



Now test yourself: Answers

Introduction

Page 8

Add geographical terms for each of the phrases in the table below. Other key terms are highlighted throughout this book. Get used to using them when answering questions.

abrasion, convenience goods, formal employment, open-cast mining, subsistence agriculture, tributary, afforestation, urbanisation, push factors.

Page 11

For each question below:

1 Underline the key words that you feel help you to understand the question.

Terms that might be underlined are very much a matter of individual choice, although most would agree the same terms. The command term is clearly important as it tells you what to do. There may also be a quantity, for example 'Give two'. Finally, understanding the geographical topic being tested is important.

2 Decide what type of question it is, based on the 'type of question' column in the table above.

See answers below.

3 Draw a brief outline of your response to the question.

a) Explain why government in the UK may wish to reduce the threat of climate change. [6]

Explain why government in the UK may wish to reduce the threat of climate change.

This is an AO2 question asking for your understanding of the potential effects of climate change on the UK. Your answer should target the social and financial costs of these effects on spending of taxpayers' money. The effects on voters' perceptions of a government's performance may also be considered.

b) Many central business districts (CBDs) have pedestrianised areas. Describe the features of pedestrianised areas. [2]

Many central business districts (CBDs) have pedestrianised areas. Describe the features of pedestrianised areas.

This is an AO1 question which, because it asks you to *describe*, needs you to go a little further than simply listing two features. It also asks for *features* (plural). 'Areas where cars are not permitted so making it safer for people walking from shop to shop' would be worth 1 mark.' How would you get a second mark?

c) Evaluate the use of the internet as a source of secondary data to support fieldwork. You should support your answer by referring to actual examples from your own fieldwork. [6]

Evaluate the use of the internet as a source of secondary data to support fieldwork. You should support your answer by referring to actual examples from your own fieldwork.

A question like this could appear on your Unit 3 paper. It is an AO3 (2) question where you would be expected to use the evidence of your own research to analyse the use of the internet as a source of data. It would be marked using a levels of response mark scheme. To reach the highest level you would need to consider its strengths and weaknesses in detail. Follow with a statement concerning its overall value to your enquiry.

d) Name an ecosystem you have studied. For your chosen ecosystem, complete the table below to give the names of specific plants or animals found in your chosen ecosystem. [3]

Name an ecosystem you have studied. For your chosen ecosystem, complete the table below to give the names of specific plants or animals found in your chosen ecosystem.

Another AO1 question, but the responses you give are simply one word long.



1 Urban and rural processes and change in the UK

Page 15

Figure 1 is a proportional circle map. Complete the table below to suggest two advantages and two disadvantages of showing information in this way.

Advantage:

- Shows actual locations of the information.

Disadvantages:

- Difficult to work out actual values.
- May hide map information.

Page 18

Suggest how each of the four reasons shown in italics in the text will place pressure on existing housing in England.

Living longer and an increase in immigration increase the overall population, while marrying later and an increase in single-parent families cause an overall rise in demand for small properties.

Page 21

1 Suggest which, the map or the graph, is the more useful resource for predicting longer-term changes.

Explain your choice.

Neither resource is perfect, but in terms of prediction, the graph, showing a longer-term change, is likely to be more useful than the map. The longer the time period, the more useful the resource because shorter-term variations are smoothed out.

2 How might increased teleworking result in more sustainable urban areas?

Sustainability of urban areas will be increased because less commuting will reduce air pollution and cut down road congestion in urban areas.

Page 26

1 Add an example of each shopping centre to the table above.

	Advantages	Disadvantages
CBD	Easy access by public transport	Expensive parking, difficult access for the elderly, expensive rents, congestion
District shopping centre	A focal point for the local community	Dominated by charity shops, cramped locations
Malls	All indoors, a range of shops together	Congested
Retail parks	Space to develop, free parking	Difficult access for the elderly
Corner shops	Free parking, easy access for the elderly	Cheap rents

Many of the observations above are based on one person's experience of each type of shopping centre. Your views may differ.

2 Complete the advantages and disadvantages columns for each shopping centre. Use those in the list below and add some more from your own studies. You could use the same feature more than once: space to



develop, congested, free parking, expensive parking, difficult access for elderly, dominated by charity shops, cramped location, all indoors, rents expensive.

How might you take each of these advantages and disadvantages and elaborate on why they may be considered advantages and disadvantages? For example, 'Malls allow customers to access a range of shops directly from their cars without walking far, thus saving time. They are indoors, so allowing movement from shop to shop without getting wet on rainy days.'

Page 27

You are asked to show on one graph the UK data in the table above compared to that of two other countries.

There isn't one correct choice for any of these questions.

1 Which other two countries would you choose? Why?

As you are asked to show two other countries, that rules out the EU, being a large group of countries. Of the other options, it may be useful to compare with Germany, a similar country to the UK in the EU, and the USA, a HIC in another part of the world.

2 What information would you show? Explain your choice(s).

Showing figures for each of the four years will let you see year-on-year changes, while the use of percentages will compare the overall trends.

3 What graph type would you use? Why?

For (1) above, the best choice would be to draw a single line graph showing the information for all three countries. For the second option, the percentages, it would be appropriate to show three line graphs on a common axis.

3 A global perspective on development issues

Page 38

1 Link each feature in the table with its correct 'Why is globalization good?' explanation.

A4, B1, C5, D2, E3.

2 Add another feature and its explanation.

Your feature could be either an impact on the LIC/NIC or on the HIC, for example:

- LIC/NIC: MNCs could take advantage of weak labour laws, so employing workers in dangerous conditions.
- HIC: cheap LIC/NIC manufactured products could put HIC manufacturing concerns out of business, so increasing unemployment.

3 For each speech bubble, add an explanation as to why it may be a bad effect of globalisation.

Clockwise from top left:

- so taking money out of the NIC/LIC country, slowing its development
- so undercutting wages in HICs where the workers' costs of living are higher
- so putting them out of business
- so making them more scarce for future generations
- so putting pressure on traditional culture
- so endangering local people and local and global environments.

Page 41

Describe the pattern of unemployment in Europe shown by the map.

Most of central and northern Europe has between 6 per cent and 10 per cent unemployment. There is a band of 0–5 per cent unemployment in the extreme north-west of the continent. Other countries with such low



unemployment are scattered through central and eastern parts of the continent. High unemployment tends to be in the south, mainly in the Mediterranean area.

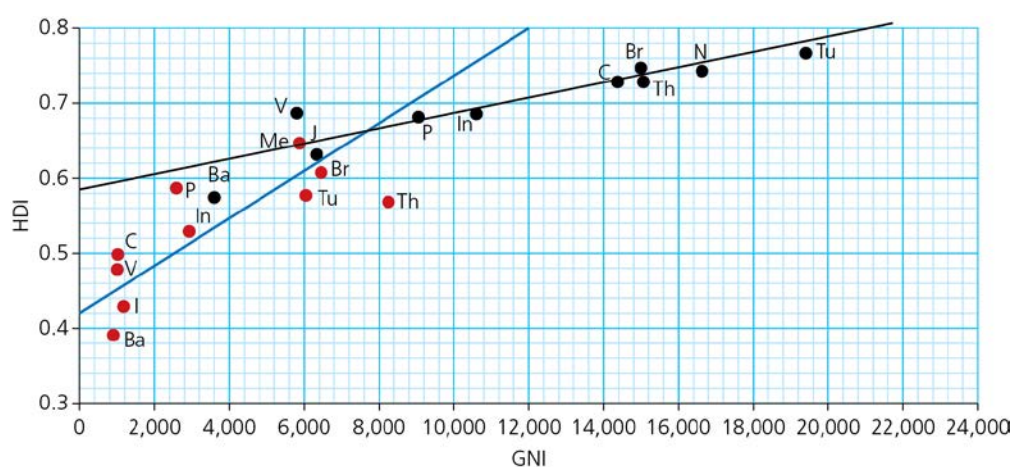
Page 45

Look at Figure 15.

1 To what extent does the HDI improve as the GNI increases?

The 1990 line of best fit shows a positive correlation between countries' GNI and their HDI. All four countries with the lowest GNI also have the lowest HDI. There is, though, a clear contrast between the HDI of Bangladesh and that of China, although they have similar GNIs. Similarly, with much higher GNIs there is a distinct, though not so wide, contrast in HDI.

2 Complete the scattergraph for 2015 using information from Figure 14.



The sequence for each country is as follows:

- Use the second column of figures to locate the country on the bottom axis and follow an imaginary line upwards from that point.
- Use the fourth column of figures to locate the country on the side axis and follow an imaginary line to the right from that point.
- Where the two lines intersect, place a dot. Use a different colour to the red dots in place for 1990.
- Label the dot with the key letter(s) for the country.

When all countries are completed, draw a line of best fit. It should be a straight line that best enables individual countries to be as close to the line as possible, either above or below it.

3 'Increases in GNI have had an equal effect on all of the NICs.' To what extent does graph evidence support this statement?

The 2015 line of best fit is less steep but still shows a positive correlation. The HDI increases as incomes rise, to a greater extent for those that remain low-income countries. So graph evidence does not support the statement.

Page 47

1 Label Figure 16 to show years of high and low income for cocoa farmers.

Much would depend upon why there is a surplus or a deficit.

- If the deficit were the result of an increase in demand for cocoa in HICs, the farmers should be able to sell all of their crop at a relatively high price.
- In those years when demand is lower and there is a surplus, the price paid to the farmer will be lower.
- If the demand for cocoa hasn't changed but the supply has fallen, it is likely that some cocoa-producing areas will have had a poor harvest. For these there will be very low income, with little to sell, and that is why the farmers in areas with a good harvest will receive a higher income.



- Finally, if there is a bumper harvest in all cocoa-growing areas, there is likely to be more than enough to meet demand, so the price will fall.

2 Suggest how the pattern is likely to affect quality of life for cocoa farmers.

The uncertainty of conditions affecting both supply and demand means that farmers will never be able to predict their income. Thus planning ahead will be difficult, as will borrowing money for improvements – there will be no guarantee of being able to repay such loans. Farmers are likely to be concerned about feeding their family and ensuring an education for their children.

1 Coasts and coastal management

Page 53

1 a) Suggest an order of hardness for the three rocks shown on the map.

Softest to hardest; clay > limestone > chalk.

b) Explain your chosen order.

The clay is the fastest to erode, creating bays at both Studland and Swanage. The limestone of Durlston Head stands out as a headland, but the chalk appears to have created a more pronounced promontory at Ballard Point.

2 How might geology have influenced the choice of Poole as a harbour?

This actually isn't a question you can wholly answer by looking at the evidence on page 53. Poole Harbour is actually the estuary of a river valley; the main river and tributaries flowed through the clay towards the sea. This part of southern England, though, is a sinking coastline and the lower courses of the main river and tributaries have been drowned to produce the harbour.

Page 54

1 Label Figure 5 to show three vertical lines of weakness in the photo.

The three most obvious lines of weakness are (from left to right):

- running vertically through the cave
- the arch
- the space between the arch and the stack.

2 Annotate Figure 5 to explain the sequence of erosion on this cliff.

- Cave: the combined attack on a line of weakness of hydraulic action, attrition and corrosion erodes the limestone at a line of weakness.
- Two caves eroding on either side of a headland join to create an arch. The arch increases in size due to the combined effects of continued erosion, weathering and gravity.
- The roof of the arch collapses due to gravity. The stack formed continues to erode and will slowly reduce in size to become a stump.

3 Describe how geology and coastal processes have contributed to the features shown in Figure 6.

The loose, unconsolidated till (boulder clay) is poorly resistant to erosion, unlike more consolidated sedimentary rocks such as limestone and chalk and igneous rocks like granite. Wave action, using the processes described in the first bullet above, quickly removes material at sea level. Rainwater soaks into the top of the cliff and increases its weight, making it unstable. As it slumps, the water it holds acts as a lubricant, helping it to flow down curved planes in a process called rotational slumping.

Page 58

1 Write a definition of 'groyne'.

A groyne is a built structure extending at right angles to the coast. It is usually constructed of wood, concrete or boulders.



2 Label Figure 9 to show the direction of longshore drift.

The direction of longshore drift is from north to south.

3 Annotate Figure 9 to show how hard and soft engineering is being used to protect this stretch of coast.

It is possible to annotate the map in three places to help explain how the coast is being protected:

- Stabilised cliff by reducing its gradient – this reduces the effects of gravity. Grass cover also stabilises the cliff and protects it from gully effects of rain (soft).
- Revetments blocking the cliff from direct wave attack – wave energy is greatly reduced as the water hits the rock barrier (hard).
- Groynes stop sand migrating along the beach in the direction of longshore drift. This raises the beach level, which reduces the frequency of waves high enough to attack the cliff (hard).

2 Rivers and river management

Page 62

Look at Figure 3 on page 61. Explain why each of the following may affect an urban discharge pattern: paved gardens, interception of water by buildings, street drainage.

- Paved gardens reduce the amount of infiltration and increase surface runoff.
- Both the interception of water by buildings and the creation of street drains result in water being channelled directly to rivers. This bypasses most of the flows and stores shown in Figure 2, resulting in rapid runoff.

Page 65

Draw a sketch map to show where an ox-bow lake may form. Annotate your map to describe how processes of erosion and deposition may lead to its formation.

One obvious place for the river banks to be cut through to produce an ox-bow lake would be just south of Newbus Grange. Your series of diagrams should show deposition on the inside of each bend and erosion on the outside, with the outside banks becoming progressively closer. Eventually, the cut-off will be complete, with the river flowing along the steeper gradient route and leaving its old course isolated as an ox-bow lake. You could provide a similar explanation for the area of Rockcliffe Scar and that of the Manor House.

Page 68

Describe the effects of each of the methods shown in the diagram using the following terms: infiltration, evapotranspiration, surface runoff, soil erosion, interception, river channel.

Method	Effect
Floodplain water storage to reduce flow	Increased evapotranspiration, increased infiltration, more even surface runoff
Fence to keep livestock from river bank	Decreased soil erosion, less sediment in river channel, increased surface runoff
Blocking upland drainage	Increased infiltration and evapotranspiration, reduced surface runoff in tributary and main river
New wetlands in the upper catchment	Increased infiltration, increased evapotranspiration
Reduce amounts of bare soil	Slower and reduced infiltration, increased evapotranspiration, reduced and more even surface runoff
Increase woodland on the floodplain	Increased interception and evapotranspiration, reduced soil erosion, less sediment in river channel, increased surface runoff



3 Weather and climate

Page 75

Use information from the climate graph to describe the distributions of temperature and precipitation for the hot semi-arid climate.

- Temperature distribution: hot throughout the year with a high of $41\frac{1}{2}^{\circ}\text{C}$ in May and a low of $29\frac{1}{2}^{\circ}\text{C}$ in January, giving a temperature range of $12\frac{1}{2}^{\circ}\text{C}$. It fluctuates with two high and two low seasons.
- Precipitation distribution: has a distinct dry and rainy season, with no rain at all from November to February. Of an annual total of 410 mm, 300 mm falls in the months of July and August. All precipitation is in the form of rain.

Page 76

Draw a sketch cross-section through an occluded front.

Look at the cross-section in Figure 4. Your sketch section should be similar to this, but with the whole of Stage 3 taken out. The bottom of the front edge of the cold front will rest on the incline of the top of the warm front, above ground level. A person on the ground as an occluded front passes over will experience a movement from one cold air mass to the other without feeling any of the warm air that is usually between them at ground level.

Page 77

Add the following information to Figure 4:

Your labels should be as follows:

a) labels: depression, anticyclone, rising air, falling air

'anticyclone' and 'falling air' at either centre of high pressure; 'depression' and 'rising air' at either centre of low pressure.

b) arrows to show the wind circulation.

The wind should be shown spiralling clockwise outwards from the centre of an anticyclone and inwards anticlockwise towards the centre of a depression.

Page 79

Figure 7 shows the processes that lead to very high rainfall in South Asia. Describe the sequence of events that will lead to very dry conditions over the same area in January.

The land is weakly heated by solar energy > air cools and sinks, creating an area of high pressure > air is stable so no rain falls > air passes over the Indian Ocean, warms and rises.

These captions could be added to a diagram similar to Figure 7 in which the arrow directions have been reversed.

4 Climate change – cause and effect

Page 80

Label the graph with a 'G' where you think there has been a glacial period and an 'I' for each inter-glacial period.

Each of the broad dips in temperature is a glacial period and each narrow spike is a short warm, interglacial period.

1 How ecosystems function

Page 92

1 Draw a reed bed food chain involving the three species shown in Figure 6.

Food chain: sedges > leopard moth > rove beetle.



2 List the species found in the wet woodland ecosystem under the following headings:

- producer
- primary consumer
- secondary consumer
- tertiary consumer
- quaternary consumer.
 - Producers: alder, birch, willow.
 - Primary consumers: crane fly, soldier fly, netted carpet moth.
 - Secondary consumers: frogs, toads, small birds.
 - Tertiary consumers: ducks, geese, foxes.
 - Quaternary consumers: hawks, owls, foxes, weasels.

Note that it is possible for some consumers to appear in more than one group.

2 Ecosystems under threat

Page 95

1 Describe the distribution of areas at greatest risk of biodiversity loss.

Those areas at greatest risk are the Midwest of North America, the south-east of South America, a band stretching across central Asia from east to west, southern Africa and all but the south-eastern coast of Australia.

2 Suggest reasons for the distribution you have described.

In many of the areas described above, the main reason would be the result of human activities – for example, the use of the natural temperate grasslands of North and South America for arable and pastoral farming. This was accompanied by over-hunting of original species such as the bison. The original ecosystems have been removed. Similar situations are found in central Asia.

The role of climate change is difficult to assess, but those areas on the edges of deserts like the Sahara and Kalahari are suffering desertification, greatly reducing their biodiversity.

3 Why is it difficult to give the reasons for the loss of biodiversity?

On a global map it is difficult to identify small areas with a loss of biodiversity resulting from, for example, over-hunting. It is also possible that where there is a main reason for the loss of biodiversity, there are also other reasons that contribute to it but with less impact than the main one.

3 Water resources and management

Page 100

1 Rank the water footprints from highest to lowest.

1 kg chocolate > 1 kg beef > T shirt and pair of jeans > 1 kg chicken > 1 kg rice > a dozen bananas > 1 kg loaf of bread > pizza > 1 litre milk > 1 kg butter

2 Why is this rank order of little use in working out a person's weekly embedded water usage?

There are a number of reasons:

- The list is incomplete, with too few items.
- It includes a mix of everyday, convenience goods and comparison goods bought infrequently.
- It uses mixed quantities, such as kilograms and litres, and some items that are of unknown size, e.g. pizza.

Page 102

Suggest reasons for the differences in predicted changes in water consumption shown in Figure 6.

There are three main reasons for these differences:



- Some areas, such as Europe and North America, have relatively stable population numbers and have reached, and passed, peak levels of secondary industrialisation. Consumerism is the main reason for the low rises shown.
- Asia continues to have an overall increasing population. It also includes most of the world's secondary industry growth and as these become richer, increased consumer demand.
- Africa and South America have slowly rising populations but without a great deal of secondary industry growth.

Page 104

1 Describe the distribution of precipitation in Denmark.

There is a clear reduction in precipitation from west to east across the country. The western half of the mainland has more than 500 mm a year. Almost the whole of the eastern half of the mainland has between 250 mm and 400 mm, while in the islands further east it drops to between 150 mm and 250 mm.

2 To what extent is this pattern reflected in the balance between 'sustainable water resources' and their extraction?

There is some relationship between total annual precipitation and the other variables. As precipitation reduces, so does the amount of water available as a sustainable resource. Abstraction also mainly reduces progressively further east, although there is an anomaly in that the furthest area eastwards has the second highest abstraction rates.

3 Add a 'so' statement to each of the 'responses' above to help explain how Denmark is attempting to solve its water supply problems.

Response	Explanation (so)
Detailed mapping and monitoring of the groundwater supplies	Developing greater knowledge of patterns of water availability so better able to judge how much may be abstracted
Restoration of contaminated waters	Ensuring that there is more usable water available for abstraction
Increased afforestation to protect catchment areas	Increasing interception allowing more effective infiltration to increase groundwater supplies
Regulation of the use of pesticides and fertilisers	Reducing the amount of polluted water that infiltrates the ground
Reduction of leaks in water supply pipes	Reducing the amount of water lost in transit and increasing the proportion that is delivered to the user
Increased taxes on water usage	Reducing the amount of water used by both domestic and commercial consumers, effectively reducing abstraction

Page 106

Draw lines in the table to connect each predicted change with its most likely effect on water balance.

A2; B4, C3; D1.

Page 108

1 Place an L or G in the right-hand column of the table above to show whether each might be a locally or an internationally caused issue.

From top to bottom: L or G > L or G > L or G > L > L or G > L or G > L or G

Yes, there is only one 'local' single country issue – all of the others may be 'single country' or 'international' depending on where the cause was located. If the issue is close to the source of the river, the effects could be



felt in a number of countries between the location of the cause and the mouth of the river. However, if the cause is in the country nearest the mouth, only that country will be affected.

2 Why might it be difficult to get international agreement about how a river is used?

There are many reasons why international agreement is difficult to obtain. Dam construction and industrial development may be considered essential to the development of that country and issues caused further downstream considered unfortunate but unavoidable. It is also possible that countries through which the river flows may not be on the best of terms politically. In these situations, the issues created may be considered an additional advantage of the development.

4 Desertification

Page 110

Most of the world's hot deserts develop in areas that are dominated by high-pressure systems. Look back at pages 77 and 78.

1 Why are many of the world's hot desert areas located either side of the two tropics?

These are areas of sinking air. As the air descends, it warms and increases its capacity to hold water in its gas form as vapour. This makes it very stable, with little chance of rain.

2 Why does the Sahel have wet and dry seasons?

The Sahel experiences different seasons because of the effect of the tilt of the Earth's axis. This causes the sun to be directly overhead at the Tropic of Cancer in our summer and at the Tropic of Capricorn in our winter. The Sahel experiences a period of low pressure during the summer when the sun is higher in the sky, heating the air, which rises. Some rain falls. In the winter, temperatures are lower, air sinks, becomes stable and rain is unlikely.

Page 114

1 a) Work out the extent of the Great Green Wall.

It is thought that the Great Green Wall extends for 7775 km. So, your measurement should be somewhere between 7500 km and 8000 km.

b) How might you change the map to make this calculation easier?

It is difficult to measure the distance on Figure 5 because tree symbols are used. These are difficult to follow when measuring. They also go beyond the coast at each end of the 'Wall'.

2 Link each of the features in the table with its correct benefit.

The features and benefits link as follows: A4; B7; C1, D6; E3, F2; G5.

Page 115

1 Look at the Figure 6, which shows the use of bunds in a semi-arid area. Write a paragraph to help explain how their use might help to prevent desertification.

Slowed runoff, by allowing more time for infiltration, permits more water to return to the groundwater reservoir, enabling wells to be replenished. It also keeps the soil moist, encouraging crop growth. Material carried in the water is also trapped by the bunds. Thus less valuable topsoil is lost and organic material, that would otherwise wash away, is saved to be used as fertiliser.

2 Label Figure 7 to show how drip irrigation operates.

3 Annotate Figure 7 to help explain the advantages it will bring to farmers who use it and to the fight against desertification.



Label	Annotation
Irrigation water in tank	so prevents/reduces evaporation
Tank raised above ground level	so water is fed to plants by gravity
Irrigation tubes with equally spaced holes	so delivers small amounts of water where and when needed and reduces wasteful water loss
Plants in rows	so enables weeding to reduce the growth of unusable water-consuming plants; weeds
Moist soil	so reduces soil erosion by wind
Plant cover	so reduces soil erosion by wind and rain