding the management of water.
- Agricultural activities adversely affect water quality through eutrophication and irrigation/salinization.
- The differing views of stakeholders must be reconciled in order for water to be managed for a sustainable future.
- There could be cooperation between stakeholders to manage water use.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines the power of different stakeholders in relation to the conflicts caused by water management issues, and the possibilities for management at different scales and places.

For 5-6 marks, expect some weakly-evidenced outlining of at least one water management issue.

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

- either an evidenced examination of the difficulties of managing water and the roles/power of different stakeholders
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Option B — Oceans

3. (a) Using the photograph, identify **two** different coastal landforms formed by marine erosion. **[1+1]**

- Cliff
- Stack/stump
- Wave cut platform
- Headland
- Bay

(b) Outline **one** subaerial process that contributes to the erosion of coastal landforms. **[2]**

*Award **[1]** for a valid process and **[1]** for explanation.*

For example, weathering **[1]** from cycles of wetting/drying weakening the rock and making it more liable to collapse. **[1]**

Accept salt, biological, chemical, or physical weathering but not marine process weathering/erosion e.g. hydraulic action by waves.

Other subaerial processes include:
- Mass movement
- Running water
- Wind

(c) Explain how changes in sea level contribute to the formation of:

(i) a raised beach; **[3]**

*Award **[1]** for an understanding of the landform and up to **[2]** for development/explanation.*

For example: A raised beach is above the current sea level **[1]**. This is formed by ice melting **[1]**, leading to uplift of the land (rebound) when the pressure is released **[1]**.

(ii) a fjord. **[3]**

*Award **[1]** for an understanding of the landform and up to **[2]** for development/explanation.*

For example: A fjord is a glacial valley flooded (by the sea) **[1]** caused when a rise in sea level takes place **[1]** after ice melts **[1]**.

4. (a) Examine how the increasing demand for abiotic resources in ocean areas may be a source of international conflict. **[10]**

Marks should be allocated according to the markbands.

Abiotic resources include minerals, oil and gas. Increasing demand, especially for fossil fuels, has resulted in exploration and exploitation of deposits below the ocean floor. This has increased the strategic value of oceans and is a potential cause of international conflict in contested ocean areas. Possibilities for managing international conflict concern resolving ownership issues and rights to exploit mineral deposits, involving local, national and international agreements and laws.

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

- Abiotic resources include minerals, oil and gas (Do not credit biotic resources, such as fish).
- Increasing demand for resources below ocean floors is a potential cause of international conflict.
- Ownership of ocean areas may be in doubt and contested at the national and international scale.
- Management of conflict involves resolving contested ownership, international laws and allocation of territorial rights/limits which may reduce conflict/make conflict less likely.
- Stakeholders include national governments and transnational mining corporations, and/or international organizations such as the UN and NGOs.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) which examines a variety of reasons for international conflict, and the roles/power of different stakeholders, in different places. Another approach might be to examine the varying perspectives on the effectiveness of management strategies.

For 5-6 marks, expect some weakly-evidenced outlining of why increasing demand for abiotic resources may lead to international conflict.

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

- either an evidenced explanation of the sources of international conflict concerning the increased demand for resources
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives, perhaps recognizing that conflicts may be overcome/minimized.

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

*Award a maximum of **[4]** if biotic resources e.g. fish are the focus of the answer.*

4. (b) Examine why it is difficult to reduce the impacts of hurricanes on coastal places and people. **[10]**

Marks should be allocated according to the markbands.

Hurricanes may cause serious impacts to coastal places and people, through damage caused by flooding, storm surges and strong winds. Tropical regions are especially vulnerable to hurricane impacts. Impacts may be reduced by forecasting and prediction of hurricane events, constructing adequate defenses against flooding, and strategies to increase resilience and minimize risk to coastal communities.

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

- Hurricanes cause serious flooding in coastal areas, due to both heavy, prolonged rain, and storm surges caused by strong winds. Strong winds may also cause serious damage to buildings and other infrastructure.
- Hurricanes are difficult to predict/forecast: timing, tracks and strength. Coastal areas may therefore be unprepared.
- Global climate change, and rise in sea levels, may result in an increase in hurricane frequency and intensity, and requires global effort.
- Both rural and urban population pressures are increasing on vulnerable coastal margins, many of which are low-lying, and may be below sea-level.
- Hurricanes often affect relatively poor countries – they cannot afford to build/maintain adequate defenses against flooding; warning systems may be inadequate; problems of poor communication systems.
- Costly and difficult to improve poorly constructed buildings and infrastructure.
- Poorer communities may lack resilience and preparation, which are difficult to overcome.
- Government and local planning may be inadequate, partly due to unforeseen power of some hurricanes.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines processes and systems affecting the level of impacts in different coastal places. Also, the varying power of different stakeholders may be examined. Another approach might be to examine how it can be challenging to reduce impacts over longer time scales.

For 5-6 marks, expect some weakly-evidenced outlining of how the impact of hurricanes on places and people may be reduced

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

- either an evidenced explanation of the difficulties of reducing the impacts of hurricanes on people and places
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Option C — Extreme Environments

5. (a) (i) Identify the country that has the most mountainous area vulnerable to desertification. **[1]**

Pakistan

(ii) Estimate the percentage of land area in the Philippines vulnerable to desertification. **[1]**

10% *(accept 8-12)*

(b) Outline **one** way in which technology can increase access to water in arid environments. **[2]**
*Award **[1]** for a valid technology and **[1]** for development.*

For example: Desalinization plants **[1]** removing salt from seawater producing water to irrigate crops/provide potable water **[1]**.

Other technologies include:
- Solar powered wells
- Water conservation techniques
- Irrigation using technology
- Drilling to underground aquifers
- Water transfer schemes
- Small scale water retention technique

(c) Explain how the process of desertification can be increased by:

(i) overgrazing; **[3]**

*Award **[1]** for an understanding of overgrazing and up to **[2]** for further explanation/development/developed exemplification.*

For example: Overgrazing means means more vegetation than can regrow is removed by grazing animals **[1]** so the ground/soil is not protected by vegetation **[1]** and can become compacted/eroded and unusable **[1]**.

(ii) conflict. **[3]**

*Award **[1]** for an understanding of how conflict contributes to desertification and up to **[2]** for further explanation/development/developed exemplification.*

For example: Conflict (e.g. civil wars/war) diverts resources away from environmental issues **[1]** so less time/money is spent on improving soil quality/reforesting etc **[1]** and ground/soil becomes useless for farming **[1]**.

6. (a) Examine the importance of glacial erosion in creating unique landscapes in glaciated upland areas. **[10]**

Marks should be allocated according to the markbands.

Glaciated upland areas are dominated by distinctive landscapes created by glacial erosion. However, other processes, including glacial deposition, periglacial, fluvial and other sub-aerial processes are also important in the formation of upland landscapes.

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

- Landscape features caused by glacial erosion include corries/cirques, pyramidal peaks/horns, arêtes, glacial troughs.
- Landscapes of glaciated uplands may also reflect processes such as glacial deposition, periglacial activity and subaerial processes.
- Depositional features are also important, including various types of moraine: lateral, medial, terminal.
- Other processes are also important in glaciated uplands, including freeze-thaw and other periglacial processes, creating landscapes, such as scree slopes, solifluction terraces and lobes and patterned ground.
- Fluvial and other sub-aerial processes are also important in the formation of landscapes, especially in post-glacial times.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines the role of glacial erosion in the formation of landscapes in glaciated upland areas, and its relative importance in relation to other processes. Another approach might be to examine how different processes may be important over longer time scales.

For 5-6 marks, expect some weakly-evidenced outlining of how glacial erosion creates one or more landforms.

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

- either an evidenced explanation of the importance of glacial erosion in the formation of different landforms
- or a discursive conclusion (or ongoing evaluation) of the relative importance of glacial erosion and other glacial and sub-aerial processes in the formation of landscapes.

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

6. (b) Examine how competition for resources in **one or more** extreme environments has led to conflict between different stakeholders. **[10]**

Marks should be allocated according to the markbands.

Arid and cold extreme environments possess considerable and increasingly important natural resources, including minerals, freshwater and scenic resources. Competition for access to resources has resulted in increasing tensions and conflicts between different stakeholders, especially between indigenous peoples and external organizations.

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

- Extreme environments contain significant resources such as fish, minerals, timber, oil and gas.
- Stakeholders include local indigenous peoples, national governments, TNCs, and environmentalists. These have differing priorities and concerns.
- Differing issues and viewpoints concerning exploitation of resources may lead to tensions and conflict between stakeholders.
- Conflicting viewpoints of stakeholders must be managed for the benefit of environments and communities.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines the differing viewpoints and conflicting issues of stakeholders, the varying power of stakeholders and future possibilities of managing conflicts.

For 5-6 marks, expect some weakly-evidenced outlining of how competition for resources may result in conflict.

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

- either an evidenced explanation of how competition for resources has resulted in conflict between stakeholders
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Option D — Geophysical Hazards

7. (a) (i) State the lava thickness that covers the largest area. **[1]**

0-19 (m) (*only answer*)

(ii) State the line of longitude nearest to the lava flow. **[1]**

155 °W *(must have W)*

(b) Outline **one** reason why the lava from a shield volcano spreads over a wide area. **[2]**

*Award **[1]** for a valid reason and **[1]** for development.*

For example: The magma is low in silica and gas/non-explosive/basaltic **[1]** and produces thin runny/low viscosity lava **[1]**.

(c) Explain how **two** different communications technologies can help with the post-event management of geophysical hazards. **[3+3]**

*Award **[1]** for stating a valid communications technology and up to **[2]** for development/explanation.*

For example: Use of phone/laptop **[1]** enables information to be posted about missing children **[1]** allowing users to track and find children **[1]**.

Other possibilities include:
- Drones – to envisage damage caused by hazards
- Satellite images/remote sensing – to map hazards
- Disaster management plan via internet/computer technology
- Social media

8. (a) Examine the importance of physical **and** human factors in increasing mass movement events. **[10]**

Marks should be allocated according to the markbands.

Mass movements (landslides, mudflows, rock-falls, and avalanches); commonly occur on steep slopes in mountainous areas. Physical and human factors may lead to an increase in the magnitude and frequency of mass movements. Tectonic activity and climatic factors, such as heavy rainfall, snowfall, and frost action, may increase slope instability, triggering mass movement. Increases in magnitude/frequency may result from climatic change and increased tectonic activity. However, human factors may be of more immediate importance, especially in areas of rugged terrain. Population increases and urbanization, removal of vegetation cover, deforestation and increases in slope steepness due to construction will increase slope instability. Mass movement events may not increase in all places, as slope stabilization measures and effective management strategies may be undertaken.

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

- Mass movement events frequently occur on steep slopes in mountainous areas.
- Caused by both physical and human factors, which may result in an increase in the frequency and magnitude of mass movement.
- Tectonic activity, including earthquakes and volcanoes, and climatic factors, such as heavy rain and snowfall, may upset slope stability and trigger mass movement.
- Short- and long-term climatic change may result in increased mass movement, as will changes in tectonic activity.
- However, human factors may be of more immediate importance, especially in areas of rugged terrain.
- Increased population pressure, urban growth, deforestation, and increases in slope steepness caused by infrastructure development will increase slope instability.
- Magnitude/frequency may not increase in all places because slope stabilization measures and effective management strategies may be undertaken, especially in economically more developed places
- Human actions may result in a decrease in mass movement events e.g. through slope stabilization.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines the relative importance of physical and human processes affecting the magnitude and frequency of mass movement in different places. Another approach might be to examine how future risks vary between places over different time scales. Mass movements might be decreasing in some places.

For 5-6 marks, expect some weakly-evidenced outlining of at least one physical or human factor increasing a mass movement event.

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

- either an evidenced explanation of how physical and human factors may lead to an increase in magnitude/frequency of mass movement.
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

8. (b) Examine how economic **and** social factors may reduce the vulnerability of communities to geophysical hazard risk. **[10]**

Marks should be allocated according to the markbands.

The vulnerability of people to geophysical hazard risk is affected by a variety of economic and social factors. These include levels of wealth and education, past experience, personal knowledge, preparedness and risk perception. These will vary between and within different local communities, and they may change over time.

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

- Geophysical hazards represent a significant threat to many communities around the world; many large cities are located on plate margins, close to active volcanoes and earthquake zones.
- Vulnerability is a product of the likelihood/probability of a hazardous event occurring and the consequences in terms of injury, death and destruction.
- Economic factors affecting vulnerability include wealth and infrastructure and communications, planning.
- Social factors include perception of the risk; population characteristics, education and literacy levels.
- Perception of the hazard will affect management and levels of preparedness to reduce risk from future events.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) which examines the relationship between risk and vulnerability and why levels of vulnerability vary between communities in different places. Another approach might be to examine the relative importance of social and economic factors, or how other factors (such as political) may affect economic/social vulnerability.

For 5-6 marks, expect some weakly-evidenced outlining of at least one economic and/or social factor(s) reducing vulnerability to geophysical hazards.

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

- either an evidenced explanation of a variety of social and economic factors reducing vulnerability to geophysical hazards in different communities
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Option E — Leisure, Tourism and Sport

9. (a) (i) State the increase in visitors from Malaysia, in millions, between 2010 and 2018. **[1]**

2 (million)

(ii) State the years between which the number of visitors from China increased the most. **[1]**

2014-15

(b) Outline **one** reason why the growth of diaspora can encourage tourists to a region. **[2]**

*Award **[1]** for a valid reason and **[1]** for development/explanation/explained exemplification.*

For example: The growth in diaspora encourages visitors from out of the area to visit family and friends **[1]** which can lead to development/expansion of local facilities such as cafes/restaurants/trails/museums – thereby attracting more tourists **[1]**.

For example: It encourages a larger number of the diaspora to visit their home country as tourists to trace their roots **[1]** for example the descendants of those who came to the West Indies as indentured labourers travel as tourists to their country of origin, India **[1]**.

Answers may relate to the region of origin of the diaspora or the region of residence

(c) Explain the effects over time on visitor numbers caused by:

(i) social media; **[3]**

*Award **[1]** for explaining the factor/effect and up to **[2]** for development/explanation.*

For example: Advertising/reviews/influencers on social media/internet **[1]** have changed the way people research trips/share experiences **[1]** e.g. positive reviews of hotels and good customer feedback can affect decisions, leading to an increase in visitor numbers **[1]**.

(ii) carrying capacity being exceeded. **[3]**

*Award **[1]** for explaining the factor/effect and up to **[2]** for development/explanation.*

For example: Too many visitors to an area can cause overcrowding/environmental damage **[1]** such as noise and congestion from traffic/partying groups **[1]** which can deter people and decrease visitor numbers **[1]**.

10. (a) Examine the long-term benefits **and** costs to a country hosting an international sporting event. **[10]**

Marks should be allocated according to the markbands.

International sporting events include the Olympics, the FIFA World Cup and the Paralympic Games. Hosting such events may bring considerable prestige to a country, together with other economic, social and political benefits. However, there may be significant long-term costs, and the benefits may be unevenly distributed within the country.

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

- Raising the international profile/reputation of a country: may result in increased tourism and economic investment.
- Improvements to transport infrastructure; urban regeneration.
- Economic investment into various regions within the country; this may be uneven.
- Legacy of improved sporting facilities, and of participation in sporting activities
- Increased inclusion of disability groups and gender equality.
- Increased diversity of recognized sports, resulting in greater funding.
- Environmental impacts such as loss of biodiversity, or positive impacts such as cleaning up of the area.
- Legacy of debt, owing to high costs of hosting the events; possible under-used stadia; economic boost and job creation may be temporary.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the benefits and costs from different perspectives or on varying time or spatial scales. Another approach might be to examine why some places have benefited more than others and the varying power of different places and people.

For 5–6 marks, expect some weakly-evidenced outlining of some relevant benefits and/or costs.

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

- either an evidenced explanation of long-term benefits and costs for a country
- or a discursive conclusion (or ongoing evaluation) of the relative importance of benefits and costs to one or more countries.

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

10. (b) Examine reasons for variations in the spheres of influence for different kinds of leisure facility. **[10]**

Marks should be allocated according to the markbands.

Leisure facilities might include small venues, such as gyms, swimming pools and skateboarding parks, and large venues such as sports stadiums. They are usually located within or close to urban areas, with easy access to client populations. The number, size and importance of such facilities will vary according to threshold and range of client populations. Other factors, such as relative wealth and political influence may also be important.

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

- Sphere of influence, or catchment area, of facilities will be affected by the threshold and range of populations utilizing the facilities.
- Threshold populations for, low-order facilities such as local gyms are usually low; they will be more frequent and have a small sphere of influence.
- National parks are in designated areas of outstanding natural beauty which generate their own sphere of influence.
- High-order facilities, such as sports stadiums, will have high threshold populations and a large sphere of influence.
- Accessibility is also important; facilities with good communications links, larger spheres of influence. Local gyms may be accessible to a large urban population, in both city centres and suburban areas.
- Stadia of wealthy sports teams with high reputations have larger spheres than smaller, poorer teams.
- Multi-purpose stadia will host a variety of different events and people from a wide area.
- Media has a powerful influence, extending the sphere of influence to national and international scales.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3) which examines reasons for variations in spheres of influence for different types of leisure facility. How human and physical factors shape <u>places</u> into sites of leisure. Another approach might be to examine why differences in economic and political <u>power</u> influence distribution and variety of leisure facilities.

For 5–6 marks, expect some weakly-evidenced outlining of the sphere of influence for at least one leisure facility.

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

- <u>either</u> an evidenced explanation of variations in spheres of influence for a range of different leisure facilities
- <u>or</u> a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

For 9–10 marks, expect <u>both</u> of these traits.

Option F — Food and Health

11. (a) (i) Identify the farm product that has the lowest energy output. **[1]**

Lettuce

(ii) Identify the farm product that has the highest energy efficiency. **[1]**

Cassava

(b) Outline **one** way in which energy input changes as a result of mechanization. **[2]**

*Award **[1]** for a valid way that energy input changes, and **[1]** for further explanation, development/developed exemplification.*

For example: Mechanization requires increased fossil fuel usage **[1]** as machinery requires diesel **[1]**.

Other possibilities include:
- less human energy

(c) Explain how food insecurity could be reduced by the use of:

(i) *in vitro* meat; **[3]**

*Award **[1]** for showing understanding of what in vitro meat is, **[1]** for development/explanation and **[1]** for a link to reducing food insecurity*

For example: Synthetic/lab-grown meat **[1]** is produced in a shorter time period than traditional meat **[1]** so more meat is produced and more food is therefore available **[1]**

(ii) vertical farming. **[3]**

*Award **[1]** for showing understanding of what vertical farming is, **[1]** for development/explanation and **[1]** for a link to reducing food insecurity*

For example: Growing crops in buildings/greenhouses one above the other **[1]** therefore using less land **[1]** making food more accessible to urban populations **[1]**.

12. (a) To what extent are diseases linked to malnutrition? **[10]**

Marks should be allocated according to the markbands.

There is a connection between malnutrition and disease. Malnutrition, or undernutrition caused by lack of food or proper nutrition, is prevalent in low-income countries. This leads to low weight and height, diseases such as rickets and scurvy, and a weakened immune system to a variety of infectious diseases. Malnutrition also includes over-nutrition, especially in high-income countries, where an excess of food can lead obesity and non-communicable diseases such as diabetes and cardio-vascular disease. However, factors other than malnutrition cause infectious diseases (e.g. cholera, malaria), including access to safe drinking water, sanitation and overcrowding. These factors are also related to poverty and malnutrition. The cycle of poverty, malnutrition, poor health, and disease is difficult to break and overcome.

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

- Diseases caused by malnutrition are common in low-income countries. Food insecurity means that people do not have enough to eat or a diet that lacks proper nutrition.
- Malnutrition results in stunted growth, diseases such as rickets and scurvy and a weakened immune system to infectious diseases.
- Malnutrition also includes over-nutrition, where an excess of food can lead to obesity and diseases such as diabetes and cardio-vascular disease.
- Infectious diseases, such as cholera, malaria and TB, are not directly caused by malnutrition but are linked to factors such as access to safe drinking water, sanitation and overcrowding.
- Poverty is a major cause of high incidence infectious diseases and of diseases caused by malnutrition.
- Poverty is a link between malnutrition, poor health and disease. The scale of the disease is intensified and can last from one generation to another.
- The cycle of poverty, malnutrition, poor health, and disease is difficult to break and overcome.

Good answers may be **well-structured** (AO4) and may additionally offer a **critical evaluation** (AO3), which examines the processes and links between diseases, malnutrition and other factors in different places. Another approach might be to examine how relationships may change over time scales, such as breaking the poverty cycle.

For 5-6 marks, expect some weakly evidenced outlining of a link between malnutrition and disease

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

- either an evidenced examination of links between malnutrition, other contributory factors and disease,
- or a discursive conclusion (or on-going evaluation) grounded in geographical concepts and/or perspectives.

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

12. (b) Examine how geographic factors affect the rate of diffusion of agricultural innovation. **[10]**

Marks should be allocated according to the markbands.

Diffusion involves the adoption and spread by expansion and relocation of agricultural innovations. These may include new technologies, changes to farming systems and new, improved seeds and livestock. The diffusion of agricultural change is uneven, both spatially and in speed of adoption. The rate of diffusion is influenced by a range of geographic factors, including physical, economic, social and political.

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

- The processes of diffusion include adoption/acquisition, expansion, and relocation.
- Rates of diffusion and extent of adoption vary considerably over time and space and are affected by a range of different geographic factors (physical, economic, social and political).
- Physical factors include type of terrain, climate, access to water, and soil quality. Innovations tend not to spread easily across geographical barriers such as mountains, deserts and oceans. The potential of agricultural change to cause environmental damage may be a barrier.
- Economic factors include relative wealth and poverty, and access to capital and loans. Land availability, patterns of ownership and type of agricultural system (e.g. subsistence or agribusiness). Communications and infrastructure are also important.
- Social and political factors might include education and training, out-reach schemes, and the role of NGOs in promoting/facilitating agricultural change. Isolation due to government actions slow access to innovation. Political stability, and the role of women, are also important factors.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the different geographic factors and processes leading to varying rates of agricultural innovation in different places. Another approach might be to examine why innovation has affected some places more than others, and the power of different stakeholders.

For 5–6 marks, expect some weakly-evidenced outlining of at least one geographic factor affecting diffusion in agriculture innovations.

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

- either an evidenced explanation of two or more geographic factors and links to rates of diffusion in agriculture innovations
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Option G — Urban Environments

13. (a) (i) State which city in Africa grew the most between 2015 and 2020. **[1]**

Kinshasa (DRC). *(Do not accept DRC on its own).*

(ii) Identify how many new people per hour were added to the city of Shanghai in 2020. **[1]**

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(b) Outline **one** environmental problem caused by the rapid population increase of cities. **[2]**

*Award **[1]** for the problem and **[1]** for development/explanation.*

For example: Water polluted **[1]** by sewage due to the growth of shanty towns **[1].**

Other problems include, but are not limited to:
- loss of biodiversity/natural habitats
- air pollution from traffic
- human environmental problems e.g. overcrowding, stress, health issues, crime.

(c) Explain why large cities continue to grow as a result of:

(i) **one** economic factor; **[3]**

*Award **[1]** for the factor and up to **[2]** for development/explanation.*

For example: Higher wages/job opportunities in the city **[1]** so rural-urban migration takes place **[1]** due to a desire for better standards of living **[1]**.

Other factors include, but are not limited to:
- push factors from the countryside, such as high unemployment.

(ii) **one** demographic factor. **[3]**

*Award **[1]** for the factor and up to **[2]** for development/explanation.*

For example: Natural increase **[1]** due to large numbers of young people/youthful population **[1]** so city grows outwards to provide housing **[1]**.

Other factors include, but are not limited to:
- people are living longer due to better healthcare available.

14. (a) Examine the impacts of slum clearance schemes on **one or more** neighbourhoods. **[10]**

Marks should be allocated according to the markbands.

Slum clearance is an urban renewal and redevelopment strategy aimed at transforming poor quality, low-income neighbourhoods into areas of better quality housing and residential services. The aim is to reduce urban stress and improve people's quality of life. Schemes are not always successful and may be ineffective. The clearance of slums may result in the displacement of people, the break-up of communities and removal of informal sector employment. The removal of slums does not remove the causes of poverty, creates stress on already short housing stock and may create slums in other areas.

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

- Slum clearances may affect cities in countries at different levels of economic development. For example: squatter settlements in low-income countries, and inner-city slums in high income countries.
- These are areas of economic and social deprivation, with low-quality housing, low incomes, lacking basic facilities, and high crime rates.
- Schemes may involve slum clearance, or slum improvement (upgrading of existing areas).
- The effectiveness of slum clearance in the management of urban stresses
- These may have significant positive and negative impacts on local neighbourhoods, communities and environments.
- Slum clearance should be accompanied by provision of alternative housing; may put further stress on housing; displaced neighbourhoods; new housing areas may be unaffordable.
- The power and role of different stakeholders, including city planners, developers and local communities, with differing viewpoints and perspectives.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the impacts of schemes in different <u>places,</u> and the <u>power</u> of different stakeholders (e.g. residents, planners, developers), in the management of impacts. Another approach might be to examine the impact of slum clearance schemes from the perspective of different stakeholders.

For 5–6 marks, expect some weakly-evidenced outlining of the impact of slum clearance on at least one neighbourhood.

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

- <u>either</u> an evidenced explanation of the positive and negative impacts of slum clearance on one or more neighbourhoods
- <u>or</u> a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

For 9–10 marks, expect <u>both</u> of these traits.

14. (b) To what extent do centrifugal population movements affect residential areas of cities? **[10]**

Marks should be allocated according to the markbands.

Centrifugal population movements include both suburbanization and counter-urbanization. The outward movement of population, caused by a variety of social, economic, and political processes, and facilitated by developments in transport and communications. Centrifugal population movement has had a significant impact on residential areas, including suburban sprawl, growth of urban commuter villages in the rural-urban fringe, and decline of population and urban decay in inner city areas. Centripetal population movement may also be considered, to respond to the "to what extent" part of the question.

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

- Centrifugal movements include suburbanization and counter-urbanization.
- Population movements may be caused by a variety of economic and demographic processes, facilitated by changes in transport, communications, and increasing car ownership.
- Planners and developers also have an influence on residential areas.
- Growth of residential areas, suburban housing estates and commuter villages.
- Urban sprawl, accompanied by industry, large retail and leisure facilities.
- Social and economic characteristics of the population.
- Out-migration, decline of housing, increased unemployment and social deprivation in inner-city areas.
- Removal of green spaces and destruction of wildlife habitats in surrounding countryside.
- Centripetal movements include gentrification and regeneration of city centres.

Good answers may be **well structured** (AO4) and may additionally offer a **critical evaluation** (AO3) of the statement in a way that examines the processes and effects of centrifugal population movement on residential areas in different places. Another approach might be to examine the power of different stakeholders, such as planners, developers and environmental groups.

For 5–6 marks, expect some weakly-evidenced outlining at least one effect of centrifugal population movement on residential areas.

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

- either an evidenced explanation of the extent to which centrifugal population movement affects different residential areas
- or a discursive conclusion (or ongoing evaluation) grounded in geographical concepts and/or perspectives.

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

Award maximum of 5-6 marks if a response uses a centripetal movement but shows understanding of the effect of population movement on residential areas.