Exam Practice: Answers

Topic 1

Page 8

1. Describe the location of high-pressure areas in Figure 1.2 (page 7). [2]

One mark for each accurate descriptive point using evidence from the figure.

• High-pressure areas are found in bands just north and south of the equator.
• High pressure is found at the poles, for example, Antarctica.

2. Explain two ways in which heat is transferred from the equator towards the poles. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

• Heat is transferred in the atmosphere by atmospheric cells, such as the Hadley cells and Ferrel cells moving heat northwards.
• Ocean currents move heat in the water, such as warm currents moving heat away from the equator toward the poles.

Page 10

1. Describe the pattern of climate change since 1 AD shown in Figure 1.5. [2]

One mark for each accurate descriptive point using evidence from the figure.

• The climate warmed up between 1 AD and 900 AD by about 0.5 °C.
• There was a cool period, the Little Ice Age 1400–1800 AD, when the climate was 0.6 °C cooler.
• The climate has warmed rapidly since 1850.

2. Explain two sources of evidence for past climate change. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

• Ice cores in Greenland’s and Antarctica’s ice sheets contain ancient air bubbles. These can be analysed for CO2 levels which indicate cold and warm climates in the past.
• Tree ring widths are narrower in cool/dry periods and wider in warm/wet periods. The sequence of tree rings can be used to show climate variation over time.
• Historical records such as paintings or diaries can be used, but they only provide a snapshot, not a long time sequence, and are not reliable.

3. Assess the extent to which the Earth’s climate has changed in the past due to natural causes. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

• Long-term climate change is caused by orbital changes (Milankovitch mechanism) over 10,000 years, but it happens slowly and only changes climate very gradually; it seems to be responsible for ice ages, which have a climate very different from today’s.
• Volcanic activity, on the other hand, causes climate cooling, but only for short periods of time, usually just a few years.
• Asteroid impacts are very rare, but would cool the climate rather like a volcanic eruption; the cooling would be much worse but still only for a few years or a decade.
• Variations in solar output (sunspots) cause both warming and cooling for several decades, like the Little Ice Age – but only by 0.5–1.0 °C.
• Overall, orbital changes cause long-term, significant changes whereas the other causes are much shorter in timescale.
1. Describe the future projections of temperature shown in Figure 1.7. [2]
   One mark for each accurate descriptive point using evidence from the figure.
   - Temperatures by 2100 are expected to rise to between 16 and 20 °C.
   - The most likely temperature is 17.8 °C by 2100.

2. Explain two human activities that are major sources of greenhouse gas emissions. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Supplying people with electrical power is a major cause, producing 39 per cent of all carbon dioxide. This gas is released because most energy comes from burning fossil fuels such as coal.
   - Farming and food production is a major source of methane, which is released by rice paddy fields and cattle farming.

3. Assess the impacts of global warming for both developing/emerging and developed countries. [8]
   Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
   - In the UK, farmers will need to change to different crops and irrigation costs could rise, but in Bangladesh crop failure from drought or flooding would be much more serious.
   - As the UK is wealthy, people can afford to adapt; this may not be possible for people with low incomes in Bangladesh.
   - In the UK there could be some positive impacts such as greater tourism, but positive impacts are much less likely in Bangladesh.
   - Bangladesh may face water shortages, homes destroyed by floods and large areas of land flooded by sea level rise — none of these will occur on the same scale in the UK.
   - Overall, the economic and social impacts are likely to be much more severe in developing countries.

Page 16

1. Describe the distribution of tropical cyclones shown in Figure 1.9. [2]
   One mark for each accurate descriptive point using evidence from the figure.
   - Tropical cyclones are found just north and south of the equator.
   - The largest concentrations are found in east Asia and the east Pacific.

2. Explain how tropical cyclones form. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Tropical cyclones form when the ocean temperature is 26.5 °C or higher, leading to high evaporation and rising air currents.
   - The rising air condenses to form storm clouds, which are then rotated by the Coriolis force to create the spiral cloud bands of the cyclone.

Page 18

1. Explain how tropical cyclones produce multiple hazards. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - The low pressure within a tropical cyclone causes the surface of the sea to rise, creating a storm surge which is then pushed onshore by strong winds, leading to flooding.
   - Tropical cyclones produce intensive rainfall that causes flooding, but the rainfall often triggers landslides which destroy homes.
2. Explain two reasons why some areas are more vulnerable to tropical cyclones than other areas. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Areas that are low-lying land near the coast are more likely to be flooded because the storm surge will travel further inland.
- Low-income countries, such as Haiti and Bangladesh, are more vulnerable because poverty means people have no insurance and no financial safety net to help rebuild their lives.

Page 19

Assess the reasons why preparation for tropical cyclones is better in some countries than in others. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Wealthy countries like the USA have the money to afford complex forecasting technology such as satellites.
- In poorer countries, like Bangladesh, warning and evacuation is much harder due to lack of resources and poor communications.
- In the USA, there are flood defences such as levees, but in countries like Bangladesh these are just too expensive to build.
- Emergency managers, like FEMA in the USA, will reach people and provide help faster than in poorer places.
- However, Bangladesh has expanded the number of cyclone shelters, and warnings are much better than in the past.
- Overall, low-income developing countries are much less well prepared due to poverty and poor communications.

Page 21

1. Describe the structure of the Earth’s interior shown in Figure 1.10. [2]

One mark for each accurate descriptive point using evidence from the figure.

- The Earth’s interior consists of concentric layers.
- From the centre, these are the inner core, outer core, mantle and lithosphere.

2. Explain the causes of tectonic plate movement. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Heat from radioactive decay in the Earth’s core rises through the mantle in convection currents. These currents move the plates at the Earth’s surface.
- At subduction zones, cold, dense plates sink into the mantle, which pulls the plate at the surface down by a process called slab-pull.

Page 25

1. Define the term ‘hotspot’. [2]

- An isolated column or plume of rising (convecting) heat within the mantle.

2. Explain the process of subduction at a convergent plate boundary. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- At a convergent plate boundary, a dense oceanic plate collides with a less dense continental plate, such as between the oceanic Nazca Plate and continental South American Plate.
- The denser oceanic plate sinks beneath the continental plate, and because it is cold and high density it sinks into the mantle below.
3. Explain two reasons why some volcanoes have high explosivity. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Some volcanoes erupt very infrequently, such as Mt Pinatubo in the Philippines; pressure from molten magma below builds up over time, eventually resulting in an explosive eruption.
- Some types of magma such as andesite have a high gas and silica content. This means that the magma is sticky and explosive.

Page 27

1. Suggest two reasons why the impacts of earthquakes are often worse in the developing world. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- In developing countries, such as Haiti, many buildings in slums are constructed of waste materials. These can collapse during earthquakes, burying their occupants.
- Emergency services like fire and rescue and hospitals are less common in developing countries, so the immediate response is not as good and people are not rescued as quickly.

2. Assess the extent to which the impacts of earthquakes can be reduced by preparation and relief. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Whereas volcanic eruptions can often be predicted, earthquakes cannot; this makes preparation even more important.
- Preparation can reduce death tolls, especially using land-use zoning and earthquake-proof buildings, but this is only common in the developed world.
- Education and helping people understand risks can happen in all countries and is cheap to implement.
- Relief is more important in developing countries, but it often has to come from abroad and is slow to arrive. However, it is crucial in saving lives by providing emergency food, water and shelter. In developed countries, insurance and government funds help people recover.
- Overall, preparation is better as it happens before the earthquake; relief efforts can only try to prevent the impacts getting even worse.
- Even in a developed country, a major earthquake will cause widespread damage to property, businesses and infrastructure, even with the best possible preparation.
1. Using Figure 2.1, describe the distribution of developing countries. [2]
   One mark for each accurate descriptive point using evidence from the figure.
   - Most developing countries are located in Africa.
   - There are a small number of developing countries in south Asia, the Middle East and South-East Asia.

2. Explain two ways that development level can be measured. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Economic development can be measured by annual gross domestic product per capita, which is a measure of average income in a country.
   - Social development can be measured by the human development index, which combines income, education and life expectancy, and ranges from 0 to 1.0.

3. Describe the shape of Haiti’s population pyramid. [2]
   One mark for each accurate descriptive point using evidence from the figure.
   - The pyramid has a wide base with close to 600,000 in the 0–4 age group.
   - From the ages of 20–24 the pyramid narrows very quickly with increasing age.

4. Explain why fertility rates fall as a country develops. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - In developing countries, fertility rates are high because children work from a young age providing family income, but as family incomes rise this is needed less so women have fewer children.
   - Women enter the workforce in greater numbers as countries develop, and they focus on earning money and their careers so have fewer children on average.

Page 33

1. Define the term ‘colonialism’. [2]
   - When one country takes over and runs another country.

2. Explain how Rostow’s modernisation theory can help understanding of the process of development. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Stage 2 of Rostow’s model says that countries need to get the ‘preconditions’ for take-off; many developing countries in Africa lack energy supplies, transport infrastructure and trade links, which explains their lack of development.
   - Emerging countries, such as China, are at Stage 3, because they are going through the process of industrialisation, creating development through jobs and higher incomes.

3. Assess the importance of historical, economic and political factors in explaining global inequality. [8]
   Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
   - Make sure you cover all three factors.
   - Historical factors include the fact that many African countries were colonies of European countries; this prevented their development until recently and many still export low-value raw materials which earn only small amounts of money through trade.
   - Economically, some developing countries might be seen as being exploited and in a state of dependency (Frank’s model), whereas developed countries dominate global trade, manufacturing and services – explaining the developed/developing world inequality.
   - Political corruption and lack of freedom in some countries holds them back from development, keeping many people poor – the rich world/poor world divide.
   - Social and environmental factors are also important.
   - Overall, lack of economic development is probably the most important factor.
Page 36

1. Explain the term ‘bottom-up strategy’. [2]
   * One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   * Small-scale, low-cost intermediate technology projects that are run by communities themselves, often with help from a non-governmental organisation.

2. Explain why top-down development strategies often have costs. [4]
   * One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   * Top-down development strategies are large scale and use huge amounts of resources, for example building the Three Gorges Dam. Because of this they have large environmental impacts like flooding valleys or deforestation.
   * Due to their size they can cost billions of dollars, which means governments divert money from other projects to pay for them or borrow and get into debt.

3. Assess the impact of globalisation on different countries. [8]
   * Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
   * You should consider at least two countries, for example one emerging and one developed.
   * Globalisation has had positive impacts on China, including huge growth in jobs in manufacturing, often employing female workers who are better off than in the rural areas they came from.
   * However, these jobs are very hard, with low pay and poor working conditions. Because TNCs that have moved to China have few regulations on them, pollution levels are high and workers’ rights are not protected.
   * Developed countries, such as the USA and UK, have lost factory jobs as they have moved to China, causing unemployment in some places.
   * In some developing countries in Africa, globalisation has had very little impact so far because countries are not well connected to the rest of the world.
   * Overall, globalisation has usually led to economic growth but caused social inequality and environmental problems.

Page 38

1. Using Figure 2.5, describe China’s location within Asia. [2]
   * One mark for each accurate descriptive point using evidence from the figure.
   * China is located in eastern Asia.
   * It extends inland west towards India and Kazakhstan and north to the border with Russia and Mongolia.

2. Suggest two ways in which China can be considered a globally significant country. [4]
   * One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.
   * China has a very large proportion of the world’s total population, meaning its 1.4 billion people represent a huge economic market.
   * China is significant environmentally because it emits more carbon dioxide than any other country, so controlling global pollution has to involve China.
   * China is important because it is a large military power and is a member of the UN Security Council which can influence global events.

Page 41

1. Describe the trend in Chinese GDP shown in Figure 2.6. [2]
   * One mark for each accurate descriptive point using evidence from the figure.
   * GDP grew slowly up to 2003, reaching about $2 trillion.
   * Since 2003, GDP growth has been very rapid and steep, reaching $12 trillion by 2014.
2. Explain how the economic sectors of the Chinese economy have changed over time. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Primary sector employment in farming and mining has declined in importance because China has industrialised and people have migrated from rural areas to urban areas.
- As China has industrialised, the proportion of people working in the secondary sector has increased to around 50 per cent, because many factories have opened in China’s coastal cities.

3. Define the term ‘foreign direct investment’. [2]

- When money from one country is invested abroad in another.
- This is most often done by transnational corporations (TNCs), for example, opening a factory or an office in another country.

4. Explain how the government of China has helped the process of globalisation. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- The Chinese government’s Open Door Policy started in 1980; this made it easier for foreign TNCs to invest in China.
- China’s government has invested huge sums of money into infrastructure, for instance building 22,000 km of high-speed railways. This has made the country very attractive to foreign direct investment (FDI) as transport has improved.

Page 44

1. Define the term ‘rural–urban migration’. [2]

- When people move from the countryside to cities.
- Often this involves young people moving to find jobs.

2. Explain two reasons why some parts of China have higher per capita incomes than others. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Some parts of China, such as Yunnan and Sichuan, are in the periphery of China with few connections to coastal cities; many people here still work in farming and have low incomes.
- China’s core coastal cities, for example Shanghai, are much wealthier, because this is where most factories and offices are located and most FDI occurs, so people have higher incomes from better jobs.

3. Assess the positive and negative impacts of globalisation on different groups of people. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Make sure you refer to several groups (see Table 2.13 on page 43).
- Female factory workers, on balance, are better off than if they had stayed in the countryside where many came from, but factory working conditions are poor.
- Office workers and business people have benefited hugely from globalisation in China; they have incomes similar to those in the UK. On the other hand, many Chinese cities are very polluted and congested; much worse than in the UK.
- In rural China, less touched by globalisation, life is still very hard and poverty is common.
- It is urban places and people that have benefited the most, but even here quality of life may not be very high.
Page 45
Explain two environmental problems caused by rapid economic development. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- In China, rapid industrialisation has led to water pollution from industry and growing cities; 25 per cent of China’s rivers and 60 per cent of its groundwater are severely polluted.
- Pollution from factories in Shanghai and Shenzhen has reduced urban air quality, so 95 per cent of urban people in China breathe polluted air.

Page 47
Assess how far economic development in China has changed its relationship with the rest of the world. [8]
Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
- Chinese economic growth has allowed the country to invest in a large military, so it is now the major political power in Asia and the largest economy – it has overtaken Japan.
- China can no longer be ignored by other countries; it emits such a large proportion of the world’s carbon dioxide that any successful agreement to reduce global warming would have to involve China.
- China’s factories produce huge amounts of goods for the rest of the world, so other countries rely on trade with China; this means that good relationships with China are important for smooth trade.
- As China has become richer and more powerful, it has begun to challenge the importance of the USA as the world’s leading country.
- However, because of its poor record on freedom and human rights many countries still criticise China.
- Overall, China has moved from being a country that many other countries ignored in 1980 to become one of the world’s most influential countries today.
**Page 50**
1. **Calculate the change in percentage urbanisation for Asia between 1980 and 2017 shown in Figure 3.1. [2]**
   - 22 per cent (urbanisation was 27 per cent in 1980 rising to 49 per cent in 2017, a difference of 22 per cent)

2. **Describe the global pattern of megacities shown in Figure 3.2. [4]**
   *One mark for each accurate descriptive point using evidence from the figure.*
   - Most megacities of over 16 million people are in Asia.
   - There are seven megacities of over 23 million people in Asia.
   - Africa and Oceania are the continents with the fewest megacities.
   - Europe, North and South America each have between three and four megacities, but they tend to be smaller than Asian megacities.

3. **Explain one problem caused by urban primacy. [2]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Because primate cities are so large compared to other cities in a country they tend to attract most migrants/investment so urban problems such as pollution/poverty tend to become concentrated in the primate city.

**Page 52**
1. **Explain the processes that lead to increased urbanisation. [4]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Urbanisation is caused mainly by rural–urban migration, when people from the countryside with low incomes move to cities in search of employment and other opportunities.
   - It is also caused by internal growth, when newly arrived young migrants have children, which increases the population even more.

2. **Explain one reason for population decline in some cities. [2]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Cities in developed countries sometimes begin to decline because of deindustrialisation.
   - When factories have closed and workers have lost jobs, people migrate out of the city to find work elsewhere.

3. **Explain two differences in employment between developed and developing world cities. [4]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - In developing world cities more people are employed in the informal sector, which means working in unregulated, untaxed work with unreliable incomes.
   - In developed world cities most jobs are in the tertiary sector, compared to primary and secondary jobs in developing cities. This is because of a more advanced, skilled economy.

**Page 54**
1. **Define the term ‘suburbanisation’. [2]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Suburbanisation happens when wealthier people move out of inner cities to housing on the city edge; it happens because people move away from the problems in the centre of the city, such as pollution.

2. **Explain two reasons why land values are highest in the CBD of a city. [4]**
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - The CBD is the most accessible part of the city where roads and railways meet, so shops and offices compete to locate there, pushing up land values.
   - The area of the CBD is small, meaning there is not much land available, so land values are high.
Page 56

1. Define the term ‘megacity’. [1]
   - A city with a population of over 10 million people.

2. Explain why both site and situation were important in the growth of a named megacity. [4]
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Karachi’s site is a flat coastal plain with a natural harbour, which was ideal for farmland as well as providing an area for a port to grow.
   - Karachi is situated on a major trading route in the Indian Ocean, which contributed to the development of its port and trading economy.

3. Describe the pattern of land use shown in Figure 3.5. [4]
   *One mark for each accurate descriptive point using evidence from the figure.*
   - Commercial land use is found close to the CBD.
   - Industrial areas are mostly close to the port area and rivers.
   - Most of the land is residential.
   - Slums are found throughout Karachi, with a concentration close to and north of the CBD.

4. Assess the significance of a named megacity for its country and in a global context. [8]
   *Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.*
   - Karachi is the most important city in Pakistan in terms of the country’s economy, because of its manufacturing industry, banking and stock exchange.
   - It is also a very important port, which connects the interior of Pakistan to trade.
   - Karachi’s airport means it is a hub that connects Pakistan to the rest of the world.
   - Because of its trading location, many global TNCs have invested in Karachi.
   - Despite being a major city, it is perhaps less important than megacities in the developed world or China, plus it is not the political capital city of Pakistan.

Page 60

1. Describe the trends in Karachi’s population growth shown in Figure 3.6. [2]
   *One mark for each accurate descriptive point using evidence from the figure.*
   - Population grew only very slowly between 1901 and 1951, rising to 1.5 million.
   - Between 1951 and 2001, growth was very rapid, rising from 1.5 million to over 20 million.

2. Suggest one economic reason for the rapid growth of a named megacity. [2]
   *One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.*
   - Karachi has grown economically because of export processing zones located in the city, which have attracted FDI from foreign TNCs, creating jobs.

3. Explain why the population of a named megacity has grown so rapidly. [4]
   *One mark for a basic explanation, plus another mark for extending this explanation or using a located example.*
   - Karachi’s population has grown very rapidly as a result of migration; this includes rural–urban migration, and 40,000–50,000 new migrants arriving in Karachi every month.
   - A natural increase has caused rapid population growth because Karachi has a fertility rate of 2.7 and many newly arrived migrants have children.
4. Describe the pattern of quality of life in a named megacity. [4]

One mark for each accurate descriptive point.

- In Karachi, quality of life is highest in the centre of the city and lowest on the city edge.
- Recent slums with a low quality of life are found at the city’s edge.
- Wealthy areas such as Clifton are close to the CBD.
- Medium quality of life locations such as Jamshed and Malir are found between high and low quality of life areas.

5. Assess the challenges facing people living in a named megacity. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- 55 per cent of people in Karachi live in slums, with a low quality of life; rents are very high due to housing shortages.
- Water is very expensive and the supply is poor, leading to health problems.
- Pollution and waste are major problems.
- Karachi is very heavily congested, leading to air pollution.
- The continued growth of Karachi is so rapid that the city cannot cope with the number of new migrants arriving.
- You should conclude by stating which challenges are the biggest: in Karachi, housing shortages and slum housing are a huge problem because of their scale; water and sanitation problems lead directly to disease and health problems.

Page 62

1. Define the term ‘bottom-up strategy’. [2]

- A solution that is low cost and uses simple technology managed by the community that needs help, often aided by an NGO.

2. Explain two ways top-down strategies in megacities have helped low-income people. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- In Karachi, the Orangi Town Pilot Project has been improving the Orangi slum since 1980. It helps residents improve the sewers, reducing disease in their slum.
- Since 2008, the Aman Foundation charity has helped provide low-cost healthcare for low-income people. It provides emergency ambulances and a telephone diagnosis service.

3. Assess how far bottom-up strategies to improve life in a named megacity have helped to improve quality of life. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- To fully answer this question you need to use Table 3.10 on page 62.
- Use at least two of the bottom-up strategies.
- The Orangi Town Pilot Project has clearly helped people in slums by improving sewers and reducing health issues.
- However, it is not free, it only helps this one slum (Orangi) and there are many more slums in Karachi which are not helped; migrants are arriving every day so the problems many actually be growing, not shrinking.
- The schools provided by the Citizens Foundation will provide children with an education and opportunities, but the impact is small and only a very small number of children are helped; what happens if the donations the charity relies on run out?
- Overall, bottom-up projects are good but only for quite small numbers of people; they will not solve all of Karachi’s problems on their own.
Topic 4

Page 65
1. Name the two main factors responsible for the UK’s uplands. [2]
   - Geology (rock type).
   - Landscape processes, particularly glaciation.

2. Explain how landscape processes are affected by climate. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Precipitation and temperature are the two features of climate that most affect landscape processes. For example, the amount of precipitation determines whether the processes are fluvial, semi-arid or arid, while temperature determines whether the processes are fluvial, fluvio-glacial, periglacial or glacial.
   - Both precipitation and temperature also affect weathering (physical or chemical) and mass movement (type and speed).

Page 67
1. Assess the part played by geology in the creation of uplands in the UK. [8]
   Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
   - The most significant aspects of geology are rock type (hard/soft, permeable/impermeable, porous/non-porous, igneous/sedimentary/metamorphic).
   - However, geological structure, for example, folding and faulting caused by tectonic activity, is also important.
   - It is difficult to assess which is the more important as they interact. For example, UK uplands are underlain by hard, igneous and metamorphic rocks that have been uplifted by tectonic movements.
   - Uplands have also been modified by glaciation and river processes, so the appearance of the landscape today is also a result of surface processes, not just the geology and rock type beneath.

2. Explain two ways in which human activity has influenced the UK’s physical landscape. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - By reclaiming wetlands, as in the Fens.
   - Flooding valleys to create reservoirs, as in Snowdonia; creating cuttings for canals, roads and railways.

Page 70
1. State one difference and one similarity between a spit and a bar. [2]
   - Difference: a spit is anchored to the coast at one end; a bar may be fixed at both ends or not at all.
   - Similarity: both are made up of deposits of sand, gravel and silt.

2. Suggest reasons why the direction of longshore drift along the south coast of the Isle of Purbeck is eastwards. [4]
   - Because the fetch and prevailing wind are from the south-west, and the dominant direction winds are important in the longshore drift process.
   - This strikes the south coast at such an angle as to create longshore drift in an easterly direction.

Page 71
1. Identify the land-based activity that you think most affects the coastal landscape. Explain your reasons. [4]
   - A number of possibilities here: tourism (creating a new coastal landscape of hotels, promenades and so on); energy generation (sheer scale, visual intrusion, safety perimeter and so on); industry (land reclamation, visual intrusion, pollution and so on).
2. Assess the arguments for and against making use of coastal mudflats and marshes. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Relatively easy to reclaim and so can provide cheap land for urban and industrial developments.
- Coasts are accessible places, in demand for developments such as ports and coastal industry which could create economic growth.
- Involves losing valuable ecosystems and important components in the workings of the coastal system.
- Mudflats and marshes, in some cases, act as a natural coastal defence, so removing them could create risks in the future.
- If sea levels rise, developments would be at risk and could need expensive coastal defences in the near future.

Page 74

1. Explain why global warming is increasing the coastal flood risk. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Global warming will lead to a higher sea level, and more climatic hazards such as storms and tropical cyclones.
- Both prospects are likely to mean more coastal flooding. The former is likely to lead to the permanent submergence of land. The latter is likely to cause more frequent flooding of the coastal zone.

2. Assess the costs and benefits of hard and soft engineering in managing coastal erosion in the UK. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Hard engineering: likely to deal with the coastal problem in the short term, but expensive and not a long-term solution.
- Very likely to upset the balance of the coastal system in some way, for example groynes interfere with longshore drift; visually intrusive.
- Soft engineering: working with nature offers a cheaper form of action, but unlikely to prevent or reverse what the natural forces of the coast are leading to.
- Less visually obvious. There is more to be said for soft engineering, unless large investments in property are threatened.
- People who are threatened by erosion, may prefer hard engineering as it is more ‘obvious’ that something has been done to try and reduce erosion.
- Hard engineering could damage coastal ecosystems.
- Overall, long-term soft engineering may be better for the environment and economically cheaper, but people may be in favour of hard defences.

Page 78

1. Explain the differences between an estuary and a delta. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- At an estuary the river mouth is open (often navigable) and its shores are usually characterised by mudflats.
- A delta is an extensive area of deposition that completely fills the estuary and spills out into the open sea. The river’s course becomes braided into a number of channels.
2. Assess the value of hydrographs. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Hydrographs are useful in showing how a river’s discharge varies over time.
- They also useful in showing how discharge responds to rainfall, especially storm events that can increase flood risk.
- The nature of that response time can inform us about characteristics of the drainage basin, such as its geology and slopes, as well as the vegetation cover and land use.
- Hydrographs from one flood event can be used to help predict how a river might respond to a future flood event, and this could help in planning flood defences.
- However, hydrographs are just data – they don’t protect people and property from flooding or flood risk.

Page 80

1. Identify two river landscape changes resulting from deforestation. [2]

- Runoff increases and feeds more eroded material (silt) into the river, thereby creating depositional features such as sand and mudbanks.
- Increased runoff on bare slopes can lead to gullying of valley sides.

2. Assess the ways in which people can increase the risk of flooding. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- One of the most obvious ways is by altering the ground surface in such a way as to speed up runoff.
- For example, by deforestation, clearing slopes and urbanisation (roads, pavements and concrete surfaces).
- Another obvious way is to build settlements on flood plains where the flood risk is high anyway. Often these two ways go hand-in-hand, with the clearance of vegetation cover to make way for the urbanisation of valleys (sides and floors).
- It might be argued that global warming is increasing flood risk in some places due to heavier rainfall events.
- Overall, flood risk rises as a result of people building in high-risk areas, and changing processes in a river catchment that increase surface runoff; the combination of these two changes together is crucial.

Page 82

1. Suggest reasons why some rivers are more prone to flood than others. [4]

One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.

- The nature of the drainage basin’s rainfall regime: heavy, intense showers will make the river more prone to flood. So too will the sudden spring melt of snow accumulated during the winter.
- Rivers with large catchments, gently sloping long profiles and steep valley sides are likely to be very flood prone.

2. Explain why soft engineering is often preferred to hard engineering when managing river flood risk. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- Soft engineering solutions are often preferred because they are cheaper, quicker to implement and less obtrusive in the landscape.
- Soft engineering should represent a long-term solution that works with the natural processes of a river.
Topic 5

Page 84
1. Suggest two reasons why population density varies within the UK. [4]
   One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.
   - Differences in physical geography, for example, lowland vs upland.
   - Differences between rural and urban areas.

2. Explain how investment in transport might reduce the gap between urban cores and rural areas. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   - Improved transport would allow people to commute over longer distances, so urban core commuters would be able to live in rural areas.
   - Equally, investment in transport would allow more urban core residents to enjoy what rural areas have to offer in terms of amenities, recreation and leisure. Both developments would benefit rural areas and so narrow the prosperity gap.

Page 87
1. Suggest reasons why tourism is thought to be part of globalisation. [4]
   One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.
   - Thanks to transport developments, globalisation has brought about an increasing volume of population movement (migration) at an international scale.
   - Tourism is simply another manifestation of that increased mobility. It is also helping to increase the interdependence of countries as suppliers of tourists or as tourist destinations.

2. Assess the reasons for the deindustrialisation of the UK. [8]
   Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
   - The UK has lost its traditional heavy industries such as steel, shipbuilding and chemicals.
   - The main reason is that industries, both traditional and modern, are now to be found in more profitable locations outside the UK.
   - The factors responsible for this shift include cheaper labour, better raw material sources and fewer regulations relating to such things as pollution, working conditions, working practices and wages.
   - In most cases, industry has moved to emerging countries such as China and India.
   - However, the UK still has industries, but many of these are of either the service or high-tech kind.
   - Overall, a key factor in globalisation is the development of transport and communication technology, which has allowed industries that were once based in the UK to move abroad.

Page 89
1. Identify four different types of gradient that exist within a UK city. [4]
   - Age of development; land and property values; land use; social status; environmental quality.

2. Study Figure 5.6. State two land uses that are typically found in the urban fringe. [2]
   - Two from: edge-of-town shopping centres; industrial estates; office and science parks; recreation areas.
Page 92
1. Explain what attracts immigrants to large cities. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Job opportunities; availability of cheap housing; presence of people of similar ethnicity or socio-economic class; presence of family and friends who have already immigrated and settled down.
- Any assessment of the relative importance of these factors requires taking into account the character and circumstances of the individual immigrants. For most, the top two considerations are likely to be work and housing.

2. Give three examples of the inequalities that exist within cities. [3]
- Inequalities: in wealth and earning power; in educational opportunities; in health and access to healthcare; in housing conditions.

Page 94
1. Suggest reasons for building retail and office parks on the fringes of the city. [4]
One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.
- Better accessibility by road, for both workers and clients.
- Cheaper land, which is important because these parks are large consumers of space.
- A more pleasant working environment, which will help attract employees to work there.

2. Explain the difference between studentification and gentrification. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Both involve rundown inner-city areas. Studentification leads to a concentration of students in those districts accessible to universities and other places of higher education. Landlords subdivide houses into cheap flats and one-room lets. Gentrification occurs when more affluent people see the potential attractions of living in such areas. They move in and spend large sums on upgrading both the housing and the local amenities.
- The residential population changes with both, but with studentification the improvement of the housing stock and residential environment is comparatively minimal.

Page 96
1. Identify two more impacts to add to Table 5.4: one positive and another negative. [2]
- Positive: upgrading of local services and amenities.
- Negative: existing residents gradually squeezed out by rising property prices.

2. Assess possible strategies for making urban living more sustainable. [8]
Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
- Promoting the use of public transport which would remove cars from the roads, reducing congestion and pollution.
- Reducing commuting distances by regenerating urban spaces and encouraging people to live near their work – this would reduce pollution from journeys.
- Minimising all forms of pollution: air, water and noise; making homes and workplaces more energy efficient; recycling waste more efficiently.
- There is no single strategy that will produce a sustainable living space. All these and other possible actions are needed together to make urban living more sustainable.
- Some strategies are easier than others; for instance, urban regeneration can encourage people to move back to inner cities but it is very hard to persuade people to give up their cars and opt for ‘greener’ public transport.
1. Describe how cities and accessible rural areas are interdependent. [3]
One mark for each accurate descriptive point using evidence from the case study on page 98.
- Cities provide jobs for people living in rural areas.
- Cities provide a whole range of services (retail, educational, medical, cultural, entertainment and so on) for rural areas.
- At the same time, rural areas provide amenity space, leisure and recreation opportunities, as well as fresh food.

2. Explain the changes that counter-urbanisation brings to rural areas. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Counter-urbanisation is leading to the movement of people into rural areas, and the setting up of new businesses.
- This leads to an increase in the rural population and often a change in age groups, for example, young families moving to the rural areas.

Page 101

1. Explain why it is elderly people who suffer most in declining rural areas. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- It is young adults who are most likely to leave such areas. The elderly tend to be left behind.
- The elderly are unable to prevent the reduction in their quality of life that comes with the loss of services.

2. Assess the costs and benefits of promoting tourism in rural areas. [8]
Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
- Costs include environmental costs such as tourist traffic and honeypot congestion which may begin to damage the very things tourists have come to see.
- Economically many of the jobs that tourism creates are unskilled, low paid and very seasonal – so even perceived economic benefits may be quite small.
- Existing residents might experience loss of rural tranquillity.
- On the other hand, there are clear benefits including job creation, the creation of ancillary businesses such as farm and souvenir shops, and tourism helps reduce rural decline.
- Overall, tourism in rural areas tends to have two faces: it can stop rural areas declining but it is unlikely to replace the jobs lost from farming and it will change the character of the areas.
1. Explain one way a secondary data source you used supported your investigation. [2]

A geology map from the British Geological Survey was used to identify different rock types such as shale and sandstone.

This is useful because these erode at different rates and this affects the types of coastal management used.

2. Explain one possible source of error with the method you used to measure a beach profile. [2]

A clinometer was used to measure the slope angle of the beach profile, but it has to be level to measure the angle accurately.

If the angle is read when the clinometer is not level, the measurement could be incorrect.

3. Explain how the fieldwork data collection you completed supported your conclusions. [4]

Your answer to this question will depend on what you actually measured.

Try to quote a specific type of data you measured, such as a field sketch of an area that was being rapidly eroded, and then say how this helped with your conclusions, for example, that the sketch showed serious erosion and therefore that the coastline was not being successfully managed for some people.

You could also explain that other data, like your beach profile measurement, was less helpful, that is, you got accurate results but it was hard to link these to whether coastal management was successful or not.

4. Evaluate the methods you chose to analyse and present the primary fieldwork data that you collected. [8]

Your answer needs to make direct reference to your own fieldwork. You should take care to name the specific location(s) you visited. ‘Evaluate’ means thinking about the positives and negatives, or advantages and disadvantages, and then making an overall judgement about the success of something – in this case how you analysed and presented the primary data you collected. You must include a conclusion in your answer.

- Any methods you used to analyse data, such as putting the raw data into a spreadsheet and then working out averages or trends. Was this easy to do?
- Any analytical methods, such as using GIS to locate your data on a digital map: how did you do this and did it work?
- Did you have enough data to work out meaningful averages and trends or should you have collected more?
- Did any graphs you drew come out clearly or were they hard to interpret?
- Which was the most useful presentation method you used?
- Were some methods, like making a GIS map, quite hard to complete but actually very useful because they showed clear patterns that you could draw conclusions from?

1. Explain one way a secondary data source you used supported your investigation. [2]

A flood risk map from the Environment Agency was used to identify areas of high, medium and low flood risk.

This is useful because it showed locations of high risk that could be investigated in more detail for human and physical flood risk factors.
2. Explain one possible source of error with the method you used to measure river channel depth. [2]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- A tape measure and ruler were used to measure river channel depth. The tape needed to be stretched tight across the river and the ruler had to be vertical to measure depth.
- A sagging tape or an angled ruler could produce inaccurate results.

3. Explain how the fieldwork data collection you completed supported your conclusions. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Your answer to this question will depend on what you actually measured.
- Try to quote a specific type of data you measured, such as a field sketch of an area that was at risk from flooding, and then say how this helped with your conclusions, for example, that the sketch showed serious flood risk and therefore that properties were not being successfully managed for some people.
- You could also explain that other data, like your river channel profiles, were less helpful, that is, you got accurate results but it was hard to link these to whether flood management was successful or not.

4. Evaluate the methods you chose to analyse and present the primary fieldwork data you collected. [8]
Your answer needs to make direct reference to your own fieldwork. You should take care to name the specific location(s) you visited. ‘Evaluate’ means thinking about the positives and negatives, or advantages and disadvantages, and then making an overall judgement about the success of something – in this case how you analysed and presented the primary data you collected. You must include a conclusion in your answer. Try to include information about:
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- Which was the most useful presentation method you used?
- Were some methods, like making a GIS map, quite hard to complete but actually very useful because they showed clear patterns that you could draw conclusions from?

Page 111

1. Explain one problem with a secondary data source you used to support your investigation. [2]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- The 2011 census was used to investigate quality of life but it is now quite out of date, so the number of residents and/or their jobs and incomes could be very different now.

2. Explain one fieldwork method you used to determine quality of life. [2]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Questionnaire surveys were used to determine quality of life by asking 50 people in the area their opinions. Closed questions were used about housing and environmental quality because these are easier to answer and analyse.
3. Explain why you chose your fieldwork data collection sites. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

The answer will depend on where exactly you collected data, but try to include some of these points:

- Number of sites: you may have collected data in two or more places so you could compare locations.
- Accessibility: some locations could have been easier to get to.
- Secondary data: the census, or other secondary data, may have indicated interesting locations to study.
- Sampling: your sites may have been determined by a sampling strategy, for example, evenly spaced along a transect.

4. Evaluate the success of the primary data collection methods used in your investigation. [8]

Your answer needs to make direct reference to your own fieldwork. You should take care to name the specific location(s) you visited. ‘Evaluate’ means thinking about the positives and negatives, or advantages and disadvantages, and then making an overall judgement about the success of something – in this case your primary data collection methods. You must include a conclusion in your answer.

Try to include information about:

- The sites you chose: did you collect data in enough locations to get useful results?
- The equipment you used: did it work as you expected or was some of it hard to use and therefore some of your results may have errors?
- Questionnaires/EQS: did the questions work well, or did some people not really understand them? Was the data you collected useful in terms of your overall aim – did it help answer your investigation title or was some data ‘missing’?
- Remember you should only be writing about your primary data, not secondary data, for this question.

Page 113

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One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

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- Remember you should only be writing about your primary data, not secondary data, for this question.
Topic 7

Page 116

1. Describe the distribution of tropical rainforest shown in Figure 7.1 on page 114. [2]
   One mark for each accurate descriptive point using evidence from the figure.
   • Tropical rainforest is located close to the equator and between the tropics.
   • Large areas are found in Brazil, central west Africa and Indonesia.

2. Explain the distribution of the desert biome shown in Figure 7.1 on page 114. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   • Desert biomes are located at the tropics because these are locations of high pressure, at the descending arms of the Hadley cells.
   • The high pressure causes low rainfall, and because there are few clouds temperatures are very high.

3. Explain how local factors can alter biome distribution. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   • Altitude affects biome distribution because temperature drops with altitude by 1 °C per 200 m, so tropical rainforests found at the base of a mountain change to cloud forest and montane forest with altitude.
   • Continentality also affects distribution because the further inland a location is, the drier and more seasonal the climate, so grasslands are more likely than forests.

4. Explain two interactions between the biotic and abiotic parts of ecosystems. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   • The abiotic atmosphere interacts with plants and animals as plants take in carbon dioxide and release oxygen, whereas animals use oxygen and emit carbon dioxide.
   • Plants also take up soil nutrients, which are abiotic, through their roots; these nutrients are released back into the soil when dead plants decay.

Page 119

1. State two examples of ecosystem goods that indigenous people obtain from the biosphere. [2]
   • Food sources such as bushmeat, fish, edible roots, fruits.
   • Building materials such as timber.
   • Fuelwood.

2. Explain the role of the biosphere in regulating the composition of the atmosphere. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   • Plants sequester carbon dioxide from the atmosphere as they grow, but release it back when they die and decay.
   • Plants put oxygen back into the atmosphere as they grow, so that overall they balance levels of carbon dioxide and oxygen.

3. Explain two reasons why global demand for resources is likely to increase in the future. [4]
   One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
   • Population growth is one reason as the world population is expected to grow to 9.5 billion by 2050, meaning people will use more resources such as water.
   • People are likely to become on average more affluent, which will mean they can afford more resources such as food – which will increase demand.
Topic 8

Page 122
1. Describe two ways in which either plants or animals are adapted to conditions in the tropical rainforest. [2]

One mark for each accurate descriptive point.
- Pointed leaves in the tree canopy allow drip flow of rainfall to the ground.
- Buttress roots to support tall trees.
- Monkeys are well adapted to moving through the tree canopy.
- Reptiles are well camouflaged to evade predators.

2. Explain how nutrient cycling helps biodiversity. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Nutrients are made available to plants by uptake, and then passed along through the food web to all other organisms.
- High rates of nutrient cycling promote the growth of plants, and the animals that feed on them, increasing overall biodiversity levels.

Page 123
1. Identify two ways in which coniferous trees cope with heavy snowfall. [2]

- The conical shape of the trees is good for shedding snow.
- They have flexible branches.

2. Suggest reasons why the taiga food webs are simpler than those of the tropical rainforest. [4]

One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.
- The structure (layers) of the taiga ecosystem are fewer than the tropical forest so there are fewer types of plants and animals overall.
- There is a lower net primary productivity in the taiga, so there is slower nutrient cycling which cannot support as many species as the tropical rainforest.

Page 125
1. Assess the causes of deforestation in the tropical rainforest. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
- Deforestation is caused by a demand for resources; this can be linked to global population growth in some places such as Indonesia.
- It is also caused by poverty – people cut forests down to create farmland for themselves or to mine for minerals.
- Resource demand also comes from the developed world and especially increasing wealth in emerging countries – this increases demand for timber and foods like beef.
- Consequently, a large amount of deforestation is caused by creating pasture for the rearing of livestock and arable land for the growing of crops.
- Overall, this demand for food is the most important cause – demand for timber, HEP and biofuels is less important.

2. Explain how the clearance of tropical rainforest is leading to global warming. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- The clearance of the tropical rainforest means less absorption of carbon dioxide, because trees can no longer act as a carbon store.
- Forests are often burned, which emits carbon dioxide into the atmosphere, increasing its concentration and leading to global warming.
1. Explain why the remoteness of much of the taiga is a disadvantage. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- It is expensive and difficult to construct roads and pipelines, so it is hard to create economic development in the taiga.
- Indigenous people who live in the taiga face long journeys and the costs of goods is high due to transport costs.

2. State three ways in which global warming is threatening the taiga. [3]

- Global warming threatens hotter and drier summers; increased fire risk; more pests and diseases.

Page 129

1. Explain the difference between the CITES and REDD approaches to the conservation of tropical rainforest. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- CITES works to protect endangered species by placing them on a protected list and preventing trade in them.
- REDD aims at reducing the clearance and degradation of whole areas of forest so that they continue to help reduce carbon dioxide emissions.

2. Assess the relative merits of three different forms of sustainable forest management. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Selective logging: can provide a living, but disturbance of the rainforest is inevitable with consequent environmental damage.
- Agroforestry: the same applies, but possibly the disturbance and damage are even greater.
- But both mean that large areas of tropical rainforest can remain untouched.
- Reforestation: environmentally the best option; jobs are only created during the early phases. It is an expensive process.
- Overall, the best method might be judged on the basis of which one best preserves biodiversity; reforestation still involves the loss of the original forest whereas selective logging at least preserves some of the original forest.

Page 131

1. Explain the value of the taiga wilderness. [4]

One mark for a basic explanation, plus another mark for extending this explanation or using a located example.

- As a sanctuary for wildlife, which is remote and relatively undisturbed even today.
- As a carbon sink, because its trees and wetlands store very large amounts of carbon.

2. Assess the chances of reaching a compromise about the taiga’s future. [8]

Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.

- Perhaps as the taiga is so extensive there is space enough to meet the needs for timber, oil and gas exploitation, and still leave huge areas as wilderness.
- In the taiga’s favour are its remoteness and the fact that it is difficult to access and develop due to the harsh climate.
- On the other hand, much of the taiga is exploited for energy development such as fossil fuels and HEP: the demand for energy is only likely to grow so the threat is likely to increase as well.
- It might be argued that people are less concerned about cold, northern forests than they are about tropical rainforests, so taiga destruction goes on unchecked.
- However, the chances become even better if there is reforestation, as this could help maintain biodiversity.
Topic 9

Page 133

1. Identify four domestic uses of energy. [4]
   - Heating; cooling; cooking; lighting.

2. Assess the costs and benefits of producing energy from fossil fuels. [8]
   *Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.*
   - Costs: air pollution in cities and high levels of carbon emissions when producing energy, which cause global warming.
   - Exploitation causes environmental damage to ecosystems like the tropical rainforest and the taiga.
   - Fossil fuels are non-renewable so will eventually deplete and become increasingly expensive.
   - On the other hand, there are benefits: there are plenty of reserves which are widely distributed; gas, in particular, is an efficient source of energy.
   - Currently fossil fuels are cheap and easy to use.
   - Overall, there are short-term benefits but there are also long-term costs; the most serious of these is global climate change.

Page 135

1. Identify three elements of the UK climate that could be sources of renewable energy. [3]
   - Wind; Sun (solar power); rainfall (hydropower).

2. Study Figure 9.4. Suggest reasons for the high level of per capita energy use in Australia. [4]
   *One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.*
   - Australia is a huge country, many parts of which have a hot and dry climate. So energy is needed for long-distance travel within it, as well as for air conditioning.
   - The high standard of living inevitably increases the energy demand for such things as domestic appliances and private transport.

Page 137

1. Describe the advantages and disadvantages of relying on oil as an energy source. [4]
   *One mark for each accurate descriptive point.*
   - Advantages: it is a relatively cheap energy source; modern transport modes can make it widely available; it can provide energy for a range of activities such as transport, industry, generation of electricity and so on.
   - Disadvantages: when burned it produces carbon emissions and other forms of air pollution; oil reserves are concentrated in a small number of countries; because of this, these countries are able to control global supplies and oil prices.

2. Suggest reasons why the global production of oil varies from year to year. [4]
   *One mark for a basic suggested reason, plus another mark for extending this reason or using a located example.*
   - Because the oil producers are able to control the global price.
   - When the demand for oil is low, they will lower the price in the hope of stimulating more demand. When the demand is high, they will control production and so raise the price of oil. So the price varies with shifts in supply and demand, and the oil producers are able to respond to this.
Page 140
1. Describe the costs and benefits of developing new oil and gas fields. [3]
One mark for each accurate descriptive point.
- Costs: potential environmental damage; could be expensive because of remoteness and technological difficulty.
- Benefits: may reduce dependence on the main global producers; perhaps increases energy security.

2. Explain what is meant by the term ‘unconventional sources’ of oil and gas. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- These are relatively new ways of extracting oil and gas stocks such as tar sands and shale, rather than from wells drilled either on land or offshore.
- These ‘unconventional sources’ also require the use of different extraction techniques such as fracking.

Page 142
1. Explain the downside of using biofuels. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- They use arable land that is needed to feed a hungry world.
- In many places deforestation takes place to create land to grow biofuels, so reducing biodiversity.

2. Study Figure 9.9, which shows the UK’s energy mix. Explain why the UK might lack energy security. [4]
One mark for a basic explanation, plus another mark for extending this explanation or using a located example.
- Because about half of the UK’s energy comes from imported gas and coal, which means it relies on foreign countries.
- The North Sea is a declining source of the former. Although there are still large reserves of coal in the UK, virtually all of the coal is now imported.

Page 144
1. Choose two of the players in Figure 9.10 on page 143. Compare their attitudes to the energy situation. [3]
- National governments: main aim is to achieve the highest degree of energy security as possible. Possibly not too concerned with non-renewable or renewable. More concerned with the reliability of supply and cost.
- Pressure groups: the most active are likely to be those concerned with environmental issues. Will press governments to promote renewable sources of energy. However, likely to gloss over the fact that it will take a huge number of hydro works, solar and wind farms to compensate for not using fossil fuels. Also not too concerned about the higher financial costs.

2. Study Table 9.3, which sets out three possible options for managing energy in a sustainable way.
<table>
<thead>
<tr>
<th>Option</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use modern technology to improve the efficiency of burning fossil fuels</td>
</tr>
<tr>
<td>2</td>
<td>Develop all the renewable energy sources as quickly as possible</td>
</tr>
<tr>
<td>3</td>
<td>Change consumer energy use in homes and transport</td>
</tr>
</tbody>
</table>

Assess the relative merits of these three strategies. [8]
Remember that questions that use the command word ‘assess’ need you to explain evidence using examples and facts, and then come to a judgement about how important some geographical processes or impacts are compared to others.
- Option 1 deals with a big negative associated with fossil fuels; the new technology may be expensive.
- Option 2 is unrealistic; the world would become covered with wind and solar farms and HEP reservoirs, plus changing to this form of energy would be costly, at least in the short term.
- Option 3 would still rely heavily on fossil fuels, but changing attitudes could reduce overall use, which would be better for the environment and cheaper for consumers.
- A combination of options 1 and 3 could be quite effective: a reduced but more efficient use of fossil fuels.