Exam practice answers

Chapter 1

1 a) Exam tip
Part a) is targeting A03. It is important to include evidence from Figure 1 in your answer.

Sea defences have only been built in areas of higher-value land use — where residential areas are found at the coastline or less than 100 m from the coast at Highcliffe and Barton Court.

No active intervention has been adopted for 1 km at Naish Holiday Village because the map shows there are no permanent buildings located there.

There are no sea defences at the golf course at East Barton or Hordle Cliff because there is no land use of high enough value shown — and the road is 0.3 km inland — to justify the cost of protection.

The retreat of the coastline in the unprotected areas at Naish and Hordle Cliff may suggest that defences were needed at Highcliffe and Barton to prevent damage to buildings.

The impact sea defences will have on the eastward movement of longshore drift may influence the decision to build defences.

b) Exam tip
Part b) is targeting A02. You need to apply your knowledge of coastal processes to put forward plausible ideas about why the defences may have an impact further along the coast.

The defences may reduce the input of sediment into the system by reducing the rate of erosion and mass movement.

The groynes may trap the movement of longshore drift.

Less sediment will travel eastwards, resulting in a decrease in deposition along the coast.

Hurst Spit may decrease in size as erosion continues, removing sediment from the feature.

The lack of sediment moving eastwards may result in increased erosion between Barton and the spit, which may result in there being little impact on the spit itself.

c) Exam tip
Part c) is targeting A01 with the use of the command word outline. You need to demonstrate your knowledge of the term by giving a brief summary of the characteristics.

Existing coastal defences are abandoned and not maintained.

The sea is allowed to flood the formerly protected land until it reaches a new line of defence or higher land.

A saltmarsh can be created, acting as defence against erosion.

2 a) Exam tip
Part a) is targeting A03 because the command word compare is asking you to interpret the data in the table. You must give a point-by-point account of similarities and differences. Use the data in the table to support your answer.

Rates of erosion at B have always been greater than those at A at both the cliff top and foot.

Between 1975 and 1980 the cliff top retreated 2 m further at B compared with A. However, the retreat of the cliff foot was greater — 5.7 metres further at B compared with A.

Between 1975 and 1980 the cliff top at A eroded faster (by just over half a metre) than the cliff foot, whereas at B the cliff foot eroded slightly faster than the top (by almost 0.2 m).

By 2010–2015 the rate of erosion at B had increased at both the cliff top and foot by almost 0.8 m per year, whereas at A the rates of erosion had significantly decreased to zero at the cliff foot and to only 0.2 m per year at the top.

Between 2010 and 2015 the rates of erosion were significantly slower at A than at B, with the cliff top at B retreating 15 m more than at A and the cliff foot 17.3 m more.

b) Exam tip
Part b) is targeting A01 — you need to demonstrate your knowledge of sub-aerial processes by giving a summary of how they may influence the shape of a cliff.
Physical weathering processes, such as freeze–thaw, and mass movement may result in fragments of cliff breaking off, which may reduce the angle of slope by causing the upper parts of the cliff face to retreat. If the cliffs are made of softer rocks, rotational slip may produce a concave profile. Slips, slumps and mudslides may produce a ‘tongue’ of material, extending the cliff foot towards the sea.

### Exam tip

**Part c)** is targeting A02 through the use of the command words *suggest how.* You must apply your knowledge and understanding of sea-level changes to the area in Table 1, giving plausible ideas about how the changes may have an influence. Remember to use the latest figures given in the table — sea level can both rise and fall.

Eustatic change causing a rise in sea level may allow waves to reach higher up the cliff face, which may increase the rate of erosion at the cliff foot at B. This may encourage mass movement, increasing the rate of cliff top retreat. The zero rate of erosion at A may be due to sea defences. A rise in sea level may cover the sea defences, rapidly increasing erosion at A.

Isostatic change creating a relative fall in sea level will prevent waves reaching the cliffs as often, producing a relict coastline. Cliff foot erosion rates at B would decrease greatly. The rate of erosion at A may not change.

Sub-aerial processes will still result in cliff top retreat but at a slower rate because mass movement, as a result of cliff foot erosion, has been reduced.

### Exam tip

**Part a)** is targeting A03 because the command word *compare* is asking you to give a point-by-point account of the differences and similarities shown by Table 1. Use the data in the table to support your answer.

Rates of erosion at B have always been greater than those at A at both the cliff top and foot. Between 1975 and 1980 the cliff top retreated 2 m further at B compared with A. However, the retreat of the cliff foot was greater — 5.7 metres further at B compared with A. Between 1975 and 1980 the cliff top at A eroded faster [by just over half a metre] than the cliff foot, whereas at B the cliff foot eroded slightly faster than the top (by almost 0.2 m).

By 2010–2015 the rate of erosion at B had increased at both the cliff top and foot by almost 0.8 m per year, whereas at A the rates of erosion had significantly decreased to zero at the cliff foot and to only 0.2 m per year at the top. Between 2010 and 2015 the rates of erosion were significantly slower at A than at B, with the cliff top at B retreating 15 m more than at A and the cliff foot 17.3 m more.

### Exam tip

**Part b)** is targeting A01 with the command word *outline.* You need to give a brief summary to demonstrate your knowledge of how sub-aerial processes may influence a cliff.

Physical weathering processes, such as freeze–thaw, and mass movement may result in fragments of cliff breaking off, which may reduce the angle of slope by causing the upper parts of the cliff face to retreat. If the cliffs are made of softer rocks, rotational slip may produce a concave profile. Slips, slumps and mudslides may produce a ‘tongue’ of material, extending the cliff foot towards the sea.

### Exam tip

**Examine** is a command word used with A02. Answers must demonstrate thorough knowledge of a management strategy. However, answers must not be purely descriptive. You might reach a conclusion about the success of the strategy.

In order to briefly examine the level of success, it is necessary to outline the aims of the strategy. This may include:

- What did the management plan to achieve?
- How did the strategy plan to meet its aims?

The outcome of the management strategy could be compared with the original success criteria. Possible themes to focus on as part of the assessment include:

- changes to human activities [e.g. controls on visitor numbers] that were impacting upon the coastline
- changes to processes that were having a negative impact as a result of human activity
- overall cost–benefit analysis of the strategy
- unintentional impacts the strategy may have for other coastal areas [e.g. changing processes increasing erosion or increased visitor pressure]
Consideration of how well the strategy met the success criteria could be used to clearly assess the overall level of success or failure of the management.

Exam tip
Assess is a command word used with AO2 and AO3. Answers must demonstrate the application of thorough knowledge of a management strategy. However, answers must not be purely descriptive. You should weigh up the importance of your chosen strategy and might provide a clear conclusion, justifying your decision about the level of success.

In order to briefly examine the level of success, it is necessary to outline the aims of the strategy. This may include:

- What did the management plan to achieve?
- How did the strategy plan to meet its aims?

The outcome of the management strategy could be compared with the original success criteria. Possible themes to focus on as part of the assessment include:

- changes to human activities (e.g. controls on visitor numbers) that were impacting upon the coastline
- changes to processes that were having a negative impact as a result of human activity
- overall cost–benefit analysis of the strategy
- unintentional impacts the strategy may have for other coastal areas (e.g. changing processes increasing erosion or increased visitor pressure)

Consideration of how well the strategy met the success criteria could be used to clearly assess the overall level of success or failure of the management.

5 a) Exam tip
Part a) is targeting AO3 by using the command word analyse. You need to make clear the essential differences in the data. You must refer to the data in the table as part of your answer.

Supraglacial debris, which will have fallen on to the glacier from the valley sides as a result of weathering and mass movement, contains the most angular sediment and nothing more rounded than angular.

Subglacial debris found at the base of the glacier, and smoothed by abrasion and attrition, is more rounded than the supraglacial debris. A quarter of the subglacial debris is angular, which is 44% less than that found on the glacier. However, it is considerably more than the 2% found in fluvioglacial debris. Most subglacial debris is sub-angular or sub-rounded, which did not appear in the supraglacial debris.

The fluvioglacial debris contains the biggest range of shapes. However, there is no very angular debris, unlike in the supraglacial debris, and at 2% it has the smallest amount of angular debris. More of the debris is sub-rounded (68%) than at the other locations. It is the only location to have rounded debris (24%).

b) Exam tip
Part b) is targeting AO1 with use of the command word outline, so you need to demonstrate your knowledge of the physical processes involved by providing a brief summary of the main characteristics.

Plucking (quarrying) — ice freezes to the bedrock and pulls away rock and fragments as it moves.

Some fine material will be added by abrasion of the bedrock.

Entrainment — some supraglacial debris is moved to the base by falling into crevasses during extensional flow.

c) Exam tip
The command word explain is being used in part c) for AO2. You must give a factual account, applying your knowledge of fluvioglacial deposition to the context of glacial landscapes. Do not just describe the landscapes.

The type of landscape depends on where the fluvioglacial deposition occurs — either subglacial or proglacial.

Subglacial deposition produces a landscape containing ice-contact features, such as:

- eskers — long ridges of sorted material deposited when the flow of subglacial meltwater decreases
- kames — conical hills created by meltwater washing material into crevasses or depressions in the glacier surface
- kame terraces — ridges along valley sides deposited by meltwater streams along the glacier sides

Proglacial deposition produces a landscape containing features such as:

- sandurs (outwash plains) — gently sloping, sorted layers of materials deposited when meltwater streams lose energy as they enter lowland
Exam practice answers

6 a) Exam tip
Part a) targets AO3. Refer to places shown in Figure 2 to give an account of the similarities and differences, rather than a generalised comparison of the locations.

Continuous permafrost is found furthest north, in northern and eastern Russian Federation, the northern edge of North America (including the islands off Canada) and the coast of Greenland, apart from in the south. Small areas are found in parts of Scandinavia. It is north of the discontinuous permafrost, forming a wider band than the discontinuous permafrost.

Discontinuous permafrost is found in a thinner band bordering the continuous permafrost. It is found further inland to the south of the continuous permafrost in Russia, North America and Scandinavia.

Both continuous and discontinuous reach their most southerly extent in the eastern parts of the Russian Federation.

b) Exam tip
In part b) the command word explain requires you to demonstrate your knowledge and understanding of processes creating features, by giving a factual account, thus targeting AO1.

Features may be a result of ground ice formation (permafrost) creating features such as ice lenses (causing frost heaving), polygons, patterned ground and pingos.

Features created by frost weathering and mass movement in the periglacial environment could also be considered.

The two chosen features should differ in terms of character and formation. Answers should show a clear understanding of the processes.

c) Exam tip
The command word outline is asking you to give a brief summary of one way to demonstrate your knowledge and understanding of the impact human activity can have, so is targeting AO1. You should support your answer with an example where possible.

Building in permafrost zones (especially poorly insulated buildings) can raise the temperature of the ground, causing the permafrost to melt.

Deforestation can remove insulation, resulting in increased heating.

Increased greenhouse gas emissions, resulting in global warming, lead to melting.

Economic activities, such as tourism, can increase development in permafrost areas, resulting in more building and heating of the ground.

7 Exam tip
Assess is a command word used for AO2 and AO3. Answers must demonstrate the application of thorough knowledge of a management strategy. However, answers must not be purely descriptive. You should weigh up the importance of your chosen strategy and reach a clear conclusion, justifying your decision about the level of success.

In order to briefly assess the level of success, it is necessary to outline the aims of the strategy. This may include:

- What did the management plan to achieve?
- How did the strategy plan to meet its aims?

The outcome of the management strategy could be compared with the original success criteria. Possible themes to focus on as part of the assessment include:

- changes to human activities (e.g. controls on visitor numbers) that were impacting upon the processes or landscape
- changes to processes that were having a negative impact as a result of human activity
- overall cost–benefit analysis of the strategy
- unintentional impacts the strategy may have for other glacial areas (e.g. increased visitor pressure or development in permafrost areas)

Consideration of how well the strategy met the success criteria could be used to clearly assess the overall level of success or failure of the management.

Chapter 2

1 a) Exam tip
The command word describe in part a) is targeting AO3 because you have to interpret Figure 1. Refer to places named on the map.

Areas of deprivation are found in each neighbourhood.
There is a clustering of areas around Manchester. Oldham has the highest levels of deprivation. Where most employment is found the levels of deprivation are lower. Peripheral areas on the map have lower levels of deprivation.

b) **Exam tip**
Part b) is targeting AO1 because you have to give a factual account to demonstrate your knowledge of the policies. You should support your answer with named examples where relevant.

Establishment of Enterprise Zones (EZs) to encourage growth with financial benefits, simplified planning and established infrastructure.
Local Enterprise Partnerships (LEPs) between local authorities and businesses help encourage growth.
National and/or local government may support research and development, which encourages clustering in the knowledge economy sector, creating job opportunities.
Support for retraining schemes to help reduce unemployment.
Encouragement of FDI from MNCs to help develop new industries.

2 a) **Exam tip**
The command word describe in part a) is targeting AO3 because you have to interpret Figure 1. Refer to places named on the map.

Areas of deprivation are found in each neighbourhood. There is a clustering of areas around Manchester. Oldham has the highest levels of deprivation. Where most employment is found the levels of deprivation are lower. Peripheral areas on the map have lower levels of deprivation.

b) **Exam tip**
Part b) is targeting AO2 because you have to apply your knowledge to this location. It only requires one reason, but this needs to be elaborated as you are asked to explain it.

Deprivation is lower in areas of higher employment because more of the population will be earning and so able to afford everyday needs and better-quality housing that has all the basic amenities. Peripheral areas, where deprivation is lower, are likely to be more expensive areas to live. Houses will be better quality and people can afford everyday needs.
The clusters around the key urban areas may be in deindustrialised areas, which are rundown and possibly have a lack of employment opportunities. Often these areas are where low-income families live. Deprivation may be higher because housing is old and in poor condition, lacking some basic amenities. People are less likely to be able to afford everyday needs.

c) **Exam tip**
Assess is a command word for AO2 and AO3. In this case you have to apply your knowledge of policies. You should weigh up the results of the policies and reach a clear conclusion, justifying your decision about the level of success. You should use examples that you have studied to assess the level of success of the policies. You might provide a clear conclusion. It is important that your arguments are supported by evidence, such as figures of jobs created.

The policies could include:
- Establishment of Enterprise Zones (EZs) to encourage growth with financial benefits, simplified planning and established infrastructure.
- Local Enterprise Partnerships (LEPs) between local authorities and businesses help encourage growth.
- National and/or local government may support research and development, which encourages clustering in the knowledge economy sector, creating job opportunities.
- Support for retraining schemes to help reduce unemployment.
- Encouragement of FDI from MNCs to help develop new industries.

3 a) **Exam tip**
The command word suggest is targeting AO3 because you have to interpret the evidence provided in Figure 2. It is important that you refer to data in Figure 2 to support your suggestions.
Counterurbanisation is the movement of large numbers of people from urban to rural areas. There is a large proportion of professional occupations, managers, directors and senior officials, which are not typically traditional jobs associated with rural areas. Many of the occupations would be high-salaried jobs, which is not typical of traditional rural areas. The types of occupation suggest that people have moved to the rural areas and commute, because many of the occupations would only be found in urban areas. There is little evidence of traditional rural occupations, such as agriculture.

b) Exam tip
The command word outline shows that part b) is targeting AO1. You need to demonstrate your knowledge and understanding of social challenges. A good answer would include a named example, although there is no requirement for a detailed description.

Demand for homes increases house prices out of reach of local people, especially young and first-time buyers, resulting in them moving to other areas. This can change the social character of the area. Villages may become commuter settlements with newcomers using the services in nearby larger settlements, which may cause rural services to decline, making life harder for people who cannot get to the larger settlements. Rural areas and villages may be unoccupied during the day, resulting in some people being socially isolated and local services being unused and declining, increasing isolation.

The socio-economic character of a rural area changes and services may change to cater for the new population, which locals may resent. Increased pressure on local services and infrastructure, which may not be able to cope with increased numbers.

c) Exam tip
The command word explain is used in part c) to target AO1, because you have to demonstrate your knowledge and understanding by giving a factual account of the consequences of rebranding. You need to write in depth about each consequence. You should use named examples to support your answer.

Positive:
- Increased visitor numbers to the area allow businesses catering for visitors to benefit from increased trade and income. This in turn may create employment opportunities for local people. It may also encourage people to move to the area, which helps maintain local services.
- New businesses and employment opportunities moving to the area may diversify the economy, and investment may occur to improve the quality of the environment. People may be encouraged to move into the area. The development and growth may create employment for local people, such as for builders to renovate properties.

Negative:
- The environmental impact of increased visitor numbers. This may result in traffic congestion and parking issues, which upset the local population who may resent the influx of visitors.
- Increased demand to move to the area can inflate house prices out of reach of locals, especially young, first-time buyers, who may have to move away. Some people may want to buy second homes and holiday homes, which can change the character of villages as well as inflating house prices. The increased demand to move to the area may increase pressure to build in the rural area, which can also affect its character.
- Under rebranding, the traditional economic activities of the area may receive little investment and go into further decline. If the rebranding is not successful in attracting new businesses, the area may be in a worse situation than before the rebranding took place, and consequently be a waste of resources.

Question 4 uses the AO2 command word examine (and not merely explain). Your answer might also make use of geographical concepts, especially the idea of varying scales. A good answer may therefore examine whether the places that benefit most are entire settlements (e.g. Cambridge) or local places within larger cities (e.g. particular parts of London and Bristol). Another approach might be to look at what the causes of growth have been in different places (e.g. whether growth is focused on biotechnology, software design, new media — and why).

Twenty-first-century knowledge economy businesses frequently cluster together, for
example close to universities, research establishments and in areas of good digital connectivity. These areas will gain the benefits of job opportunities and investment. Areas where the industry develops attract a higher-educated workforce. Workers in the industry may result in run-down areas of a city being improved — gentrification. Investment may be attracted to areas where the businesses are found, encouraging more businesses and creating further job opportunities. Demand for housing inflates house prices, which may benefit people who already own a home. Lower-skilled workers may have fewer job opportunities and be unable to afford homes in the area. They may be forced to live in poorer neighbourhoods and suffer social exclusion. Areas away from universities or good digital connectivity will not benefit from economic growth. Clusters may move investment and businesses away from other areas, which go into decline.

Chapter 3

1 a) 

Analyse is a command word for A03, so you need to interpret the data and use your findings to conclude how they result in seasonal changes. You must support your findings with information from Figure 1. Take care reading the graph. Note the order of the months and the fact that average monthly temperatures are also included.

In winter, inputs are greater than outputs. Nearly all the input is in the form of snowfall. The location in northern Canada means that little of the snow melts during winter, when average temperatures can reach −25°C, so runoff is less than the inputs. Cold temperatures mean there is little loss due to evapotranspiration.

In late spring/early summer (May, June, July), when average temperatures rise above freezing, output is greater than input. Input is in the form of rainfall. However, melting of the previous winter’s snowfall adds to runoff, increasing the output. Warmer temperatures allow plant growth, increasing output via evapotranspiration.

By August there is no more snow melt, so output decreases.

b) 

Exam tip

Part b) is targeting A01 by use of the command word explain. Give a factual account to show your understanding of the role human factors can have in influencing runoff. Where possible, use examples to support your explanation.

Urbanisation:

- Surfaces become impermeable, which reduces infiltration and the soil moisture store, creating more runoff and reducing lag time.
- Drainage means that water is transported quickly to rivers, reducing the lag time.
- Less vegetation means that less water is lost by evapotranspiration, increasing potential runoff.

Deforestation:

- Decreases evapotranspiration, creating more potential runoff.
- Less interception, so water quickly reaches the surface, which may reduce the lag time.
- Reduction in the size of the floodplain and flood control measures — results in more runoff moving downstream, creating excess runoff and the potential for bigger floods.
- Straightening rivers — increases the velocity of the water, which moves the water quickly downstream, increasing the flood risk.
- Agricultural practices — leaving soil bare reduces interception and can result in rapid runoff. Soil erosion can reduce a river’s capacity, so less water can be carried before a flood occurs.

2 a) 

The command word analyse is being used to target A03. You need to highlight the important differences in the pattern of storage.

Despite tropical forest having a larger biomass and more complex structure, both tropical forest and temperate grassland store almost the same amount of carbon per hectare (just 2 tonnes difference).

Differences in nutrient cycling mean that storage in tropical forest is divided almost equally between plant and soil, whereas in the temperate grassland most is stored in the soil, with only a small amount stored in plants. Both tropical forest and temperate grassland store almost three times the amount of carbon as that stored in cropland because carbon stored in crops is removed by harvesting.
Cropland stores the majority of its carbon in the soil, similarly to temperate grassland. The soil store in temperate grassland is almost double that of temperate forest and almost three times that of cropland.

**Exam tip**

In part b) you are required to give a factual account to demonstrate your knowledge of the influence of human activity. The command word explain is therefore targeting A01.

Use of peat as a fuel reduces the store because CO₂ is released into the atmosphere. Drainage of peatlands increases the rate of decomposition, releasing CO₂ and reducing the store. Drainage also moves carbon to rivers, reducing the store.

Drained areas may be used for agriculture or afforestation, transferring some of the carbon stored in the peat to the biomass store. Removal of crops or trees removes the stored carbon. Restoration of peatlands by blocking drainage channels and the reestablishment of wetland plants increases carbon storage. Peatland can become a carbon sink, absorbing carbon.

Climate change resulting from human activity may impact on the amount of peatland in the world and consequently the amount of carbon storage.

**Exam tip**

The command word evaluate shows that this question is targeting A02 because you have to apply your knowledge of feedback loops. It also targets A03 because you must reach a conclusion about the level of importance. A good answer must demonstrate detailed and accurate knowledge and understanding, with the use of appropriate, accurate and well-developed examples. You must make judgements about the importance of the feedback loops based on supporting evidence. This includes a clear conclusion after considering the evidence you have presented.

A number of different types of feedback operate within and between the water and carbon cycles. Feedback can be both positive and negative.

Increased CO₂ in the atmosphere:
- Positive feedback — increased evaporation and water vapour absorbing more solar energy and raising global temperature.
- Negative feedback — increased primary productivity reducing the atmosphere store due to increased sequestration, absorbing less radiation and lowering temperatures.

Cryosphere feedback:
- Positive feedback — land and sea have lower albedo and absorb more heat, increasing melting.
- Negative feedback — land absorbs more heat, increasing evaporation and cloud cover, reducing temperatures and decreasing melting.

Terrestrial carbon feedback:
- Positive feedback — increased decomposition as tundra areas warm increases CO₂ in the atmosphere, raising temperature.
- Negative feedback — coniferous forests migrate northwards, expanding the biomass store so there is less CO₂ in the atmosphere.

Marine carbon feedback:
- Positive feedback — warmer oceans release more CO₂, so more heat is absorbed.

The evaluation should reflect critically on the importance of each type of feedback in contributing to global warming. Feedback resulting from increased CO₂ in the atmosphere due to human activity could be seen as the most important because it possibly has the greatest impact on global climate. The other feedback occurs as a result of the initial change in climate. It is difficult to evaluate the role of each feedback system because interactions between the water and carbon cycles are complex and the implications difficult to predict.

**Exam tip**

Not all deficits increase due to human activities. They can be the result of natural causes, such as meteorological events (e.g. El Niño).

Humans can create and increase deficits by the over-extraction of water. This can be from groundwater stores in aquifers or from rivers or surface stores such as lakes.

These deficits tend to be localised or regional and have little impact outside the area.

Deficits can be caused by changing patterns of precipitation in some areas due to climate change. This change in climate is being...
influenced/cause by human activity, such as increasing greenhouse gas emissions. The evaluation should reflect critically on the importance of the role human activity has played. At the local/regional scale there are examples such as water extraction, where the role is clear. Globally, the change in climate and consequent changes in the water cycle have been affected by human activity, but the complexity of the interactions between the two makes it difficult to assess the importance of the role. There will be places where climate change has exacerbated deficits created by activities such as over-extraction.

At a local scale, humans may be able to reverse deficits, for example by ending extraction or recharging aquifers.

Chapter 4

1 a) Exam tip

Part a) is targeting AO3 because you are having to interpret the data shown in Figure 1 and highlight the main features. As it is AO3, you must use evidence, such as value of flows, from the diagram and not just write facts you know about flows of remittances. It is important to realise that Figure 1 shows not only the main flows, but also the percentage of GDP made up of remittances. An answer should deal with both aspects.

Most of the main flows are from the USA. Main flows are from high-income countries to emerging economies or low-income countries. Most of the main flows travel from west to east.

India receives the most from main flows with almost $30 billion, closely followed by China with around $25 billion.

Remittances contribute to the GDPs of countries in all continents shown, regardless of the nation’s wealth or level of development. In countries receiving the main flows, remittances contribute up to 5% of GDP, apart from the Philippines, where it is higher.

In the countries where the main flows originate, remittances contribute no more than 0.5% of GDP.

Northern Africa, northwestern South America, Eastern Europe and Southeast Asia are areas where remittances contribute up to 5% of GDP.

There are few countries where remittances contribute over 10%.

b) Exam tip

Part b) is targeting AO1 by use of the command word explain, so is testing your knowledge and understanding of interdependence. You need to write a factual account in some depth about one benefit and one risk. Where possible, support your answer with examples.

Benefits:
- Labour shortages and skill shortages may be filled by migrant labour, benefiting the host nation as well as the source nation, where remittances may make an important contribution to GDP.
- Production and services can be outsourced or offshored. The country where the product originates can benefit from reduced costs of production, maximising profit and/or giving customers lower prices. The country undertaking production gains from employment and economic growth, and both countries may be able to avoid trading blocs.
- Countries working together may be able to resolve issues such as conflict, reducing the risk of war, financial issues and governance of oceans.

Risks:
- A sudden change in policy, such as an end to outsourcing or cancellation of production due to recession, can have an impact in all the interdependent countries involved. Migrant workers may return to the source nation, leaving labour shortages. The reduction in remittances may create economic problems for people remaining in the source nation. The host nation may have to pay to support unemployed migrant workers.
- An area may become too reliant on another country. If there is a change in demand as a result of changes in tastes or political decisions to end interdependency, it may result in the places that supply raw materials or components being at risk of economic decline.
- Backwash may result in a movement from periphery regions to hubs, which can leave labour shortages in some areas.

2 a) Exam tip

Part a) targets AO3. You need to identify the distinctive features of the spread of the cables.

Cables are distributed to link all the continents shown.
Areas of greatest capacity link the USA to Europe and Eastern Asia, which are areas with higher broadband usage. There is lower capacity around South America and Africa, where there is less demand. Lower capacity around Australia is due to the lower population size creating less demand. There is more capacity in areas of higher population densities. No cables are in the far north in areas of low population densities and in areas where sea ice forms.

There is greater capacity linking countries with developed high-tech industries. Fewer cables are in the southern hemisphere, where there is less land, resulting in lower population levels and less demand.

b) **Exam tip**

The use of the command word explain is targeting AO1. You must demonstrate your knowledge by giving factual detail. Part b) requires just two ways, so you need to write about each one in depth to explain its role. Support your answer with examples where possible.

In their role as members of international organisations, superpower nations have helped develop rules governing oceans, such as the limits of EEZs and regulations regarding the construction of tankers. The superpowers can afford to, and have the ability to, uphold international marine law. If they wish, they can take an active role in preventing conflict, such as conflicting claims on EEZs and island territories. They can use their power to protect lines of communication and trade, and to ensure maritime security from activities such as piracy. They can help prevent blockages of oil chokepoints. They can play an important role in controlling activities such as human trafficking and provide humanitarian aid, such as helping deal with the movement of migrants when found at sea.

Globalisation has led to a decrease in the importance of borders, for example there has been a dramatic increase in trade and movement of goods between countries, often using containers which move freely between places without being opened at borders. Outsourcing, offshoring and the growth of MNCs have resulted in many products and services being ‘international’ in nature, sometimes with components made in many places and then assembled in another country. MNCs sell similar products in many countries, and the presence of MNCs can make the character of places similar (e.g. fast-food MNCs), which reduces the impact of being in a foreign country.

Services such as IT services and call centres are frequently located in a different country from the one they are serving. Users may be unaware of where the service provider is located. Money earned in one country may be freely sent to another in the form of remittances. Movement of people between places has increased, and there has been an increase in areas allowing free movement of people (e.g. the EU). Some countries rely on migrant labour to fill labour shortages.

Changes in technology allow ideas and data to spread rapidly around the world with no controls when moved internationally. Cultural ideas may spread to other parts of the globe. A result of globalisation has been the demand in some places to increase the importance of borders.

A number of countries have tried to control the number of migrants trying to enter the country, creating stricter border controls and immigration policies. Trade blocs and trade sanctions, such as tariffs, have developed to influence and control trade between countries. This can have an impact on the movement of physical products between countries. Countries protect and, in some cases, want to extend their EEZs, which can be seen as a type of border by limiting access to resources for others.

3 **Exam tip**

Discuss is the command word used for AO2 and AO3. A good answer must apply detailed and accurate knowledge and understanding to construct an argument that gives differing viewpoints about the statement. These should be backed up with evidence by the use of appropriate and well-developed examples. It is necessary to reach a conclusion based on the debate about the role of globalisation and supported by the evidence.

4 **Exam tip**

The term evaluate is used for AO2 and AO3. You must use your knowledge and understanding to weigh up the effectiveness by giving different possible outcomes. You should use examples to support your explanations. You should reach a conclusion about the effectiveness that is justified by the evidence you presented.
Effectiveness could be considered in terms of the following:

- **UNCLOS regulations delimiting EEZs.** These are workable in many places. However, not all countries agree, and wish to extend their limits. Some areas are particularly prone to disputes, for example the Arctic Ocean.
- **Rules allowing the peaceful passage of shipping through territorial waters** are mostly successful, apart from instances of illegal piracy.
- **Regulations concerning the sustainable management of resources rely on international cooperation.** No regulations are globally enforceable, which can limit effectiveness. There has been some success in controlling overfishing, thus protecting resources.
- **Many regulations regarding protection of the oceans are in the early stages** (e.g. EU Marine Directive) so it is difficult to assess their effectiveness. At present they have had limited impact on ocean garbage patches.
- **IMO rules regulating the construction and operation of oil tankers** may have been effective in protecting resources by decreasing pollution. However, they rely on individual member countries enforcing the rules, which may decrease the effectiveness. Decreases in spillages due to accidents may be due to advances in navigation technology.
- **Some agreements, such as the ban on whale hunting,** rely on countries joining and cannot be globally enforced. While the majority agree, making the agreement effective, some whale hunting still occurs, limiting the effectiveness of the agreed ban.
- **As present-day resources become exhausted,** and with modern technological advances, the exploitation of deeper ocean resources will become increasingly probable. Most agreements do not consider the regulation of such resources. In future, therefore, the agreements may be limited in effectiveness.

**Chapter 5**

1. **Exam tip**

   In this question, marks are divided between the three assessment objectives. Up to 14 marks are for A01, where you must demonstrate your thorough knowledge and understanding of the topic. The command word discuss targets A02, where up to 20 marks are available. You are required to apply your knowledge to give a considered review of the statement in the question, with well-constructed arguments supported by evidence and examples. Your answer must consider all points of view about the validity of the statement. The final marks are for A03. You must reach a conclusion that is supported by your evidence.

Evidence of A01 — knowledge and understanding of tectonic hazards and their impact — may include the following:

- The type of primary and secondary effects of hazards that can impact on an area, such as earthquakes and tsunamis, and volcanoes (including lava flows, pyroclastic flows, ashfalls, lahars).
- The characteristics of the different hazards.
- Impacts can be economic (such as loss of production) and social (such as loss of life and homelessness).
- The impact can be at a local, regional or global scale.

Evidence of A02 — application of knowledge — may include the following:

- The impact of tectonic hazards can be influenced by the physical characteristics of the hazard profile:
  - type of hazard
  - magnitude
  - predictability
  - duration
  - frequency
  - speed of onset
  - areal extent
- Variations in physical characteristics can influence the impact regardless of the level of economic development.
- The impact can also be affected by other characteristics of the hazard area, such as:
  - population density
  - land use
  - the possibility of secondary effects, such as landslides and tsunamis
- Variations in these characteristics of an area can influence the impact regardless of the level of economic development.
• The level of economic development can influence the level of an area’s vulnerability, thus affecting impact.
• Less-developed areas are less able to prepare for a hazard, such as through building codes and land use zoning. They are less able to cope with the effects, when a high death toll and the amount of damage mean that a disaster is more likely.
• Some hazards, such as major tsunamis, can become disasters even for areas of high economic development if the effects are great enough. However, the length of time an economically developed area takes to recover may be less.
• More developed areas are better able to act after an event to reduce the risk of future hazards, reducing the impact.
• Wealthy areas may have insurance cover, which reduces vulnerability and lowers the impact.
• More developed areas may be more reliant on technology and features such as undersea cables. If these are destroyed it may increase the impact.
• Links could be made to the pressure and release model to explain vulnerability and possible impact.

Social factors that can influence the impact of hazards.
• The impact can be at a local, regional or global scale.

Evidence of A02 — application of knowledge — may include the following:
• Impact is influenced by the type of tectonic hazard, for example volcanoes are more predictable than earthquakes, which may be more important a factor than social factors.
• The impact of tectonic hazards can be influenced by the physical characteristics of the hazard profile. Similar hazards may have a different impact regardless of social factors.
• Social factors, such as population size, age structure, education levels, the role of women and the level of perception, can all influence the level of vulnerability and consequently the impact of a tectonic hazard.
• Economic factors can influence an area’s vulnerability and therefore the impact of a hazard. Economic development can also influence recovery after an event. These factors may have a greater influence than social factors.
• Some hazards can become disasters for areas regardless of the social factors, if the effects are so great (e.g. a major tsunami).

Evidence of A01 — knowledge and understanding of tectonic hazards and their impact — may include the following:
• The types of primary and secondary effects of hazards that can impact on an area, such as earthquakes and tsunamis, and volcanoes (including lava flows, pyroclastic flows, ashfalls, lahars).
• The characteristics of the different hazards.
• Impacts can be economic (such as loss of production) and social (such as loss of life and homelessness).

2

Exam tip
In this question, most marks are divided between A01 and A02. Up to 6 marks are for A01, where you must demonstrate your thorough knowledge and understanding of the topic. The command word discuss targets A02, where up to 13 marks are available. You are required to apply your knowledge to give a considered review of the statement in the question, with well-constructed arguments supported by evidence and examples. You must consider all points of view about the validity of the statement. The final mark is for A03. You must reach a conclusion that is supported by your evidence.

Evidence of A01 — knowledge and understanding of tectonic hazards and their impact — may include the following:
• The types of primary and secondary effects of hazards that can impact on an area, such as earthquakes and tsunamis, and volcanoes (including lava flows, pyroclastic flows, ashfalls, lahars).
• The characteristics of the different hazards.
• Impacts can be economic (such as loss of production) and social (such as loss of life and homelessness).

3 a) 

Exam tip
The command word describe is used to target A03. You must give the distinctive features of the trends shown. Note that the graph shows trends as well as the actual number of eruptions each year.

From 1950 to 2003 the number of new eruptions varied from 24 to 45.
Apart from 1975, the number of new eruptions was always greater than 25.
There was an increase in the number of new eruptions from 2003 to 2005.
For most years the number of new eruptions was between 25 and 35.
The linear trend decreased slightly, from 35 to 34, between 1950 and 2015.
The 10-year average declined slightly to a low of 31 between 1955 and 1995. It rose to a peak of 41 in 2006 and then fell back to a level similar to that in 1955.

b) 

Exam tip
In part b) outline is a command word used for A01. It requires you to use your knowledge of the subject to give a brief summary of the main limitations of the graph.
The graph only gives the number of new eruptions. There is no identification of the physical characteristics of the eruptions such as magnitude, type of eruption, length of eruption and associated hazards (such as pyroclastic flows). There is no mention of location or the scale of the area affected. It is impossible to tell the impact the eruptions may have.

**c)**

**Exam tip**

Part c) targets AO2, where you apply your knowledge and put forward informed ideas about what influences the risk from volcanic activity.

Location of communities — those near plate boundaries and hotspots are much more at risk than those in other areas. Communities living close to active volcanoes have an increased level of risk.

Profile of the volcanic event — an eruption of greater magnitude may increase the impact on communities. Type of eruption — explosive eruptions and those producing pyroclastic flows may have a bigger impact on nearby communities than on those living close to effusive eruptions. Vulnerability — some communities are more vulnerable than others and therefore more at risk. The level of vulnerability, and consequently risk, can be influenced by a community’s ability to evacuate, its role in society, the age structure, level of education of the hazard and preparedness. Level of economic development — more economically developed communities can take actions to reduce vulnerability and to cope with the effects of a volcanic event, which can reduce the level of risk.