

Please be advised that the exam board states:

- You should manage revision of parts of the specification that may be assessed in areas not covered by the advanced information.
- You should manage revision of other parts of the specification that may provide knowledge that helps with understanding the areas being tested in 2022.
- For specifications with synoptic assessment, topics not explicitly given in the advance information may appear (e.g. where students are asked to bring together knowledge, skills and understanding from across the specification). Students will be credited for any relevant knowledge from any areas when answering questions.
- Questions will be drawn from one or more of the indicated areas of specification content.
- Some questions may be answerable using more than one area of specified content, including the ones not listed.
- This specification contains three synoptic themes; players, attitudes and actions, futures and uncertainties. Shown in the specification below by P:, A: or F:.

GREEN = IDENTIFIED IN ADVANCE INFO

YELLOW = IDENTIFIED IN ADVANCE INFO FOR PAPER 3

Area of study 1: Dynamic Landscapes

Topic 1: Tectonic Processes and Hazards

Overview

Tectonic hazards – earthquakes, volcanic eruptions and secondary hazards such as tsunamis – represent a significant risk in some parts of the world. This is especially the case where active tectonic plate boundaries interact with areas of high population density and low levels of development. Resilience in these places can be low, and the interaction of physical systems with vulnerable populations can result in major disasters. An in-depth understanding of the causes of tectonic hazards is key to both increasing the degree to which they can be managed, and putting in place successful responses that can mitigate social and economic impacts and allow humans to adapt to hazard occurrence.

Tectonics sections are always 16 marks
Tectonics always has a 12-mark question
The remaining 4 could be a 4 mark explain question
or a 4-mark maths question

Content

Enquiry question 1: Why are some locations more at risk from tectonic hazards?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
1.1 The global distribution of tectonic hazards can be explained by plate boundary and other tectonic processes.	a. The global distribution and causes of earthquakes, volcanic eruptions and tsunamis. (1)	NO		
	b. The distribution of plate boundaries resulting from divergent, convergent and conservative plate movements (oceanic, continental and combined situations).	NO		
	c. The causes of intra-plate earthquakes, and volcanoes associated with hot spots from mantle plumes.	NO		
1.2 There are theoretical frameworks that attempt to explain plate movements.	a. The theory of plate tectonics and its key elements (the earth's internal structure, mantle convection, palaeomagnetism and sea floor spreading, subduction and slab pull).	NO		
	b. The operation of these processes at different plate margins (destructive, constructive, collision and transform). (2)	NO		
	c. Physical processes impact on the magnitude and type of volcanic eruption, and earthquake magnitude and focal depth (Benioff zone).	NO		
1.3 Physical processes explain the causes of	a. Earthquake waves (P, S and L waves) cause crustal fracturing, ground shaking and secondary hazards (liquefaction and landslides).	NO		

tectonic hazards.	b. Volcanoes cause lava flows, pyroclastic flows, ash falls, gas eruptions, and secondary hazards (lahars, jökulhlaups).	NO		
	c. Tsunamis can be caused by submarine earthquakes at subduction zones as a result of sea-bed and water column displacement. (3)	NO		

Enquiry question 2: Why do some tectonic hazards develop into disasters?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
1.4 Disaster occurrence can be explained by the relationship between hazards, vulnerability, resilience and disaster.	a. Definition of a natural hazard and a disaster, the importance of vulnerability and a community's threshold for resilience, the hazard risk equation.			
	b. The Pressure and Release model (PAR) and the complex inter-relationships between the hazard and its wider context.			
	c. The social and economic impacts of tectonic hazards (volcanic eruptions, earthquakes and tsunamis) on the people, economy and environment of contrasting locations in the developed, emerging and developing world.			<ul style="list-style-type: none"> • Explain the social impacts of volcanic eruptions on people, the economy and environment of developed places. • Explain the social impacts of earthquakes on people, the economy and environment of developed places. • Explain the social impacts of tsunami on people, the economy

and environment of developed places.

- Explain the social impacts of volcanic eruptions on people, the economy and environment of emerging places.
- Explain the social impacts of earthquakes on people, the economy and environment of emerging places.
- Explain the social impacts of tsunami on people, the economy and environment of emerging places.
- Explain the social impacts of volcanic eruptions on people, the economy and environment of developing places.
- Explain the social impacts of earthquakes on people, the economy and environment of developing places.
- Explain the social impacts of tsunami on people, the economy and environment of developing places.
- Assess to what extent vulnerability and resilience explain disaster occurrence.
- Assess the socio – economic impacts of volcanic eruptions in locations of varying levels of economic development

				<p>(developed, emerging, developing)</p> <ul style="list-style-type: none"> Assess the socio-economic impacts of earthquakes in locations of varying levels of economic development (developed, emerging, developing) Assess the socio-economic impacts of tsunamis in locations of varying levels of economic development (developed, emerging, developing).
<p>1.5 Tectonic hazard profiles are important to an understanding of contrasting hazard impacts, vulnerability and resilience.</p>	a.	The magnitude and intensity of tectonic hazards is measured using different scales (Mercalli, Moment Magnitude Scale (MMS) and Volcanic Explosivity Index (VEI)).		
	b.	Comparing the characteristics of earthquakes, volcanoes and tsunamis (magnitude, speed of onset and areal extent, duration, frequency, spatial predictability) through hazard profiles.		
	c.	Profiles of earthquake, volcano and tsunami events showing the severity of social and economic impact in developed, emerging and developing countries. (4)		
<p>1.6 Development and governance are important in</p>	a.	Inequality of access to education, housing, healthcare and income opportunities can influence vulnerability and resilience.		<ul style="list-style-type: none"> Assess how inequality influences vulnerability and resilience in hazard prone locations

understanding disaster impact and vulnerability and resilience.	b.	Governance (P: local and national government) and geographical factors (population density, isolation/accessibility, degree of urbanisation) influence vulnerability and a community's resilience.			<ul style="list-style-type: none"> ● Assess how governance influences a community's vulnerability and resilience. ● Assess how the scale of a disaster is influenced by physical and human factors (resilience and vulnerability) for named examples. ● Assess how important development and governance are in understanding disaster impact. ● Assess how important resilience and vulnerability are in the outcomes of disaster impact
	c.	Contrasting hazard events in developed, emerging and developing countries to show the interaction of physical factors and the significance of context in influencing the scale of disaster. (5)			

Enquiry question 3: How successful is the management of tectonic hazards and disasters?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.

1.7 Understanding the complex trends and patterns for tectonic disasters helps explain differential impacts.	a.	Tectonic disaster trends since 1960 (number of deaths, numbers affected, level of economic damage) in the context of overall disaster trends. (6); research into the accuracy and reliability of the data to interpret complex trends.			
	b.	Tectonic mega-disasters can have regional or even global significance in terms of economic and human impacts. (2004 Asian tsunami, 2010 Eyafjallajokull eruption in Iceland (global interdependence) and 2011 Japanese tsunami (energy policy))			
	c.	The concept of a multiple-hazard zone and how linked hydrometeorological hazards sometimes contribute to a tectonic disaster (20 the Philippines).			
1.8 Theoretical frameworks can be used to understand the predication, impact and management of tectonic hazards.	a.	Prediction and forecasting (P: role of scientists) accuracy depend on the type and location of the tectonic hazard.			<ul style="list-style-type: none"> • Explain how the accuracy of prediction depends on the type and location of a tectonic event. • Explain how the forecasting of a tectonic event depends on the type and location. • Explain how the role of scientists varies in the prediction and forecasting of tectonic events. • Explain how scientists predict and forecast tectonic events.
	b.	The importance of different stages in the hazard management cycle (response, recovery, mitigation, preparedness). (P: role of emergency planners)			

				<ul style="list-style-type: none"> • Explain how theoretical frameworks can be used to understand the prediction of tectonic hazards • Explain how theoretical frameworks can be used to understand the management of tectonic hazards • Explain how theoretical frameworks enable planners with response, recovery, mitigation and preparedness (can split this into 3 questions). • Assess the view that theoretical frameworks improve understanding of impact and management of tectonic hazards • Assess the extent to which theoretical frameworks support the different stages of the hazard management cycle. • Assess the importance of theoretical frameworks in prediction and forecasting of tectonic hazards.
	c.	Use of Park's Model to compare the response curve of hazard events, comparing areas at different stages of development.		
1.9 Tectonic hazard impacts can be managed by a variety of	a.	Strategies to modify the event include land-use zoning, hazard – resistant design and engineering defences as well as		<ul style="list-style-type: none"> • Explain adaptation and mitigation strategies for a range of tectonic hazards

mitigation and adaptation strategies, which vary in their effectiveness.	diversion of lava flows. (P: role of planners, engineers) (7)			<ul style="list-style-type: none"> ● Explain how land zoning can be used as a hazard management strategy ● Explain how hazard resistant design can be used as a hazard management strategy ● Explain how engineering defences such as lava flows can be used as a hazard management strategy. ● Explain the roles of planners and engineers in hazard management design and strategy ● Assess to what extent planners and engineers can mitigate for hazard impacts. ● Assess the view that adaptation and mitigation techniques are not always effective in hazard management. ● Explain how (use any of prediction, high tech monitoring, education, community preparedness, adaptation, forecasting models, disaster impacts with or without modification) modify vulnerability in communities affected by tectonic hazards. (this could be about 7 different questions if you mix and match the words in brackets
	b. Strategies to modify vulnerability and resilience include hi- tech monitoring, prediction, education, community preparedness and adaptation. (F: models forecasting disaster impacts with and without modification)			
	c. Strategies to modify loss include emergency, short and longer term aid and insurance (P: role of NGOs and insurers) and the actions of affected communities themselves.			

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| | | | | <ul style="list-style-type: none">• Explain the strategies used to modify loss in tectonic disasters.• Assess the role of NGOs and insurers in modifying loss to tectonic disaster affected communities.• Assess the effectiveness of strategies to modify vulnerability to tectonic hazard impacts. |
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Guidance for integrating geographical skills for Topic 1

The following skills provide suggested opportunities for integrating the full range of skills outlined in the geographical skills appendix (*Appendix 1*). These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study.

- (1) Analysis of hazard distribution patterns on world and regional scale maps.
- (2) Use of block diagrams to identify key features of different plate boundary settings.
- (3) Analysis of tsunami time-travel maps to aid prediction.
- (4) Use of correlation techniques to analyse links between magnitude of events, deaths and damage.
- (5) Statistical analysis of contrasting events of similar magnitude to compare deaths and damage.
- (6) Interrogation of large data sets to assess data reliability and to identify and interpret complex trends.
- (7) Use of Geographic Information Systems (GIS) to identify hazard risk zones and degree of risk related to physical and human geographical features.

Topic 2: Landscape Systems, Processes and Change Option 2B: Coastal Landscapes and Change

Coasts sections are always 40 marks
 Coasts always has a 20-mark question
 The remaining are 2 x 6 mark and 1 x 8 mark explain questions
 (These will be a mix of with and without resource)

Overview

Coastal landscapes develop due to the interaction of winds, waves and currents, as well as through the contribution of both terrestrial and offshore sources of sediment. These flows of energy and variations in sediment budgets interact with the prevailing geological and lithological characteristics of the coast to operate as coastal systems and produce distinctive coastal landscapes, including those in rocky, sandy and estuarine coastlines. These landscapes are increasingly threatened from physical processes and human activities, and there is a need for holistic and sustainable management of these areas in all the world's coasts. Study must include examples of landscapes from inside and outside the UK.

Content

Enquiry question 1: Why are coastal landscapes different and what processes cause these differences?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
2B.1 The coast, and wider littoral zone, has	a The littoral zone consists of backshore, nearshore and offshore zones, includes a wide variety of coastal types and is a			

distinctive features and landscapes.	dynamic zone of rapid change.			
	b. Coasts can be classified by using longer term criteria such as geology and changes of sea level or shorter term processes such as inputs from rivers, waves and tides.			
	c. Rocky coasts (high and low relief) result from resistant geology (withstands erosive forces of sea, rain and wind), often in a high-energy environment, whereas coastal plain landscapes (sandy and estuarine coasts) are found near areas of low relief and result from supply of sediment from different terrestrial and offshore sources, often in a low-energy environment.			
2B.2 Geological structure influences the development of coastal landscapes at a variety of scales.	a. Geological structure is responsible for the formation of concordant and discordant coasts.			
	b. Geological structure influences coastal morphology: Dalmatian and Haff type concordant coasts and headlands and bays on discordant coasts.			
	c. Geological structure (jointing, dip, faulting, folding) is an important influence on coastal morphology and erosion rates, and also on the formation of cliff profiles and the occurrence of micro-features, e.g. caves (e.g. Glamorgan Heritage Coast). (2)			

2B.3 Rates of coastal recession and stability depend on lithology and other factors.	a. Bedrock lithology (igneous, sedimentary, metamorphic) and unconsolidated material (boulder clay) geology are important in understanding rates of coastal recession.			
	b. Differential erosion of alternating strata in cliffs (permeable/impermeable, resistant/less resistant) produces complex cliff profiles and influences recession rates. (3)			
	c. Vegetation is important in stabilising sandy coastlines through dune successional development and salt marsh successional development in estuarine areas.			

Enquiry question 2: How do characteristic coastal landforms contribute to coastal landscapes?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
2B.4 Marine erosion creates distinctive coastal landforms and contributes to coastal landscapes.	a. Different wave types (constructive/destructive) influence beach morphology and beach sediment profiles, which vary at a variety of temporal scales from short term (daily) through to longer periods (4)			<ul style="list-style-type: none"> • Explain how different wave types influence beach morphology • Explain how different wave types influence beach sediment profiles • Explain short and long term changes to beach sediment profiles
	b. The importance of erosion processes (hydraulic action, corrosion, abrasion, attrition) and how they are influenced			

	<p>by wave type, size and lithology.</p>			<ul style="list-style-type: none"> ● Explain the importance of erosion processes ● Explain how erosion processes are influenced by wave type, size and lithology ● Explain how erosion creates distinctive coastal landforms ● Explain the cave arch stump stack sequence ● Explain the processes that create a wave cut notch ● Evaluate the extent to which marine erosion contributes to coastal landscapes ● Evaluate the view that wave type is the most significant factor in coastal erosion ● Evaluate the importance of coastal erosion in the creation of erosional landforms.
<p>2B. 5 Sediment transport and deposition create distinctive landforms and contribute to coastal landscapes.</p>	<p>a. Sediment transportation is influenced by the angle of wave attack, the process of longshore drift, tides and currents. (5)</p>			<ul style="list-style-type: none"> ● Explain how sediment transportation is influenced by physical processes ● Explain the process of long-shore drift ● Explain the processes leading to depositional landforms in an image ● Explain plant succession with examples
	<p>b. Transportation and deposition processes produce distinctive coastal landforms (beaches, recurved and double spits, offshore bars, barrier beaches and bars, tombolos and cusped forelands), which can be stabilised by plant succession.</p>			

	<p>c. The Sediment Cell concept (sources, transfers and sinks) is important in understanding the coast as a system of dynamic equilibrium, with both negative and positive feedback (☑ Portland Bill to Selsey Bill).</p>			<ul style="list-style-type: none"> ● Explain how plant succession produces distinctive depositional landforms ● Explain with examples the sediment cell concept ● Explain how dynamic equilibrium works ● Explain how coasts can experience a positive feedback loop of sediment movement ● Explain how coasts can experience a negative feedback loop of sediment movement ● Evaluate to what extent sediment transportation contributes to coastal landforms ● Evaluate the view that the Sediment Cell concept is valuable in coastal management ● Evaluate the importance of transportation and deposition processes.
<p>2B.6 Subaerial processes of mass movement and weathering influence coastal landforms and contribute to coastal landscapes.</p>	<p>a. Weathering (mechanical, chemical, biological) is important in sediment production and influences rates of recession.</p>			<ul style="list-style-type: none"> ● Explain how weathering influences rates of coastal recession ● Explain how mass movement is important on coastlines with complex geology ● Explain using pictures/diagrams the range of landforms created by mass movement
<p>b. Mass movement (blockfall, rotational slumping, landslides) is important on some coasts with weak and/or complex geology.</p>				
<p>c. Mass movement creates distinctive landforms (rotational scars, talus scree slopes, terraced cliff profiles).</p>				

				<ul style="list-style-type: none"> • Explain for an eroded/weathered/mass movement affected photo the processes that lead to these landforms (rotational scars, talus scree, terraced cliffs). • Evaluate the extent to which sub aerial processes of mass movement and weathering influence coastal landforms. • Evaluate the view that sub aerial processes are the main factors influencing coastal landforms • Evaluate the importance of mass movement and weathering on rates of recession
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Enquiry question 3: How do coastal erosion and sea level change alter the physical characteristics of coastlines and increase risks?			
Key idea	Detailed content	Is it in the advance information?	Potential exam questions.
2B.7 Sea level change influences coasts on different timescales.	a Longer-term sea level changes result from a complex interplay of factors both eustatic (ice formation/melting, thermal changes) and isostatic (post		<ul style="list-style-type: none"> • Explain how longer-term sea-level changes can result from isostatic adjustment

	glacial adjustment, subsidence, accretion and tectonics).				
	b. Sea level change has produced emergent coastlines (raised beaches with fossil cliffs) and submergent coastlines (rias, fjords and Dalmatian). (6)				
	c. Contemporary sea level change from global warming or tectonic activity is a risk to some coastlines.				
					<ul style="list-style-type: none"> • Explain how longer-term sea-level changes can result from eustatic sea level rise • Explain the landforms created in emergent coastlines • Explain the risk of climate change linked sea level rise to some coastlines • Explain the risk of tectonic related sea level rise to some coastlines • Evaluate the extent to which sea level change influences coasts over short and long timescales. • Evaluate the view that long term sea level rise will impact places equally • Evaluate the view that climate change is the most important factor in sea level change.
2B. 8 Rapid coastal retreat causes threats to people at the coast.	a. Rapid coastal recession is caused by physical factors (geological and marine) but can be influenced by human actions (dredging or coastal management) (e.g. the Nile Delta or Guinea coastline or Californian coastline). (A: actions of different players may alter natural systems)				
	b. Subaerial processes (weather and mass movement) work together to				

	influence rates of coastal recession.			
	c. Rates of recession are not constant and are influenced by different factors both short- and longer term (wind direction/fetch, tides, seasons, weather systems and occurrence of storms). (7)			
2B. Coastal flooding is a significant and increasing risk for some coastlines. 9	a. Local factors increase flood risk on some low-lying and estuarine coasts (height, degree of subsidence, vegetation removal); global sea level rise further increases risk (e.g. Bangladesh or the Maldives).			<ul style="list-style-type: none"> ● Explain how coastal flooding risk is increasing in some places. ● Explain the local factors that increase flood risk in low lying and estuarine coasts. ● Explain how removal of vegetation impacts coastal flooding in low lying areas. ● Explain how storm surge events can lead to dramatic short term impacts ● Explain How climate change may increase coastal flood risk. ● Explain why the extent and magnitude of coastal flood risk is uncertain. ● Evaluate the significance of increasing coastal flooding due to climate change ● Evaluate the importance of factors causing coastal flooding
	b. Storm surge events can lead to severe coastal flooding with dramatic short-term impacts (depressions, tropical cyclones).			
	c. Climate change may increase coastal flood risk (frequency and magnitude of storms, sea level rise) but the pace and magnitude of this threat is uncertain. (F: this risk is creating an uncertain future and needs mitigation and adaptation)			

Enquiry question 4: How can coastlines be managed to meet the needs of all players?			
Key idea	Detailed content	Is it in the advance information?	Potential exam questions.
2B. 10 Increasing risks of coastal recession and coastal flooding have serious consequences for affected communities.	a. Economic losses (housing, businesses, agricultural land, infrastructure) and social losses (relocation, loss of livelihood, amenity value) from coastal recession can be significant, especially in areas of dense coastal developments.		<ul style="list-style-type: none"> ● Explain the consequences of flood risk for local communities ● Explain the economic risks from coastal flood risk ● Explain how densely populated coastal communities are at risk from coastal flooding ● Explain how storm surges can have serious social and economic consequences ● Explain how level of development impacts the consequences of storm surges ● Explain how climate change could create environmental refugees in coastal areas. ● Evaluate to what extent coastal recession and coastal flooding impact communities ● Evaluate the view that developed countries have
	b. Coastal flooding and storm surge events can have serious economic and social consequences for coastal communities in both developing and developed countries.		
	c. Climate change may create environmental refugees in coastal areas.		

				<p>reduced economic impacts to coastal flooding.</p> <ul style="list-style-type: none"> • Evaluate the view that developing countries have greater social consequences from coastal flooding events. • Evaluate the importance of climate change in the displacement of people.
<p>2B. 11 There are different approaches to managing the risks associated with coastal recession and flooding.</p>	<p>a. Hard engineering approaches (groynes, sea walls, rip rap, revetments, offshore breakwaters) are economically costly and directly alter physical processes and systems. (8) (A: actions by different players may have unforeseen consequences)</p>			
	<p>b. Soft engineering approaches (beach nourishment, cliff re-grading and drainage, dune stabilisation) attempt to work with physical systems and processes to protect coasts and manage risks caused by changes in sea-level. (9)</p>			
	<p>c. Sustainable management is designed to cope with future threats (increased storm events, rising sea levels) but its implementation can lead to local conflicts in many countries. (F: mitigation and adaptation will both be needed for future stability)</p>			

2B. 12

Coastlines are now increasingly managed by holistic integrated coastal zone management (ICZM).

a. Coastal management increasingly uses the concept of littoral cells to manage extended areas of coastline. Throughout the world, countries are developing schemes that are sustainable and use holistic ICZM strategies.

b. Shoreline Management Policy decisions (No Active Intervention, Strategic Realignment, Hold The Line, Advance The Line) are based on complex judgements (engineering feasibility, environmental sensitivity, land value, political and social reasons); Cost Benefit Analysis (CBA) and Environmental Impact Assessment (EIA) are used as part of the decision-making process.

c. Policy decisions can lead to conflicts between different players (homeowners, local authorities, environmental pressure groups) with perceived winners and losers in countries at different levels of development (developed and developing or emerging countries) (Harrisburg and Chittagong).
(A: attitudes of differing players may vary)

Guidance for integrating geographical skills for Topic 2 Option 2B

Study must emphasise the use of quantitative geographical skills, including developing observation skills, measurement and geo-spatial mapping skills, together with data manipulation and statistical skills applied for field measurement. Qualitative approaches may be used if appropriate. The following guidance on integrating skills gives suggestions of opportunities to meet these requirements. These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study. The full range of skills is outlined in the geographical skills appendix (*Appendix 1*).

- (1) GIS mapping of the variety of coastal landscapes, both for and beyond the UK.
- (2) Satellite interpretation of a variety of coastlines to attempt to classify them.
- (3) Field sketches of contrasting coastal landscapes.
- (4) Using measures of central tendency to classify waves into destructive and constructive wave types.
- (5) Using student t-test to investigate changes in pebble size and shape along a drift aligned beach and also across the littoral zone to above the storm beach.
- (6) Map and aerial interpretation of distinctive landforms indicating past of sea level change.
- (7) Use of GIS, aerial photos and maps to calculate recession rates for a variety of temporal rates (annual changes and longer-term changes).
- (8) Interrogation of GIS of management cells to ascertain land use values and develop cost/benefit analysis to inform the choice of coastal management strategy.
- (9) Photo interpretation of a range of approaches to management to assess environmental impact.
- (10) Sand dune or salt marsh surveys to assess the impact of succession using an index of diversity, X^2 (Chi-square to compare features of the various zones).

Area of study 2: Dynamic Places

Topic 3: Globalisation

Globalisation & Superpowers are always together and worth 32 marks
Globalisation always has a 4 mark and a 12 mark question
Superpowers always has a 4 mark and a 12 mark question

Overview

Globalisation and global interdependence continue to accelerate, resulting in changing opportunities for businesses and people. Inequalities are caused within and between countries as shifts in patterns of wealth occur. Cultural impacts on the identity of communities increase as flows of ideas, people and goods take place. Recognising that both tensions in communities and pressures on environments are likely, will help players implement sustainable solutions.

Content

Enquiry question 1: What are the causes of globalisation and why has it accelerated in recent decades?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
3.1 Globalisation is a long-standing process which has accelerated because of rapid developments in transport, communications and businesses.	a. Globalisation involves widening and deepening global connections, interdependence and flows (commodities, capital, information, migrants and tourists). (1)			<ul style="list-style-type: none"> • Explain what factors have led to accelerated globalisation in recent years. • Explain connectivity in relation to globalisation • Explain interdependence in relation to globalisation • Explain how developments in technology have enabled globalisation • Explain 'shrinking world' • Explain how rapid development of ICT in the 20th century has to increased globalisation • Explain time space compression • Assess the extent to which transport and communications contribute to globalisation • Assess the importance of widening and deepening global connections in the increase in globalisation.
	b. Developments in transport and trade in the 19th century (railways, telegraph, steam-ships) accelerated in the 20th century (jet aircraft, containerisation), contributing to a 'shrinking world'.			
	c. The 21st century has been dominated by rapid development in ICT and global communication (mobile phones, internet, social networking, electronic banking, fibre optics), lowering communication costs and contributing to time-space compression.			
3.2 Political and economic decision making are important factors in the	a. International political and economic organisations (P: role of World Trade Organization (WTO), International Monetary Fund (IMF), World Bank) have			<ul style="list-style-type: none"> • Explain how political decision making is linked to globalisation • Explain how economic decision-making influences globalisation

<p>acceleration of globalisation.</p>	<p>contributed to globalisation through the promotion of free trade policies and foreign direct investment (FDI).</p>			<ul style="list-style-type: none"> ● Explain how IGOs promote globalisation ● Explain the role of trade blocs in globalisation ● Explain SEZs and their contribution to the spread of globalisation ● Assess the importance of political and economic decision making in the acceleration of globalisation ● Assess to what extent China's open door policy influenced globalisation ● Assess to what extent IGOs influence globalisation ● Assess to what extent trade blocs influence globalisation ● Assess the view that IGOs are more influential than trade blocs in globalisation ● Assess the role of national governments in accelerating globalisation
<p>3.3 Globalisation has affected some places and organisations more than others.</p>	<p>a. Degree of globalisation varies by country and can be measured using indicators and indices (AT Kearney index, KOF index). (2)</p>			
	<p>b. TNCs are important in globalisation (P: role of TNCs) both contributing to its spread (global production networks, globalisation and the</p>			

	development of new markets) and taking advantage of economic liberalisation (outsourcing and offshoring).			
	c. There are physical, political, economic and environmental reasons why some locations remain largely 'switched off' from globalisation (e.g. North Korea or Sahel countries). (3)			

Enquiry question 2: What are the impacts of globalisation for countries, different groups of people and cultures and the physical environment?			
Key idea	Detailed content	Is it in the advance information?	Potential exam questions.
3.4 The global shift has created winners and losers for people and the physical environment.	a. The movement of the global economic centre of gravity to Asia via the global shift of manufacturing (☑ China) and outsourcing of services (☑ India) can lead to changes in the built environment that can bring benefits (infrastructure investment, waged work, poverty reduction, education and training) but also costs (loss of productive land, unplanned settlements, environmental and resource pressure).		
	b. Some communities in developing countries have experienced major environmental problems (including air and water pollution, land degradation, over-exploitation of resources, and loss of biodiversity), which impact on people's health and wellbeing.		
	c. Some deindustrialised regions in developed countries face social and environmental problems as a result of economic restructuring (dereliction,		

	contamination, depopulation, crime and high unemployment). (4)			
<p>3.5 The scale and pace of economic migration has increased as the world has become more interconnected, creating consequences for people and the physical environment.</p>	<p>a. Rural-urban migration (push and pull factors), and/or natural increase, is responsible for the growth of megacities (e.g. Mumbai or Karachi); rapid urban growth creates social and environmental challenges. (5)</p>			
	<p>b. International migration has increased in global hub cities and regions, deepening interdependence between regions (elite migration (e.g. Russian oligarchs to London) and mass low-wage economic migration (e.g. India to UAE or the Philippines to Saudi Arabia)).</p>			
	<p>c. Migration has economic, social, political and environmental costs and benefits for both host and source locations.</p>			
<p>3.6 The emergence of a global culture, based on western ideas, consumption, and attitudes towards the physical environment, is one outcome of globalisation.</p>	<p>a. Cultural diffusion occurs as a result of globalisation; TNCs, global media corporations (P: role of TNCs), tourism and migration create and spread an increasingly 'westernised' global culture which impacts on both the environment and people (e.g. Changing diets in Asia). The spread of a global culture has also led to new awareness of opportunities for disadvantaged groups (e.g. Athletes at the Rio 2016 Summer Paralympics)</p>			

	particularly in emerging and developing countries. (P: opportunities for these groups) (6)			
	b. In some locations, cultural erosion (loss of language, traditional food, music, clothes, social relations (→ loss of tribal lifestyles in Papua New Guinea) has resulted in changes to the built and natural environment (devaluing local and larger-scale ecosystems).			
	c. Concern about cultural impacts, economic and environmental exploitation has led to opposition to globalisation from some groups. (A: attitudes of pro- and anti-globalisation groups, environmental movement)			

Enquiry question 3: What are the consequences of globalisation for global development and the physical environment and how should different players respond to its challenges?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.

<p>3.7 Globalisation has led to dramatic increases in development for some countries, but also widening development gap extremities and disparities in environmental quality.</p>	<p>a. Economic measures (both single and composite indices) of development (income per capita, economic sector balance) contrast with those focused on social development (Human Development Index (HDI), Gender Inequality Index (GII)) and environmental quality (air pollution indices). (7)</p>			
	<p>b. Trends in widening income inequality, globally and nationally (measured using the Gini Coefficient), suggest globalisation has created winners and losers for people and physical environments between and within developed, emerging and developing economies. (8)</p>			
	<p>c. Contrasting trends in economic development and environmental management between global regions since 1970 indicate differential progress that can be related to the outcomes from globalisation.</p>			
<p>3.8 Social, political and environmental tensions have resulted from the rapidity of global change caused by globalisation.</p>	<p>a. Open borders, deregulation and encouragement of foreign direct investment has created culturally mixed societies and thriving migrant diasporas in some locations, but tensions have resulted elsewhere (☒ Rise of extremism in Europe and trans-boundary water conflicts in south-east Asia).</p>			

	b	Attempts have been made in some locations to control the spread of globalisation by censorship (e.g. China or North Korea), limiting immigration (e.g. UK or Japan) and trade protectionism. (P: role of government) (A: attitudes of pro- and anti-immigration groups)			
	c.	Some groups seek to retain their cultural identity within countries and seek to retain control of culture and physical resources (e.g. First Nations in Canada), whereas others embrace its economic advantages.			
3.9 Ethical and environmental concerns about unsustainability have led to increased localism and awareness of the impacts of a consumer society.	a	Local groups and NGOs promote local sourcing (e.g. Transition towns) as one response to globalisation by increasing sustainability (A: actions of local pressure groups) ; this has economic, social and environmental costs and benefits.			
	b.	Fair trade and ethical consumption schemes may reduce the environmental degradation, the inequalities of global trade and improve working conditions for some people. (A: actions of NGOs and pressure groups)			
	c.	Recycling has a role in managing resource consumption and ecological footprints, but its use varies by			

	product and place (e.g. local authorities in the UK or local NGOs such as Keep Britain Tidy). (F: environmental consequences of different patterns of resource consumption)			
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Guidance for integrating geographical skills for Topic 3

The following skills provide suggested opportunities for integrating the full range of skills outlined in the geographical skills appendix (*Appendix 1*). These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study.

- (1) Use of proportional flow lines showing networks of flows.
- (2) Ranking and scaling data to create indices.
- (3) Analysis of human and physical features on maps to understand lack of connectedness.
- (4) Use of population, deprivation and land-use datasets to quantify the impacts of deindustrialisation.
- (5) Use of proportional flow arrows to show global movement of migrants from source to host areas.
- (6) Analysis of global TNC and brand value datasets to quantify the influence of western brands.
- (7) Critical use of World Bank and United Nations (UN) data sets to analyse trends in human and economic development, including the use of line graphs, bar charts and trend lines.
- (8) Plotting Lorenz curves and calculating the Gini Coefficient

Topic 4: Shaping Places

Option 4A: Regenerating Places

Overview

Local places vary economically and socially with change driven by local, national and global processes. These processes include movements of people, capital, information and resources, making some places economically dynamic while other places appear to be marginalised. This creates and exacerbates considerable economic and social inequalities both between and within local areas. Urban and rural regeneration programmes involving a range of players involve both place making (regeneration) and place marketing (rebranding).

Regeneration programmes impact variably on people both in terms of their lived experience of change and their perception and attachment to places. The relative success of regeneration and rebranding for individuals and groups depends on the extent to which lived experience, perceptions, and attachments to places are changed.

Students should begin by studying the place in which they live or study in order to look at economic change and social inequalities. They will then put this local place in context in order to understand how regional, national, international and global influences have led to changes there. They should then study one further contrasting place through which they will develop their wider knowledge and understanding about how places change and are shaped. A local place may be a locality, a neighbourhood or a small community, either urban or rural.

Regenerating Places section is always worth 35 marks
It always includes 2 x 6 mark questions (with and without resources)
It always includes a 20 mark evaluate question.

Content

Enquiry question 1: How and why do places vary?				
An in-depth study of the local place in which you live or study and one contrasting place				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
4A.1 Economies can be classified in different ways and vary from place to place	^a Economic activity can be classified by sector (primary, secondary, tertiary and quaternary) and also by type of employment (part-time/full-time, temporary/permanent,			

	employed/self-employed.			
	b. There are differences in economic activity (employment data and output data) and this is reflected through variation in social factors (health, life expectancy and levels of education). (1)			
	c. The inequalities in pay levels across economic sectors and in different types of employment are reflected in quality of life indices.			
4A.2 Places have changed their function and characteristics over time..	a. Over time, places have changed their functions (administrative, commercial, retail and industrial) and demographic characteristics (gentrification, age structure and ethnic composition).			
	b. Reason for changes in a place might be explained by physical factors, accessibility and connectedness, historical development and the role of local and national planning. (2)			
	c. Change can be measured using employment trends, demographic changes, land use changes and levels of deprivation (income deprivation, employment deprivation, health deprivation, crime, quality of the living environment, abandoned and derelict land). (3)			

<p>4A.3 Past and present connections have shaped the economic and social characteristics of your chosen places.</p>	<p>a. Regional and national influences have shaped the characteristics of your chosen places. These places can be represented in a variety of different forms, giving contrasting images to that presented more formally and statistically. How the lives of students and those of others are affected by this continuity and change, both real and imagined.</p>			
	<p>b. International and global influences that have shaped your chosen places. These places can be represented in a variety of different forms, giving contrasting images to that presented more formally and statistically. How the lives of students and those of others are affected by this continuity and change, both real and imagined. (P: increasing roles of TNCs and IGOs)</p>			
	<p>c. Consideration of the way in which economic and social changes in your chosen places have influenced people's identity. (4) (A: Attitudes on changes range from cultural erosion to enrichment)</p>			

Enquiry question 2: Why might regeneration be needed?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
4A.4 Economic and social inequalities changes people's perceptions of an area.	a. Successful regions (e.g. San Francisco Bay area) have high rates of employment, inward migration (internal and international) and low levels of multiple deprivation but also high property prices and skill shortages in both urban and rural areas.			
	b. In some regions (e.g. The Rust Belt, USA) economic restructuring has triggered a spiral of decline, which includes increasing levels of social deprivation (education, health, crime, access to services and living environment) in both deindustrialised urban areas and rural settlements once dominated by primary economic activities.			
	c. There are priorities for regeneration due to significant variations in both economic and social inequalities (gated communities, 'sink estates', commuter villages, declining rural settlements).			

<p>4A.5 There are significant variations in the lived experience of place and engagement with them.</p>	a.	There are wide variations in levels of engagement in local communities (local and national election turnout, development and support for local community groups). (A: local communities vary in attitudes)			
	b.	Lived experience of, and attachment to, places varies according to age, ethnicity, gender, length of residence (new migrants, students) and levels of deprivation; these in turn impact on levels of engagement. (A: Attachment to places influence attitudes)			
	c.	Conflicts can occur among contrasting groups in communities that have different views about the priorities and strategies for regeneration, these have complex causes (lack of political engagement and representation, ethnic tensions, inequality and lack of economic opportunity). (P: Players vary attitudes(A) and may have contrasting approaches (F))			
<p>4A.6 There is a range of ways to evaluate the need for regeneration.</p>	a.	The use of statistical evidence to determine the need for regeneration in your chosen local place. (P) (5)			
	b.	Different media can provide contrasting evidence, questioning the need for regeneration in your chosen local place. (P) (6)			

	c. How different representations of your chosen local place could influence the perceived need for regeneration. (P) (7)			
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Enquiry question 3: How is regeneration managed?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
4A.7 UK government policy decisions play a key role in regeneration.	a. Infrastructure investment (high speed rail, airport development) in order to maintain growth and improve accessibility to regenerate regions. (P: national government facilitate regeneration often in partnerships with charities and developers)			
	b. Rate and type of development (planning laws, house building targets, housing affordability, permission for 'fracking') affecting economic regeneration of both rural and urban regions. (A: Government actions may prioritise national over local needs and opinions.)			
	c. UK government decisions about international migration and the			

	<p>deregulation of capital markets (☒ enabling foreign investment in prime London real estate) have significant impacts on the potential for growth and both direct and indirect investment. (P: Government may create open or closed doors policies)</p>			
<p>4A.8 Local government policies aim to represent areas as being attractive for inward investment.</p>	<p>a. Local governments compete to create sympathetic business environments with local plans designating areas for development for a range of domestic and foreign investors (☒ Science and technology parks). (A: the actions of local authorities will affect their success)</p>			
	<p>b. Local interest groups (Chambers of Commerce, local preservation societies, trade unions) play a key role in decision-making about regeneration; there are often tensions between groups that wish to preserve environments and those that seek change. (☒ London Olympics 2012) (A: differing attitudes may cause conflicts)</p>			
	<p>c. Urban and rural regeneration strategies include retail-led plans, tourism, leisure and sport (☒ London Olympics 2012), public/private rural diversification (☒ Powys Regeneration Partnership).</p>			

<p>4A.9 Rebranding attempts to represent areas as being more attractive by changing public perception of them.</p>	a	Rebranding involves re-imagining places using a variety of media to improve the image of both urban and rural locations and make them more attractive for potential investors.			
	b.	For UK deindustrialised cities, rebranding can stress the attraction of places, creating specific place identity building on their industrial heritage; this can attract national and international tourists and visitors (e.g. Glasgow 'Scotland with Style'). (8)			
	c.	There are a range of rural rebranding strategies in the post- production countryside based on heritage and literary associations, farm diversification and specialised products, outdoor pursuits and adventure in both accessible and remote areas; these strategies are intended to make these places more attractive to national and international tourists and visitors (e.g. 'Brontë country, Kielder Forest).			

Enquiry question 4: How successful is regeneration?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.

<p>4A.10 Assessing the success of regeneration uses a range of measures: economic, demographic, social and environmental.</p>	<p>a. The success of economic regeneration can be assessed using measures of income, poverty and employment (both relative and absolute changes) both within areas and by comparison to other more successful areas.</p>			
	<p>b. Social progress can be measured by reductions in inequalities both between areas and within them; social progress can also be measured by improvements in social measures of deprivation and in demographic changes (improvements in life expectancy and reductions in health deprivation).</p>			
	<p>c. Regeneration is successful if it leads to an improvement in the living environment (levels of pollution reduced, reduction in abandoned and derelict land). (9)</p>			
<p>4A.11 Different urban stakeholders have different criteria for judging the success of urban regeneration.</p>	<p>a. A study of the strategies used in the regeneration of an urban place (Salford Quays) and the contested nature of these decisions within local communities. (10) (A: Attitudes will include NIMBYism)</p>			
	<p>b. The changes that have taken place as a consequence of national and local strategies can be judged using a range of economic, social, demographic and environmental variables in an urban area. (F: future success depends on past decisions)</p>			

	<p>c. Different stakeholders (local and national governments, local businesses and residents) will assess success using contrasting criteria; their views will depend on the meaning and lived experiences of an urban place and the impact of change on both the reality and the image of that place.</p>			
<p>4A.12 Different rural stakeholders have different criteria for judging the success of rural regeneration.</p>	<p>a. A study of the strategies used in the restructuring of a rural place (North Antrim coast) and the contested nature of these decisions within local communities.</p>			
	<p>b. The changes that have taken place as a consequence of national and local strategies can be judged using a range of economic, social, demographic and environmental variables in a rural area. (F: future success depends on past decisions)</p>			
	<p>c. Different stakeholders (local and national governments, local businesses and residents) will assess success using contrasting criteria; their views will depend on the meaning and lived experiences of a rural place and the impact of change on both the reality and the image of that place.</p>			

Guidance for integrating geographical skills for Topic 4 Option 4A

Quantitative and qualitative geographical skills must be developed in this topic. Particular weight must be given to qualitative approaches involved in representing place, and to analysing critically the impacts of different media on place meanings and perceptions. The use of geospatial data must also be used to present place characteristics. The following guidance on integrating geographical skills gives suggestions for opportunities to meet these requirements.

These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study. *Appendix 1* outlines the full range of geographical skills.

- (1) Use of GIS to represent data about place characteristics.
- (2) Interpretation of oral accounts of the values and lived experiences of places from different interest groups and ethnic communities.
- (3) Use of Index of Multiple Deprivation (IMD) database to understand variations in levels and types of deprivation.
- (4) Investigation of social media to understand how people relate to the places where they live.
- (5) Testing of the strength of relationships through the use of scatter graphs and Spearman's rank correlation.
- (6) Use of different newspaper sources to understand conflicting views about plans for regeneration.
- (7) Evaluation of different sources (music, photography, film, art, literature) and appreciation of why they create different representations and image of a local place.
- (8) Exploration of discursive/creative media sources to find out how place identity has been used as part of rebranding.
- (9) The interpretation of photographic and map evidence showing 'before and after' cross-sections of regenerated urban and rural places.
- (10) Interrogation of blog entries and other social media to understand different views of the success of regeneration projects.

Topic 6: The Carbon Cycle and Energy Security

Overview

A balanced carbon cycle is important in maintaining planetary health. The carbon cycle operates at a range of spatial scales and timescales, from seconds to millions of years. Physical processes control the movement of carbon between stores on land, the oceans and the atmosphere. Changes to the most important stores of carbon and carbon fluxes are a result of physical and human processes. Reliance on fossil fuels has caused significant changes to carbon stores and contributed to climate change resulting from anthropogenic carbon emissions.

The water and carbon cycles and the role of feedbacks in and between the two cycles, provide a context for developing an understanding of climate change.

Anthropogenic climate change poses a serious threat to the health of the planet. There is a range of adaptation and mitigation strategies that could be used, but for them to be successful they require global agreements as well as national actions.

Water/Carbon section is always worth 49 marks

It always includes one 6 mark question, one 8 mark question, one 12 mark question and a 20 mark evaluate question.

Content

Enquiry question 1: How does the carbon cycle operate to maintain planetary health?			
Key idea	Detailed content	Is it in the advance information?	Potential exam questions.
		What other spec points does this link to? What would be helpful to revise in addition?	

<p>6.1 Most global carbon is locked in terrestrial stores as part of the long-term geological cycle.</p>	<p>a. The biogeochemical carbon cycle consists of carbon stores of different sizes (terrestrial, oceans and atmosphere), with annual fluxes between stores of varying size (measured in Pg/Gt), rates and on different timescales. (1)</p>			
	<p>b. Most of the earth's carbon is geological, resulting from the formation of sedimentary carbonate rocks (limestone) in the oceans and biologically derived carbon in shale, coal and other rocks.</p>			
	<p>c. Chemical weathering removes carbon from silicate rocks. The carbon ends up in the ocean as carbonate rock. Carbon is released via outgassing at ocean ridges, hotspot volcanoes and subduction zones.</p>			
<p>6.2 Biological processes sequester carbon on land and in the oceans on shorter timescales.</p>	<p>a. Phytoplankton sequester atmospheric carbon during photosynthesis in surface ocean waters; carbonate shells/tests move into the deep ocean water through the carbonate pump and action of the thermohaline circulation.</p>			<ul style="list-style-type: none"> ● Explain sequestration of carbon on land ● Explain sequestration of carbon in the oceans ● Explain the oceanic carbon pump ● Explain thermohaline circulation. ● Assess the importance of oceanic carbon sequestration

				<ul style="list-style-type: none"> Evaluate the importance of biological processes to sequester carbon
	<p>b. Terrestrial primary producers sequester carbon during photosynthesis; some of this carbon is returned to the atmosphere during respiration by consumer organisms.</p>			
	<p>c. Biological carbon can be stored as dead organic matter in soils, or returned to the atmosphere via biological decomposition over several years.</p>			
<p>6.3 A balanced carbon cycle is important in sustaining other earth systems but is increasingly altered by human activities.</p>	<p>a. The concentration of atmospheric carbon (carbon dioxide and methane) strongly influences the natural greenhouse effect, which in turn determines the distribution of temperature and precipitation. (2)</p>			
	<p>b. Ocean and terrestrial photosynthesis play an important role in regulating the composition of the atmosphere. Soil health is influenced by stored carbon, which is important for ecosystem productivity.</p>			<ul style="list-style-type: none"> Explain how oceanic and terrestrial photosynthesis play a part in regulating the composition of the atmosphere. Explain how soil health is influenced by stored carbon. Explain how ecosystem productivity is linked to photosynthesis and soil health.

				<ul style="list-style-type: none"> • Assess the importance of a balanced carbon cycle for sustaining Earth's systems. • Assess the extent to which human activities are causing an imbalance in the carbon cycle • Evaluate the factors linked to human activities and carbon cycle imbalance. • Evaluate the importance of the carbon cycle to planetary health. • Evaluate the importance of the water and carbon cycles to planetary health.
	<p>c. The process of fossil fuel combustion has altered the balance of carbon pathways and stores with implications for climate, ecosystems and the hydrological cycle.</p>			

Enquiry question 2: What are the consequences for people and the environment of our increasing demand for energy?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.

<p>6.4 Energy security is a key goal for countries, with most relying on fossil fuels.</p>	<p>a Consumption (per capita and in terms of units of GDP) and energy mix (domestic and foreign, primary and secondary energy, renewable versus non-renewable). (3)</p>			<ul style="list-style-type: none"> ● Explain energy security. ● Explain how consumption per capita of energy varies between places ● Explain energy mix ● Explain how an energy mix can be made up from domestic, foreign, primary secondary renewable and non-renewable energy sources. ● Explain the difference between renewable and non-renewable ● Explain the factors that limit access to energy resources. ● Explain two places with contrasting energy consumptions and attitudes. ● Explain the role of TNCs in securing energy pathways ● Explain the role of OPEC in securing energy supply. ● Assess the extent to which countries are energy secure ● Assess the importance of TNCs and OPEC in securing energy supplies ● Evaluate the view that the consequences of increasing energy demand are mainly environmental.
	<p>b. Access to and consumption of energy resources depends on physical availability, cost, technology, public perception, level of economic development and environmental priorities (☒ national comparisons: USA versus France).</p>			
	<p>c. Energy players (P: role of TNCs, The Organisation of the Petroleum Exporting Countries (OPEC), consumers, governments) have different roles in securing pathways and energy supplies.</p>			

				<ul style="list-style-type: none"> Evaluate the extent to which energy security is a priority for varying places.
<p>6.5 Reliance on fossil fuels to drive economic development is still the global norm.</p>	<p>a. There is a mismatch between locations of conventional fossil fuel supply (oil, gas, coal) and regions where demand is highest, resulting from physical geography.</p>			
	<p>b. Energy pathways (pipelines, transmission lines, shipping routes, road and rail) are a key aspect of security but can be prone to disruption especially as conventional fossil fuel sources deplete (e.g. Russian gas to Europe). (4)</p>			
	<p>c. The development of unconventional fossil fuel energy resources (tar sands, oil shale, shale gas, deep water oil) has social costs and benefits, implications for the carbon cycle, and consequences for the resilience of fragile environments. (e.g. Canadian tar sands, USA fracking, Brazilian deep water oil) (P: role of business in developing reserves, versus environmental groups and affected communities)</p>			

6.6 There are alternatives to fossil fuels but each has costs and benefits.

a. Renewable and recyclable energy (nuclear power, wind power and solar power) could help decouple fossil fuel from economic growth; these energy sources have costs and benefits economically, socially, and environmentally and in terms of their contribution they can make to energy security.
(2 changing UK energy mix)

- Explain the alternatives to fossil fuels as an energy source
- Explain the difference between renewable and recyclable energy
- Explain how fossil fuels have until recently been closely linked to economic growth in places.
- Explain the social costs and benefits of a range of renewable and recyclable energy sources
- Assess the relative importance of renewable and recyclable energy for your named place.
- Assess the socio-economic benefits of alternative fuel sources (recyclable/renewable) for energy security.
- Evaluate the view that fossil fuel alternative benefits outweigh the costs.

b. Biofuels are an alternative energy source that are increasing globally; growth in biofuels however has implications for food supply as well as uncertainty over how 'carbon neutral' they are. (2 Biofuels in Brazil) (5)

	<p>c. Radical technologies, including carbon capture and storage and alternative energy sources (hydrogen fuel cells, electric vehicles) could reduce carbon emissions but uncertainty exists as to how far this is possible.</p>			
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Enquiry question 3: How are the carbon and water cycles linked to the global climate system?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
<p>6.7 Biological carbon cycles and the water cycle are threatened by human activity.</p>	<p>a. Growing demand for food, fuel and other resources globally has led to contrasting regional trends in land-use cover (deforestation, afforestation, conversion of grasslands to farming) affecting terrestrial carbon stores with wider implications for the water cycle and soil health. (6)</p>			
	<p>b. Ocean acidification, as a result of its role as a carbon sink, is increasing due to fossil fuel combustion and risks crossing the critical threshold for the health of coral reefs and other</p>			

	<p>marine ecosystems that provide vital ecosystem services.</p>			
<p>6.8 There are implications for human wellbeing from the degradation of the water and carbon cycles.</p>	<p>c. Climate change, resulting from the enhanced greenhouse effect, may increase the frequency of drought due to shifting climate belts, which may impact on the health of forests as carbon stores. (7 Amazonian drought events)</p>			
	<p>a. Forest loss has implications for human wellbeing but there is evidence that forest stores are being protected and even expanded, especially in countries at higher levels of development (environmental Kuznets' curve model). (A: attitudes of global consumers to environmental issues)</p>			
	<p>b. Increased temperatures affect evaporation rates and the quantity of water vapour in the atmosphere with implications for precipitation patterns, river regimes and water stores (cryosphere and drainage basin stores) (7 Arctic) (F: uncertainty of global projections). (7)</p>			

	<p>c. Threats to ocean health pose threats to human wellbeing, especially in developing regions that depend on marine resources as a food source and for tourism and coastal protection.</p>			
<p>6.9 Further planetary warming risks large-scale release of stored carbon, requiring responses from different players at different scales.</p>	<p>a. Future emissions, atmospheric concentration levels and climate warming are uncertain owing to natural factors (the role of carbon sinks), human factors (economic growth, population, energy sources) and feedback mechanisms (carbon release from peatlands and permafrost, and tipping points, including forest die back and alterations to the thermohaline circulation). (8) (F: uncertainty of global projections)</p>			
	<p>b. Adaptation strategies for a changed climate (water conservation and management, resilient agricultural systems, land-use planning, flood-risk management, solar radiation management) have different costs and risks.</p>			
	<p>c. Re-balancing the carbon cycle could be achieved through mitigation (carbon taxation, renewable switching, energy efficiency,</p>			

	afforestation, carbon capture and storage) but this requires global scale agreement and national actions both of which have proved to be problematic. (A: attitudes of different countries, TNCs and people)			
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Guidance for integrating geographical skills for Topic 6

Quantitative geographical skills must be developed in this topic, including understanding of simple mass balance, unit conversions and the analysis and presentation of data. Qualitative approaches may be used if appropriate. The following guidance on integrating geographical skills gives suggestions for opportunities to meet these requirements.

These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study. *Appendix 1* outlines the full range of geographical skills.

- (1) Use of proportional flow diagrams showing carbon fluxes.
- (2) Use of maps showing global temperature and precipitation distribution.
- (3) Graphical analysis of the energy mix of different countries, including change over time.
- (4) Analysis of maps showing global energy trade and flows.
- (5) Comparisons of emissions from different energy source.
- (6) Using GIS to map land-use changes such as deforestation over time.
- (7) Analysis of climate model maps to identify areas at most risk from water shortages, floods in the future.
- (8) Plotting graphs of carbon dioxide levels, calculating means and rates of change.

Topic 7: Superpowers

Overview

Superpowers can be developed by a number of characteristics. The pattern of dominance has changed over time. Superpowers and emerging superpowers have a very significant impact on the global economy, global politics and the environment. The spheres of influence between these powers are frequently contested, resulting in geopolitical implications.

Globalisation & Superpowers are always together and worth 32 marks
Globalisation always has a 4 mark and a 12 mark question
Superpowers always has a 4 mark and a 12 mark question

Content

Enquiry question 1: What are superpowers and how have they changed over time?			
Key idea	Detailed content	Is it in the advance information?	Potential exam questions.
		What other spec points does this link to? What would be helpful to revise in addition?	

<p>7.1 Geopolitical power stems from a range of human and physical characteristics of superpowers.</p>	a	Superpowers, emerging and regional powers can be defined using contrasting characteristics (economic, political, military, cultural, demographic and access to natural resources). (1)			
	b.	Mechanisms for maintaining power sit on a spectrum from 'hard' to 'soft' power, which vary in their effectiveness.			
	c.	The relative importance of these characteristics and mechanisms for maintaining power has changed over time (Mackinder's geo-strategic location theory).			
<p>7.2 Patterns of power change over time and can be uni-, bi- or multi-polar.</p>	a.	The maintenance of power during the imperial era by direct colonial control (British Empire, multipolar world 1919–1939).			
	b.	Multi-faceted, indirect control (political, economic, military, cultural) including neo-colonial mechanisms has become more important (Cold War era; emergence of China as a potential rival to the USA's hegemony). (2)			
	c.	Different patterns of power bring varying degrees of geopolitical stability and risk.			
<p>7.3 Emerging powers vary in their influence on people and the</p>	a.	A number of emerging countries, including Brazil, Russia, India and China (BRIC) and other G20			

physical environment, which can change rapidly over time.	members, are considered increasingly important to global economic and political systems, as well as global environment governance (UN Climate Change Conference).			
	b. Each has evolving strengths and weaknesses (economic, political, military, cultural, demographic and environmental) that might inhibit or advance their economic and geopolitical role in the future.			
	c. Development Theory (World Systems Theory, Dependency Theory, Modernisation Theory) can be used to help explain changing patterns of power.			

Enquiry question 2: What are the impacts of superpowers on the global economy, political systems and the physical environment?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
7.4 Superpowers have a significant influence over the global economic system.	a Superpowers influence the global economy (promoting free trade and capitalism) through a			

	<p>variety of IGOs (World Bank, IMF, WTO, World Economic Forum (WEF)). (3)</p>			
	<p>b. TNCs are dominant economic forces in the global economy and economic and cultural globalisation in terms of technology (patents) and trade patterns. (P: role of TNCs in maintaining power and wealth)</p>			
	<p>c. Global cultural influence (the arts, food the media) and 'westernisation' is an important aspect of power, linked to economic influence and technology.</p>			
<p>7.5 Superpowers and emerging nations play a key role in international decision making concerning people and the physical environment.</p>	<p>a. Superpowers and emerging nations play a key role in global action (crisis response, conflict, climate change). (P: role of powerful countries as 'global police')</p>			
	<p>b. Alliances, both military (North Atlantic Treaty Organisation (NATO), The Australia, New Zealand and United States Security Treaty (ANZUS) and economic (EU, North American Free Trade Agreement (NAFTA), ASEAN) and environmental (IPCC) increase interdependence and are important in geostrategy and global influence.</p>			

	<p>c. The UN (Security Council, International Court of Justice, and peacekeeping missions and climate change conferences) are important to global geopolitical stability. (A: actions and attitudes of global IGOs)</p>			
<p>7.6 Global concerns about the physical environment are disproportionately influenced by superpower actions.</p>	<p>a. Superpower resource demands (food, fossil fuels, and minerals) can cause environmental degradation and their carbon emissions contribute disproportionately to global warming. (4)</p>			<ul style="list-style-type: none"> ● Explain how superpower resource demands cause environmental degradation ● Explain how superpower resource demands are disproportionately contributing to climate change ● Explain what superpower resource demands are ● Explain how the growth in middle class consumption in emerging superpowers presents challenges for resources globally ● Explain how rare earth resources are impacted by middle class consumption ● Explain how the physical environment is affected by middle class consumption globally. ● Assess the importance of superpower actions in protecting the physical environment from degradation
<p>b. There are differences in the willingness to act (USA, EU, China, and Russia) to reduce carbon emissions and reach global agreements on environmental issues. (A: attitudes and actions of different countries)</p>				
<p>c. Future growth in middle-class consumption in emerging superpowers has implications for the availability and cost of key resources (rare earths, oil, staple grains and water), as well as for the physical environment.</p>				

				<ul style="list-style-type: none"> Assess the view that superpower actions are disproportionately influencing the physical environment. Assess the impact middle class growth in emerging superpowers has on the availability and cost of key resources.
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Enquiry question 3: What spheres of influence are contested by superpowers and what are the implications of this?				
Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
7.7 Global influence is contested in a number of different economic, environmental and political spheres.	a Tensions can arise over the acquisition of physical resources (Arctic oil and gas) where ownership is disputed and disagreement exists over exploitation. (A: attitudes and actions in relation to resources)			
	b. The global system of intellectual property rights can be undermined by counterfeiting, which strains trade relations and TNC investment.			

	<p>c. Political spheres of influence can be contested leading to tensions over territory and physical resources (e.g. South and East China Seas) and in some cases resulting in open conflict (e.g. Western Russia/Eastern Europe) with implications for people and physical environments.</p>			
<p>7.8 Developing nations have changing relationships with superpowers with consequences for people and the physical environment.</p>	<p>a. Developing economic ties between emerging powers and the developing world (China and African nations) increase interdependence, generate environmental impacts and bring opportunities and challenges. (P: role of emerging powers)</p>			
	<p>b. The rising economic importance of certain Asian countries (e.g. China or India) on the global stage increases the geopolitical influence of the region but also creates economic and political tensions within the region. (5)</p>			
	<p>c. Cultural, political, economic and environmental tensions in the Middle East represent an ongoing challenge to superpowers and emerging powers due to complex geopolitical relations combined with the supply of vital energy resources. (A: contrasting cultural</p>			<ul style="list-style-type: none"> ● Explain how middle east tensions present ongoing challenges for superpowers ● Explain how cultural tensions cause complex geopolitical tensions in the middle East ● Explain how the supply of vital energy resources could be

	ideologies)			<p>impacted by geo political tensions in the middle east.</p> <ul style="list-style-type: none"> ● Assess the importance of relationships between superpowers and the consequences for people and the physical environment. ● Assess to what extent people and the physical environment are impacted by developing nations relationships with developed nations. ● Assess the view that developed nations have created environmental tensions with developing nations over time.
<p>7.9 Existing superpowers face ongoing economic restructuring, which challenges their power.</p>	<p>a. Economic problems (debt, unemployment, economic restructuring, social costs) represent an ongoing challenge to the USA and EU.</p>			
	<p>b. The economic costs of maintaining global military power (naval, nuclear, air power, intelligence services) and space exploration are questioned in some existing superpowers.</p>			
	<p>c. The future balance of global power in 2030 and 2050 is uncertain and there are a</p>			

	<p>range of possible outcomes (continued USA dominance, bi-polar and multi-polar structures). (F: uncertainty over future power structures) (6)</p>			
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Guidance for integrating geographical skills for Topic 7

The following skills provide suggested opportunities for integrating the full range of skills outlined in the geographical skills appendix (*Appendix 1*). These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study.

- (1) Constructing power indexes using complex data sets, including ranking and scaling.
- (2) Mapping past, present and future sphere of influence and alliances using world maps.
- (3) Using graphs of world trade growth using linear and logarithmic scales.
- (4) Mapping emissions and resource consumption using proportional symbols.
- (5) Plotting the changing location of the world's economic centre of gravity on world maps.
- (6) Analysing future Gross Domestic Product (GDP) using data from different sources.

Topic 8: Global Development and Connections Option 8B: Migration, Identity and Sovereignty

Overview

Globalisation involves movements of capital, goods and people. Tensions can result between the logic of globalisation, with its growing levels of environmental, social and economic interdependence among people, economies and nation states and the traditional definitions of national sovereignty and territorial integrity. International migration not only changes the ethnic composition of populations but also changes attitudes to national identity. At the same time, nationalist movements have grown in some places challenging dominant models of economic change and redefining ideas of national identity.

Global governance has developed to manage a number of common global issues (environmental, social, political and economic) and has a mixed record in its success in dealing with them. It has promoted growth and political stability for some people in some places whilst not benefiting others. Unequal power relations have tended to lead to unequal environmental, social and economic outcomes.

Content

Enquiry question 1: are the impacts of globalisation on international migration?

Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
8B.1 Globalisation has led to an increase in migration both	a a. Globalisation has caused extremely significant changes in the global economic system, changing the pattern of demand for	NO		

<p>within countries and among them.</p>	<p>labour; this has encouraged both rural-urban migration within countries (🌐 China) and international migration between countries (🌐 EU-Schengen).</p>			
	<p>b. Between 3–4% of the global population live outside their country of birth but this proportion varies greatly between countries because of different policies relating to international migration and levels of engagement with the global economy (🌐 Singapore or Japan or Australia).</p>	<p>YES</p>		
	<p>c. The pattern of international migration is changing and will continue to change because environmental, economic and political events affect both the source areas of many migrants and their destinations; this results in flows of both voluntary economic migrants, refugees and asylum seekers. (1)</p>	<p>YES</p>		
<p>8B.2 The causes of migration are varied, complex and subject to change.</p>	<p>a. Most migrants move for work or to re-join family members; there are other significant causes, including displacement of refugees due to conflict and poverty in their regions of origin (🌐 migrants crossing the Mediterranean). (2)</p>	<p>NO</p>		
	<p>b. Economic theory suggests that economic efficiency is maximised when goods (free trade), capital (deregulated financial markets) and labour (open-borders) can move freely</p>	<p>NO</p>		

	across international borders but this poses serious challenges for national identity and sovereignty.			
	c. The movement of labour is unrestricted within many nation states to ensure efficient allocation of resources (🌐 regional movements in the UK) and the same logic applies for some global regions (EU) but does not yet apply at a global level.	NO		
8B.3 The consequences of international migration are varied and disputed.	a. Migration changes the cultural and ethnic composition of nation states but the rate of assimilation of migrants varies from nation to nation especially when there are distinctive ethnic differences.	YES		
	b. Migration causes political tensions because of differences in perceptions of the social, economic, cultural and demographic impacts (🌐 Labour flows across the Mexico-US border and between EU states). (3)			
	c. There are variations in the ability of people to migrate across national borders according to levels of skill and income; and opportunities, including the presence or absence of controls and international borders.			

Enquiry question 2: How are nation states defined and how have they evolved in a globalising world?

Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
8B.4 Nation states are highly varied and have very different histories.	a. National sovereign states vary greatly in their ethnic, cultural and linguistic unity (🌐 Iceland compared to Singapore); this results from their history of population growth, their degree of isolation and the role of migration. (4)	YES		
	b. Many national borders are a consequence of physical geography and historical development; other borders are a result of colonial history and might not take account of different ethnic or religious groups (🌐 Iraq or Rwanda), which can lead to problems of sovereignty and legitimacy.	YES		
	c. There are many contested borders (🌐 Ukraine/Russia) and not all nation states are universally recognised as such (🌐 Taiwan) which can lead to both potential conflict and population movements.	YES		
8B.5 Nationalism has played a role in the development of the modern world.	a. 19th-century nationalism was important in the development of empires and a source of conflict in Europe and beyond as other nations became part of larger empires (🌐 British Raj in India).	NO		
	b. Since 1945, many new nation states have emerged as	NO		

	empires disintegrated (🌐 1960s 'wind of change' in Africa); this has caused conflicts that were costly both environmentally, economically and in human terms (🌐 Vietnam or Sudan).			
	c. Patterns of migration between former colonies and the imperial core country are still evident and important in changing the ethnic composition and cultural heterogeneity of those countries. (5)	NO		
8B.6 Globalisation has led to the deregulation of capital markets and the emergence of new state forms.	a. Globalisation has encouraged the growth of states that have low-tax regimes which provide havens for the profits for TNCs and homes for wealthy expatriates.	NO		
	b. Most governments and IGOs have accepted the emergence of tax-havens although many NGOs have raised objections.	NO		
	c. Growing global inequalities have been recognised as a major threat to the sustainability of the global economic system and some governments have promoted alternative models (🌐 Bolivia or Ecuador). (6)	NO		

Enquiry question 3: What are the impacts of global organisations on managing global issues and conflicts?

Key idea	Detailed content	Is it in the advance information?	What other spec points does this link to? What would be helpful to revise in addition?	Potential exam questions.
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8B.7 Global organisations are not new but have been important in the post-1945 world.	a. The United Nations was the first post-war IGO to be established and has grown in importance; its role in global governance is affected by the different geopolitical visions of members of the Security Council and its multiple functions in managing global environmental, socio-economic and political problems.	YES		
	b. Interventions by the UN through the use of economic sanctions and direct military intervention have been made in defence of human rights but have a mixed record of success. (🌐 Trade Embargo Iran or UN forces in Congo).	NO		
	c. Some member states (US, UK, Russia) have operated independently of the UN in intervening in 'failed states' or to conduct a 'war on terror' with profound impacts on geopolitical relations and global stability.	NO		
8B.8 IGOs established after the Second World War have controlled the rules of world trade and financial flows.	a. The IMF, WB and WTO were established by the WWII allied nations and have been important in maintaining the dominance of 'western' capitalism, global economic management and trade policy (free trade).	YES		
	b. Global borrowing rules and trade policies have been especially effective in delivering growth to the developed world, but the impact of Structural Adjustment and HIPC policies on the	YES		

	developing world's economies and economic sovereignty is disputed (🌐 Jamaica's structural adjustment programme).			
	c. Membership of global trade and financial IGOs is almost universal, as a result of the dominance of these organisations, but regional groupings have emerged in the form of trading blocs (🌐 NAFTA/SEATO) and in some cases (EU) there has been a movement to closer political unity.	YES		
8B.9 IGOs have been formed to manage the environmental problems facing the world, with varying success.	a. Global environmental issues including issues concerning the quality of the atmosphere and biosphere (🌐 Montreal Protocol on Substances that Deplete the Ozone Layer) and biosphere (🌐 Convention on International Trade in Endangered Species of Wild Fauna and Flora CITES). (7)	YES		
	b. IGOs have been involved in developing laws for managing oceans (🌐 UN Convention on the Law of the Sea) and international rivers (🌐 Helsinki Water Convention rules) as well as monitoring the state of the environment (🌐 Millennium Ecosystem Assessment).	YES		
	c. IGO management also includes responsibility for Antarctica as a continent of peace and science (🌐 Antarctic Treaty System).	YES		

Guidance for integrating geographical skills for Topic 8 Option 8B

Students must use both quantitative and qualitative skills in this topic. The following guidance on integrating geographical skills gives suggestions for opportunities to meet these requirements.

These skills are **not** exclusive to the topic areas under which they appear; students will need to be able to apply these skills across any suitable topic area throughout their course of study. *Appendix 1* outlines the full range of geographical skills.

- (1) Use of flow-lines on global maps showing flows, both the direction and number of migrants among global regions.
- (2) Interpreting oral accounts from migrants to investigate the cause of migration.
- (3) Interpreting a range of opinions on the contribution of migrants to the culture and social life of two contrasting nations.
- (4) Use of divided bar graphs to compare the ethnic diversity of countries.
- (5) Comparison of global maps of languages and colonial histories to analyse relationship between them (Anglophone, Francophone and Lusophone).
- (6) Using the Gini coefficient and income/wealth proportions for deciles of the population to describe inequalities within and between nation states.
- (7) Evaluating source material, including newspaper articles, to determine the impact of IGOs managing global environmental issues.
- (8) Use of proportional circles to show size of output and level of foreign ownership of different economic sectors.
- (9) Critical analysis of a variety of source material to identify possible reasons for errors in the assessment of the costs and benefits of foreign ownership (property land and businesses).
- (10) Critical analysis of source material to identify possible misuse of data in the assessment of role of the state and the success in promoting national identity.

Geographical skills

The geography specification requires students to use their prior knowledge and understanding of the geographical, mathematical and statistical skills required at GCSE.

1. Qualitative data

- (b) interpret and evaluate a range of source material including textual and visual sources, such as oral accounts, newspapers, creative media, social media, aerial, oblique, ground photographs, sketches and drawings
- (c) understand the opportunities and limitations of qualitative techniques such as coding and sampling and appreciate how they actively create particular geographical
- (d) understand the ethical and socio-political implications of collecting, studying and representing geographical data about human communities.

2. Quantitative data

- (a) use, interpret and analyse geographical information including dot maps, kite diagrams, linear and logarithmic scales, dispersion diagrams, satellite images, GIS
- (b) demonstrate an ability to collect and to use digital, geo-located data, and to understand a range of approaches to the use and analysis of such data
- (d) understand the purposes and difference between the following and be able to use them in appropriate contexts:
 - (i) descriptive statistics of central tendency and dispersion, including Gini Co-efficient and Lorenz curve
 - (ii) descriptive measures of difference and association from the following statistical tests: t-tests, Spearman's rank, chi-squared; inferential statistics and the foundations of relational statistics, including measures of correlation and lines of best fit on a scatter plot
 - (iii) measurement, measurement errors, and sampling

END OF ADVANCE INFORMATION