# AQA A-LEVEL GEOGRAPHY

PACK

OUESTON PRACTICE



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## **EXAM-STYLE QUESTIONS**

## Paper 1 Physical geography



Figure 1 The drainage basin hydrological cycle



**Figure 2** The carbon cycle. Reservoirs are shown in italic, other labels represent processes. Numbers represent transfer/flux in gigatonnes of carbon per year



Figure 3 The dry River Glen in Lincolnshire

## Section A Water and carbon cycles

## Set 1

## **Question 1 Flow**

Explain the concept of 'flow' as it applies to a drainage basin.

(4 marks)

#### (Mark scheme and example answers on page 79)

## **Question 2 Groundwater**

Using **Figure 1** (see page 6) and your own knowledge, outline how climate change might affect the levels of groundwater in the UK. (6 marks)

#### (Mark scheme and example answers on page 80)

## Student B

There are a number of different ways that water can flow through a drainage basin: throughflow, overland flow and stem flow. Overland flow is where the water flows on the surface of the land, stem flow is when it runs down a tree and base flow is when it flows through rocks very slowly.

The student has not identified all flows and having named three has written about a different three. There is only superficial detail given on the flows.
 3 marks

## **Question 2 mark scheme**

6 marks (AO1 = 2 marks, AO2 = 4 marks). Use the levels of response mark scheme as follows.

## Level 2 (4–6 marks)

- AO1 Demonstrates clear knowledge and understanding of concepts, processes, interactions and change.
- ▶ AO2 Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident, with clear relevance.

### Level 1 (1–3 marks)

- AO1 Demonstrates basic knowledge and understanding of concepts, processes, interactions and change.
- ► AO2 Applies limited knowledge and understanding to the novel situation, offering basic analysis and evaluation drawn from the context provided. Connections and relationships between different aspects of study are basic, with limited relevance.

#### Notes for answers

#### A01

- > Potential changes to the climate may include: wetter winters; hotter, drier summers; increased frequency of storms.
- > Uses made of groundwater include domestic, industrial and agricultural.

#### A02

- > Links made between changes in climate and changes to the levels of groundwater.
- > Issues of recharge and problems as climate changes.
- > Intrusion of sea water into aquifers near the coast or tidal estuaries.
- > Loss of springs as groundwater levels sink.
- Regional differences, e.g. the southeast of the UK may be affected more severely due to much lower levels of precipitation and yet greater usage from growing population.
- > Use of examples and precise use of technical language.

### Hints and tips

This question requires you to use precise technical language and to give examples to illustrate your points. You must show that you have used Figure 1 in some way.

## **Question 2 example responses**

## Student A

Climate change in Britain is likely to bring more extreme weather conditions, with winters becoming wetter and stormier and summers becoming hotter and drier. This may be particularly true in the southeast, which is the area of the UK where groundwater is most important for water supply. Wetter winters might lead to an increase in groundwater, but water from storms tends to run to rivers so the increase might not be as great as expected. If, as predicted, the spring and autumn become drier and warmer, the period when groundwater levels in the aquifers might be recharged will be shorter so, overall, less water will be replaced.

During hot summers the main impact on groundwater will be the increase in demand and therefore higher extraction rates, especially if river flow is reduced, as was the case in Dorset in 2012. Higher rates of potential evapotranspiration may lead to farmers having to use irrigation methods such as on the coastal plain in West Sussex and in parts of East Anglia. Pumping water from deeper supplies in this way would threaten domestic sources. All of this may lead to a long-term decline in groundwater storage.

Another effect of climate change is likely to be rising sea levels. These may lead to the loss of groundwater resources in very low-lying coastal areas, as sea water can flow into the aquifers and contaminate the fresh water supply.

A general lowering of groundwater levels may well have an impact on vulnerable wetland ecosystems, which are important within the environment, and also lead to lower surface water levels of lakes and ponds that are used for recreation and tourism.

C The student uses good technical language and clearly understands the implications of climate change in the UK. The answer is long for 6 marks.
Level 2

## Student B

Groundwater supplies are very important for the water supply in the UK. Climate change is likely to bring hotter summers and wetter winters. If enough rain falls in the winter to supply the increased need in the summer there will not be a problem, but if we use more water in the summer than falls in the winter the reverse is true. Farmers, in particular, may find that their fields are flooded in the winter and parched in the summer. As the climate changes, the time available for recharge will get shorter and this will lead to a decline in groundwater resources. Coastal areas may also suffer as sea water comes in and fills the space taken by the groundwater that has been pumped out. Salt water cannot be used until it has been treated and it would mix with the fresh water, causing it to be unusable.

C The student has a less formal way of writing, and although the answer starts well it loses its way by referring to material that is outside the scope of this question. Some technical language is used, but overall there is a lack of detail.
Level 1