GEOGRAPHY RESOURCES

GCSE GEOGRAPHY

# Contents

Pearson Edexcel

# GCSE (9-1) Geography A

## Specification

**Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Geography A (1GA0)**

*First teaching from September 2016*

*First certification from 2018*

Issue 3

## Summary of Pearson Edexcel GCSE in Geography specification Issue 3 changes

| Summary of changes made between previous issue and this current issue | Page number |
|---|---|
| **Component 1:** We have made some amendments to add clarity around the number of case studies and to make the wording consistent | 8, 10 and 13 |
| **Component 1:** The words 'freeze thaw' have been removed from 1.11a, which means a minor change to the content delivery | 11 |
| **Component 3:** We have made some minor changes to titles on these pages to make them consistent throughout the specification and removed the words 'Richter scale' from the numerical skills bullet points. | 27, 28, 29, 31 and 33 |

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

# Contents

# 1 Introduction

## Why choose Edexcel GCSE Geography A?

We've listened to feedback from all parts of the geography subject community, including hundreds of fellow teachers. We've used this opportunity of curriculum change to redesign a qualification that is engaging and relevant to today's geographers – a qualification that enables your students to explore the world, the challenges it faces and their own place in it, and to help prepare them to succeed in their chosen pathway.

**Clear and coherent structure** – our qualification has a straightforward structure with three components – The Physical Environment, The Human Environment and Geographical Investigations: Fieldwork and UK Challenges.

**Straightforward assessments that are accessible for all abilities** – there are three externally examined papers that provide gradual progression in demand throughout the topics. Across all three assessments there is consistent use of 13 different command words so that students know what to expect.

**Engaging and manageable fieldwork** – fieldwork environments are aligned with the core content of the course so that the experience of fieldwork can reinforce and enlighten learning in the classroom and learning in the classroom can underpin learning in the field. Fieldwork tasks will remain for the lifetime of the specification so there is less time spent on planning and administration and more time to bring geography to life in the field.

**Provides an engaging real-world focus** – students are encouraged to apply their knowledge and understanding to real-life 21st century UK challenges.

**Continuous progression** – the new specification content introduces students to physical or human geography first and then people-environment processes and interactions in the context of place at a range of scales. Building on this, via geographical investigation, students draw on their wider knowledge and understanding of UK geography to explore geographical issues.

**Develops a holistic understanding of geography** – content is written to show geographical overview and geographical depth. Geographical skills are integrated throughout *all* parts of the course so that students use them in context.

**Supports progression to A Level** – the compulsory and optional topic content provides the opportunity to lay foundations of knowledge and understanding that can be further developed at A Level.

 

# Supporting you in planning and implementing this qualification

## Planning

- Our **Getting Started** guide gives you an overview of the new GCSE qualifications to help you to get to grips with the changes to content and assessment and to help you understand what these changes mean for you and your students.
- We will give you an editable **course planner** and **scheme of work** that you can adapt to suit your department.
- **Our mapping documents** highlight key differences between the new and 2012 qualifications.

## Teaching and learning

There will be lots of free teaching and learning support to help you deliver the new qualifications, including:

- **topic packs** for *every* topic, including teaching and learning ideas on new and more challenging topics and skills and geographical literacy
- support for embedding geographical skills and fieldwork in teaching.

## Preparing for exams

We will also provide a range of resources to help you prepare your students for the assessments, including:

- **additional assessment materials** to support formative assessments and mock exams
- marked **exemplars of student work** with examiner commentaries.

## ResultsPlus

ResultsPlus provides the most detailed analysis available of your students' exam performance. It can help you identify the topics and skills where further learning would benefit your students.

## Get help and support

Our subject advisor service, led by Jon Wolton, and online communities will ensure you receive help and guidance from us and that you can share ideas and information with other teachers. You can sign up to receive e-newsletters from Jon to keep up to date with qualifications and product and service news.

Learn more at qualifications.pearson.com

# Qualification at a glance

## Content and assessment overview

The Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Geography A consists of three externally-examined papers.

Students must complete all assessments in May/June in any single year.

| **Component 1: The Physical Environment (*Paper 1 code: 1GA0/01)** |
|---|
| ***Written examination: 1 hour and 30 minutes***<br>***37.5% of the qualification***<br>***94 marks*** |
| **Content overview**<br>• Topic 1: The changing landscapes of the UK – including optional sub-topics from which students choose **two** from three, 1A: Coastal landscapes and processes, 1B: River landscapes and processes and 1C: Glaciated upland landscapes and processes.<br>• Topic 2: Weather hazards and climate change<br>• Topic 3: Ecosystems, biodiversity and management |
| **Assessment overview**<br>An externally-assessed written exam with three 30-mark sections. Of the 94 raw marks available, up to 4 marks are awarded for spelling, punctuation, grammar and use of specialist terminology[1].<br>**Section A: The changing landscapes of the UK**<br>**Section B: Weather hazards and climate change**<br>**Section C: Ecosystems, biodiversity and management**<br>In Section A, students answer Question 1 and choose **two** from optional questions (Question 2 Coastal landscapes and processes, Question 3 River landscapes and processes, Question 4 Glaciated upland landscapes and processes). Students answer all questions from Sections B and C.<br>The exam includes multiple-choice questions, short open, open response, calculations and 8-mark extended writing questions. |

| **Component 2: The Human Environment (*Paper 2 code: 1GA0/02)** |
|---|
| ***Written examination: 1 hour and 30 minutes***<br>***37.5% of the qualification***<br>***94 marks*** |
| **Content overview**<br>• Topic 4: Changing cities<br>• Topic 5: Global development<br>• Topic 6: Resource management – including optional sub-topics from which students choose **one** from two, 6A: Energy resource management and 6B: Water resource management |

[1] The exam boards and Ofqual are working together to determine the marking expectations for spelling, punctuation, grammar and use of specialist terminology which will apply to all GCSE specifications in History, Geography and Religious Studies. The agreed wording will be included in the mark schemes for accredited sample assessment materials.

**Assessment overview**

An externally-assessed written exam with three 30-mark sections. Of the 94 raw marks available, up to 4 marks are awarded for spelling, punctuation, grammar and use of specialist terminology.[1]

**Section A: Changing cities**

**Section B: Global development**

**Section C: Resource management**

Students answer all questions from Sections A and B. In Section C, students answer **one** from two optional questions (Energy resource management or Water resource management).

The exam includes multiple-choice questions, short open, open response, calculations and 8-mark extended writing questions.

| **Component 3: Geographical Investigations: Fieldwork and UK Challenges (*Paper 3 code: 1GA0/03)** |
|---|
| ***Written examination: 1 hour and 30 minutes*** <br> ***25% of the qualification*** <br> ***64 marks*** |
| **Content overview** <br> • Topic 7: Geographical investigations – fieldwork <br> • Topic 8: Geographical investigations – UK challenges |
| **Assessment overview** <br> An externally-assessed written exam with three sections. Of the 64 raw marks available, up to 4 marks are awarded for spelling, punctuation, grammar and use of specialist terminology. <br> **Section A: Geographical investigations – physical environments** <br> Students choose **one** from two optional questions (Rivers **or** Coasts). <br> **Section B: Geographical investigations – human environments** <br> Students choose **one** from two optional questions (Central/Inner Urban Area **or** Rural Settlements). <br> **Section C: UK challenges** <br> • The exam includes multiple-choice questions, short open, open response, calculations, 8-mark and 12-mark extended writing questions. |

*See *Appendix 6: Codes* for a description of this code and all other codes relevant to this qualification.

[1] The exam boards and Ofqual are working together to determine the marking expectations for spelling, punctuation, grammar and use of specialist terminology which will apply to all GCSE specifications in History, Geography and Religious Studies. The agreed wording will be included in the mark schemes for accredited sample assessment materials.

# 2 Subject content and assessment information

The subject content sets out the knowledge, understanding and skills relevant to this qualification. Together with the assessment information it provides the framework within which centres create their programmes of study, so ensuring progression from Key Stage 3 national curriculum requirements and the possibilities for development into A Level.

## Qualification aims and objectives

GCSE specifications for the discipline of geography give students the opportunity to understand more about the world, the challenges it faces and their place within it. This GCSE course will deepen understanding of geographical processes, illuminate the impact of change and of complex people-environment interactions, highlight the dynamic links and interrelationships between places and environments at different scales, and develop students' competence in using a wide range of geographical investigative skills and approaches. Geography enables young people to become globally and environmentally informed and thoughtful, enquiring citizens.

The aims and objectives of this qualification are to enable students to build on their Key Stage 3 knowledge and skills to:

- develop and extend their knowledge of locations, places, environments and processes, and of different scales, including global; and of social, political and cultural contexts (know geographical material)
- gain understanding of the interactions between people and environments, change in places and processes over space and time, and the interrelationship between geographical phenomena at different scales and in different contexts (think like a geographer)
- develop and extend their competence in a range of skills including those used in fieldwork, in using maps and Geographical Information Systems (GIS) and in researching secondary evidence, including digital sources; and develop their competence in applying sound enquiry and investigative approaches to questions and hypotheses (study like a geographer)
- apply geographical knowledge, understanding, skills and approaches appropriately and creatively to real world contexts, including fieldwork, and to contemporary situations and issues; and develop well-evidenced arguments drawing on their geographical knowledge and understanding (applying geography).

## Geographical Skills

Students are required to develop a range of geographical skills, including mathematics and statistics skills, throughout their course of study. These skills may be assessed across any of the examined papers. The full list of geographical skills is provided on page 32. Some geographical skills are specific to particular topic content, these are numbered within the content and indicated in the 'integrated skills' sections within the topics throughout the content pages.

## Subject content structure

The subject content has been written so that each topic in Component 1 and 2 is introduced by way of a geographical overview before progressing into geographical depth. Geographical overview content aims to develop students' broad, holistic understanding of the topic theme at a larger scale. Geographical depth content aims to develop students' detailed knowledge and understanding of processes and interactions in a particular smaller scale place or context.

## Case Studies and located examples

All students must study three in-depth case studies:

- In Topic 4 Changing cities, a case study of a major UK city
- In Topic 4 Changing cities, a case study of a major city in a developing country or an emerging country
- In Topic 5 Global development, a case study of development in a developing country or an emerging country.

In addition to the three in-depth case studies, throughout the course it is a requirement to draw on located examples from developing, emerging and developed countries. Any located examples must be set within the broader contextual knowledge of the country. In order to make it clear where a located example should be developed, a  symbol has been used.

Programmes of study could identify located examples within the countries selected for the three in-depth case studies.

# Component 1: The Physical Environment

## Overview

This component brings together physical geography and people-environment processes and interactions. The component is divided into three sections:

- Topic 1: The changing landscapes of the UK – an overview of the distribution and characteristics of the UK's changing landscapes and detailed studies of **two** from three landscapes, 1A: Coastal landscapes and processes, 1B: River landscapes and processes or 1C: Glaciated upland landscapes and processes
- Topic 2: Weather hazards and climate change – an overview of the global circulation of atmosphere and climate change over time and a detailed study of tropical cyclones and a drought
- Topic 3: Ecosystems, biodiversity and management – an overview of the distribution and characteristics of global and UK ecosystems and a detailed study of tropical rainforests and deciduous woodlands.

## Content

### Topic 1: The changing landscapes of the UK

| **Overview of the UK's physical landscape** | |
|---|---|
| **Key idea** | **Detailed content** |
| **1.1** There are geological variations within the UK | a. Characteristics and distribution of the UK's main rock types: sedimentary (chalk, sandstone) igneous (basalt, granite), metamorphic (schists, slates). (1) |
| | b. The role of geology and past tectonic processes in the development of upland (igneous and metamorphic rocks) and lowland (sedimentary rocks) landscapes. (2) |
| **1.2** A number of physical and human processes work together to create distinct UK landscapes | a. How distinctive upland and lowland landscapes result from the interaction of physical processes (glacial erosion and deposition, weathering and climatological, post-glacial river and slope processes). (3) |
| | b. How distinctive landscapes result from human activity (agriculture, forestry, settlement) over time. (4) |
| **Integrated skills:**<br>(1) Geological maps<br>(2) Using simple geological cross sections to show the relationship between geology and relief<br>(3) Locating key physical features (uplands, lowland basins, rivers) on outline UK maps<br>(4) Recognition of physical and human geography features on 1:25000 and 1:50000 OS maps. | |

 

## Optional sub topic 1A: Coastal landscapes and processes

Two optional sub topics from 1A **or** 1B **or** 1C**.**

| Key idea | | Detailed content |
|---|---|---|
| **1.3** | A variety of physical processes interact to shape coastal landscapes | a. The physical processes at work on the coast: weathering (mechanical, chemical, biological), mass movement (sliding and slumping), erosion (abrasion, hydraulic action, attrition and solution), transport (traction, saltation, suspension, solution and longshore drift) and deposition. |
| | | b. Influence of geological structure (concordant/discordant, joints and faults), rock type (hard/soft rock) and wave action (destructive and constructive waves) on landforms (5) |
| | | c. How the UK's weather and climate (seasonality, storm frequency and prevailing winds) affect rates of coastal erosion and retreat, and impact on landforms and landscape. (6) |
| **1.4** | Coastal erosion and deposition create distinctive landforms within the coastal landscape | a. The role of erosional processes in the development of landforms: headlands and bays, caves, arches, cliffs, stacks, wave cut platforms. (7) |
| | | b. The role of depositional processes in the development of landforms: bars, beaches and spits. (7) |
| **1.5** | Human activities can lead to changes in coastal landscapes which affect people and the environment | a. How human activities (urbanisation, agriculture and industry) have affected landscapes and the effects of coastal recession and flooding on people and the environment. (8) |
| | | b. The advantages and disadvantages of different coastal defences used on the coastline of the UK (hard engineering, sea walls, groynes and rip rap and soft engineering, beach nourishment and managed retreat) and how they can lead to change in coastal landscapes. (8) |
| **1.6** | Distinctive coastal landscapes are the outcome of the interaction between physical and human processes | a. The significance of the location of one named 🌍 distinctive coastal landscape within the UK (discordant, concordant, coastline of deposition, coastal retreat) including how it has been formed and the most influential factors in its change. (7) |

**Integrated skills:**

(5) Use of BGS Geology maps (paper or online) to link coastal form to geology
(6) Using UK weather and climate data and calculation of mean rates of erosion using a multi-year data set
(7) Recognition of coastal landforms on 1:25000 and 1:50000 OS maps
(8) Use of 1:25000 and 1:50000 OS maps, and GIS, to investigate the impact of human intervention

🌍 = located example.

## Optional sub topic 1B: River landscapes and processes

| Key idea | Detailed content |
|---|---|
| **1.7** A variety of physical processes interact to shape river landscapes | a. The physical processes at work in the river landscape: weathering (mechanical, chemical and biological), mass movement (sliding and slumping), erosion (abrasion, hydraulic action, attrition and solution), transport (traction, saltation, suspension and solution) and deposition. |
| | b. How river landscapes contrast between the upper courses, mid courses and lower courses of rivers and why channel shape (width, depth), valley profile, gradient, discharge, velocity and sediment size and shape change along the course of a named UK river. (9) |
| | c. How the UK's weather (short-term events such as storms and droughts) and climate affect river processes and impact on landforms and landscapes. (10) |
| **1.8** Erosion and deposition interacting with geology create distinctive landforms in river landscapes | a. The role of erosion processes and the influence of geology in the development of landforms: interlocking spurs, waterfalls, gorges and river cliffs. (11) |
| | b. The role of depositional processes in the formation of flood plains, levees and point bars. |
| | c. The interaction of deposition and erosion processes in the development of landforms (meanders, oxbow lakes). |
| **1.9** Human activities can lead to changes in river landscapes which affect people and the environment | a. How human activities and changes in land use (urbanisation, agriculture and industry) have affected river processes that impact on river landscapes; the physical and human causes and effects of river flooding. (12) |
| | b. Advantages and disadvantages of different defences used on UK rivers (hard engineering– dams, reservoirs and channelisation and soft engineering– flood plain zoning and washlands) and how they can lead to change in river landscapes. (13) |
| **1.10** Distinctive river landscapes are the outcome of the interaction between physical and human processes | a. The significance of the location of one named distinctive UK river landscape (upland/lowland), how it has been formed and the most influential factors in its change. |

**Integrated skills:**
(9) Use of BGS Geology maps (paper or online) to link river long profiles to geology
(10) Using UK weather and climate data
(11) Recognition of river landforms on 1:25000 and 1:50000 OS maps
(12) Drawing simple storm hydrographs using rainfall and discharge data
(13) Use of 1:25000 and 1:50000 OS maps, and GIS, to investigate the impact of human intervention

## Optional sub topic 1C: Glaciated upland landscapes and processes

| Key idea | Detailed content |
|---|---|
| **1.11** A variety of physical processes interact to shape glaciated upland landscapes | a. Glacial processes that once operated in the glaciated upland landscape: glacial erosion (plucking, abrasion), transport (on or within the ice) and deposition. |
| | b. Physical processes that operate on the relict upland glacial landscapes of today: mechanical weathering (freeze thaw), mass movement (soil movement, and rock falls/slides), |
| | c. How past climate and current UK weather and climate (seasonal and diurnal variations in weather) affect processes that impact on glaciated upland landscapes. (14) |
| **1.12** Glacial erosion and deposition create distinctive landforms within glaciated upland landscapes | a. The role of erosional processes in the development of landforms (truncated spurs, corries, glacial troughs, glacial lake/tarns, arêtes hanging valleys and roche moutonnées). (15) |
| | b. The role of depositional processes in the development of landforms (ground and terminal moraines). (15) |
| | c. The interaction of deposition and erosion processes in the development of landforms (crag and tail and drumlins). (15) |
| **1.13** Human activities can lead to changes in glaciated upland landscapes | a. How humans activity (farming, forestry, settlement) have impacted on physical processes in glaciated upland landscapes. (16) |
| | b. Advantages and disadvantages of development (water storage and supply, renewable energy, recreation and tourism, conservation) and how they can lead to change in glaciated upland landscapes. (16) |
| **1.14** Distinctive glaciated upland landscapes are the outcome of the interaction between physical and human processes | a. The significance of the location of one named distinctive glaciated upland landscape in the UK (karst limestone/ igneous/metamorphic), how it has been formed and the most significant factors in its change. |

**Integrated skills:**
(14) Using UK weather and climate data
(15) Recognition glaciated upland landforms on 1:25000 and 1:50000 OS maps
(16) Use of 1:25000 and 1:50000 OS maps, and GIS, to investigate the impact of human intervention

## Topic 2: Weather hazards and climate change

| Key idea | | Detailed content |
|---|---|---|
| **2.1** | The atmosphere operates as a global system transferring heat and energy | a. The features of the global atmospheric circulation. |
| | | b. How circulation cells and ocean currents transfer and redistribute heat energy across the Earth. |
| **2.2** | The global climate was different in the past and continues to change due to natural causes | a. How climate has changed in the past over different time scales: glacial and interglacial periods during the Quaternary period. |
| | | b. Causes (Milankovitch cycles, solar variation, volcanism) and evidence (ice cores, pollen records, tree rings, historical sources) for natural climate change. |
| **2.3** | Global climate is now changing as a result of human activity | a. How human activities (industry, transport, energy, farming) produce greenhouse gases (carbon dioxide, methane) that cause the enhanced greenhouse effect. |
| | | b. Negative effects that climate change is having on the environment and people (changing patterns of crop yield, rising sea levels and retreating glaciers). |
| **2.4** | The UK has a distinct climate which has changed over time | a. Climate of the UK today and changes over the last 1000 years. (1) |
| | | b. Spatial variations in temperature, prevailing wind and rainfall within the UK. |
| | | c. The significance of the UK's geographic location in relation to its climate. |
| **Tropical cyclones** | | |
| **2.5** | Tropical cyclones are extreme weather events that develop under specific conditions and in certain locations | a. How the global circulation of the atmosphere leads to tropical cyclones (hurricanes and typhoons) in source areas and the sequence of their formation. (2) |
| | | b. Characteristics, frequency and geographical distribution of tropical cyclones and how these change over time. |
| **2.6** | There are various impacts of and responses to natural hazards caused by tropical cyclones depending on a country's level of development | a. Reasons why tropical cyclones are natural weather hazards (high winds, intense rainfall, storm surges, coastal flooding and landslides). (3) |
| | | b. Different social, economic and environmental impacts that tropical cyclones can have on a named developed* and a named emerging* or developing* country. |
| | | c. Different responses to tropical cyclones of individuals, organisations and governments in a named developed and a named emerging or developing country. (4) |

******See Appendix 2: Definitions*

 

| Key idea | | Detailed content |
|---|---|---|
| **Drought** | | |
| **2.7** | The causes of drought are complex with some locations more vulnerable than others | a. Characteristics of arid environments compared to the extreme weather conditions associated with drought. |
| | | b. Different causes of the weather hazard of drought: meteorological, hydrological, and human (agricultural, dam building, deforestation). |
| | | c. Why the global circulation makes some locations more vulnerable to drought as a natural hazard than others and how this changes over time. (5) |
| **2.8** | The impacts of, and responses to drought vary depending on a country's level of development | a. Reasons why droughts are hazardous. |
| | | b. How the impacts of drought on people and ecosystems can vary for a named developed and a named emerging or developing country. (6) |
| | | c. Different responses to drought from individuals, organisations and governments in a named developed and a named emerging or developing country. |

**Integrated skills:**
(1) Use and interpretation of line graphs/bar charts showing climate change
(2) Use of GIS to track the movement of tropical cyclones
(3) Use of weather and storm surge data to calculate Saffir-Simpson magnitude
(4) Use of social media source, satellite images and socio-economic data to assess impact
(5) Use and interpretation of graphs showing medium term rainfall trends
(6) Use and interpretation of socio-economic data

## Topic 3: Ecosystems, biodiversity and management

| Key idea | | Detailed content |
|---|---|---|
| **3.1** | Large-scale ecosystems are found in different parts of the world and are important | a. Distributions and characteristics of the world's large-scale ecosystems (tropical, temperate and boreal forests, tropical and temperate grasslands, deserts and tundra). (1) |
| | | b. The role of climate and local factors (soils and altitude) in influencing the distribution of different large-scale ecosystems. (2) |
| **3.2** | The biosphere is a vital system | a. How the biosphere provides resources for people (food, medicine, building materials and fuel resources) but is also increasingly exploited commercially for energy, water and mineral resources. |
| **3.3** | The UK has its own variety of distinctive ecosystems that it relies on | a. Distribution and characteristics of the UK's main terrestrial ecosystems (moorlands, heaths, woodlands, wetlands). (3) |
| | | b. Importance of marine ecosystems to the UK as a resource and how human activities are degrading them. |
| **Tropical rainforests** | | |
| **3.4** | Tropical rainforests show a range of distinguishing features | a. Biotic and abiotic characteristics of the tropical rainforest ecosystem (climate, soils, water, plants, animals and humans). |
| | | b. The interdependence of biotic and abiotic characteristics (climate, soils, water, plants, animals and humans) and the nutrient cycle (Gersmehl model). (4) |
| | | c. Why rainforests have very high biodiversity and how plants (stratified layers, buttress roots, drip tips) and animals (strong limbs, modified wings and beaks, camouflage) are adapted to that environment. |
| **3.5** | Tropical rainforest ecosystems provide a range of goods and services some of which are under threat | a. Examples of goods and services provided by tropical rainforest ecosystems (food stuffs, medicines, timber and recreation). |
| | | b. How climate change presents a threat to the structure, functioning and biodiversity of tropical rainforests. |
| | | c. Economic and social causes of deforestation (conversion to agriculture, resource extraction, population pressure). (5) |
| | | d. Political and economic factors (governance, commodity value and ecotourism) that have contributed to the sustainable management of a rainforest in a named region. |

| Key idea | | Detailed content |
|---|---|---|
| **Deciduous woodlands** | | |
| **3.6** | Deciduous woodlands show a range of distinguishing features | a. Abiotic and biotic characteristics of the deciduous woodland ecosystem (climate, soil, water, plants, animals and humans). |
| | | b. The interdependence of biotic and abiotic characteristics (climate, soil, water, plants, animals and humans) and the nutrient cycle (Gersmehl model). |
| | | c. Why deciduous woodlands have moderate biodiversity and how plants (leaf size and structure, water conservation in winter) and animals (migration, hibernation and food storage) are adapted to that environment. |
| **3.7** | Deciduous woodlands ecosystems provide a range of goods and services some of which are under threat | a. Examples of goods and services provided by deciduous woodlands ecosystems (timber, fuel, conservation and recreation). |
| | | b. How climate change presents a threats to both the structure, function and biodiversity of the deciduous woodland ecosystem. |
| | | c. Economic and social causes of deforestation (urbanisation and population growth, timber extraction and agricultural change). (6) |
| | | d. Different approaches to the sustainable use and management of deciduous woodlands in a named region. |

**Integrated skills:**
(1) Use of world maps to show the location of global biomes
(2) Comparing climate graphs for different biomes
(3) Interpret GIS maps
(4) Use and interpretation of nutrient cycle diagrams and food webs diagrams
(5) Use and interpretation of line graphs showing the range of future global population projections, and population in relation to likely available resources
(6) Use of GIS to identify the pattern of forest loss.

## Assessment information

- First assessment: May/June 2018.
- The assessment is 1 hour and 30 minutes.
- The assessment consists of three sections.
- The assessment is out of 94 marks.
- The paper will assess spelling, punctuation, grammar and use of specialist terminology which will contribute 4 marks towards the overall marks for this paper.
- Each question is set in a context.
- Students must answer two from three optional questions (Coastal landscapes and processes, River landscapes and processes or Glaciated upland landscapes and processes) in Section A. Students must answer all questions from Sections B and C.

- The exam includes multiple-choice questions, short open, open response, calculations and 8-mark extended writing questions.
- Extended writing questions will assess students' ability to develop extended written arguments and to draw well-evidenced and informed conclusions about geographical questions and issues.
- Calculators will be used in the examination.

## Sample assessment materials

A sample paper and mark scheme for this paper can be found in the *Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Geography A* Sample Assessment Materials (SAMs) document.

# Component 2: The Human Environment

## Overview

This component brings together human geography and people-environment issues. The component is divided into three sections:

- Topic 4: Changing cities – this covers an overview of global urban processes and trends and detailed case studies of a major UK city and a major city in a developing or emerging country
- Topic 5: Global development – this covers an overview of the causes and consequences of uneven global development and a detailed case study of challenges that affect a developing or emerging country
- Topic 6: Resource management – this covers an overview of the global and UK distribution of food, energy and water and one detailed study of **either** energy resource management **or** water resource management at different scales.

## Content

### Topic 4: Changing cities

| **Overview of urban patterns and processes** | |
|---|---|
| **Key idea** | **Detailed content** |
| **4.1** Urbanisation is a global process | a. Contrasting trends in urbanisation over the last 50 years in different parts of the world (developed, emerging and developing countries). |
| | b. How and why urbanisation has occurred at different times and rates in different parts of the world (developed, emerging and developing countries) and the effects. |
| **4.2** The degree of urbanisation varies across the UK | a. Distribution of urban population in the UK and the location of its major urban centres. |
| | b. Factors causing the rate and degree of urbanisation to differ between the regions of the UK. |

| Case Study of a major* UK city | | |
|---|---|---|
| **Key idea** | | **Detailed content** |
| **4.3** | The context of the chosen UK city influences its functions and structure | a. Site, situation and connectivity of the chosen UK city in a national (cultural and environmental), regional and global context. |
| | | b. Chosen UK city's structure (Central Business District (CBD), inner city, suburbs, urban-rural fringe) in terms of its functions and building age. |
| **4.4** | The chosen UK city is being changed by movements of people, employment and services | a. The sequence of urbanisation, suburbanisation, counter-urbanisation and re-urbanisation processes and their distinctive characteristics for the chosen UK city. (2) |
| | | b. Causes of national and international migration and the impact on different parts of the chosen UK city (age structure, ethnicity, housing, services). (3) |
| **4.5** | Globalisation and economic change create challenges for the chosen UK city that require long-term solutions | a. Key population characteristics of the chosen UK city's that is available from the Census and reasons for population growth or decline. (4) |
| | | b. Causes of deindustrialisation (globalisation, de-centralisation, technological advances and developments in transport) and impacts on the chosen UK city. |
| | | c. How economic change is increasing inequality in the city and the differences in quality of life. |
| | | d. Recent changes in retailing and their impact on the chosen UK city: decline in the Central Business District (CBD), growth of edge- and out-of-town shopping and increasing popularity of internet shopping). |
| | | e. The range of possible strategies aimed at making urban living more sustainable and improving quality of life (recycling, employment, education, health, transport, affordable and energy-efficient housing) for the chosen UK city. (5) |

**Case Study of a major city in a developing country* or an emerging country***

| Key idea | | Detailed content |
|---|---|---|
| **4.6** | The context of the chosen developing country or emerging country city influences its functions and structure | a. Site, situation and connectivity of the chosen city in a national (cultural and environmental), regional and global context. |
| | | b. The chosen city's structure (Central Business District (CBD), inner city, suburbs, urban-rural fringe) in terms of its functions and building age. |
| **4.7** | The character of the chosen developing country or emerging country city is influenced by its fast rate of growth | a. Reasons for past and present trends in population growth (rates of natural increase, national and international migration, economic investment and growth). (1) |
| | | b. Causes of national and international migration and the impact on different parts of the chosen city (age structure, ethnicity, housing, services). (6) |
| | | c. How the growth of the chosen city is accompanied by increasing inequality (areas of extreme wealth versus poverty) and reasons for differences in quality of life. |
| **4.8** | Rapid growth, within the chosen developing country or emerging country city, results in a number of challenges that need to be managed | a. Effects resulting from the chosen city's rapid urbanisation: housing shortages, squatter settlements, under-employment employment, pollution and inadequate services. (7) |
| | | b. Advantages and disadvantages of both bottom-up and top-down approaches to solving the chosen city's problems and improving the quality of life or its people. |
| | | c. The role of government policies in improving the quality of life (social, economic and environmental) within the chosen city. |

**Integrated skills:**
(1) Use and interpretation of line graphs and calculating of rate of change/annual or decadal percentage growth
(2) Using satellite images to identify different land use zones in urban areas
(3) Using a combination of population pyramids, choropleth maps and GIS
(4) Using Census output area data for 2011
(5) Calculating the ecological footprint of people in the city, and comparing it to other locations
(6) Using GIS/satellite images, historic images and maps to investigate spatial growth
(7) Using quantitative and qualitative information to judge the scale of variations in quality of life.

*****See *Appendix 2: Definitions*

## Topic 5: Global development

| Key idea | Detailed content |
|---|---|
| **5.1** Definitions of development vary as do attempts to measure it | a. Contrasting ways of defining development, using economic criteria and broader social and political measures. |
| | b. Different factors contribute to the human development of a country: economic, social, technological, cultural, as well as food and water security. |
| | c. How development is measured in different ways: Gross Domestic Product (GDP) per capita, the Human Development Index, measures of inequality and indices of political corruption. (1) |
| **5.2** The level of development varies globally | a. Global pattern of development and its unevenness between and within countries, including the UK. (2) |
| | b. Factors (physical, historic and economic) that have led to spatial variations in the level of development globally and within the UK. |
| **5.3** Uneven global development has had a range of consequences | a. Impact of uneven development on the quality of life in different parts of the world: access to housing, health, education, employment, technology, and food and water security. |
| **5.4** A range of strategies has been used to try to address uneven development | a. The range of international strategies (international aid and inter-governmental agreements) that attempt to reduce uneven development. |
| | b. Difference between top-down (government or transnational corporation (TNC) led) and bottom-up development projects (community led). Their advantages and limitations in the promotion of development. |

 

**Case Study of development in a developing country*or an emerging country***

| Key idea | | Detailed content |
|---|---|---|
| **5.5** | The level of development of the chosen developing or emerging country is influenced by its location and context in the world | a. Location and position of the chosen country in its region and globally. |
| | | b. Broad political, social, cultural and environmental context of the chosen country in its region and globally. |
| | | c. Unevenness of development within the chosen country (core and periphery) and reasons why development does not take place at the same rate across all regions. |
| **5.6** | The interactions of economic, social and demographic processes influence the development of the chosen developing or emerging country | a. Positive and negative impacts of changes that have occurred in the sectors (primary, secondary, tertiary and quaternary) of the chosen country's economy. (3) |
| | | b. Characteristics of international trade and aid and the chosen country's involvement in both. (4) |
| | | c. Changing balance between public investment (by government) and private investment (by TNCs and smaller businesses) for the chosen country. |
| | | d. Changes in population structure and life expectancy that have occurred in the last 30 years in the chosen country. (5) |
| | | e. Changing social factors (increased inequality, growing middle class and improved education) in the chosen country. |
| **5.7** | Changing geopolitics and technology impact on the chosen developing or emerging country | a. How geopolitical relationships with other countries affect the chosen country's development: foreign policy, defence, military pacts, territorial disputes. |
| | | b. How technology and connectivity support development in different parts of the chosen country and for different groups of people. (6) |
| **5.8** | There are positive and negative impacts of rapid development for the people and environment of the chosen developing or emerging country | a. Positive and negative social, economic and environmental impacts of rapid development for the chosen country and its people. |
| | | b. How the chosen country's government and people are managing the impacts of its rapid development to improve quality of life and its global status. |

**Integrated skills:**
(1) Comparing the relative ranking of countries using single versus composite development measures
(2) Interpreting choropleth maps
(3) Using numerical economic data to profile the chosen country
(4) Using proportional flow line maps to visualize trade patterns and flows
(5) Interpreting population pyramids
(6) Using socio-economic data to calculate difference from the mean, for core and periphery regions.

*****See *Appendix 2: Definitions*

## Topic 6: Resource management

| Overview of the global and UK distribution of food, energy and water | |
|---|---|
| **Key idea** | **Detailed content** |
| **6.1** A natural resource is any feature or part of the environment that can be used to meet human needs | a. Natural resources can be defined and classified in different ways (biotic, abiotic, renewable and non-renewable). |
| | b. Ways in which people exploit environments in order to obtain water, food and energy (extraction of fossil fuels, fishing, farming and deforestation). |
| | c. How environments are changed by this exploitation (reduced biodiversity, soil erosion and reduced water and air quality). |
| **6.2** The patterns of the distribution and consumption of natural resources varies on a global and a national scale | a. Global and UK variety and distribution of natural resources (soil and agriculture, forestry, fossil fuels, water supply, rock and minerals). (1) |
| | b. Global patterns of usage and consumption of food, energy and water. (2) |
| **Integrated skills**. (1) Use and interpretation of UK and world maps showing the distribution of resources; (2) Using different choropleth maps and data visualisations such as Gapminder. | |

### Optional sub topic 6A: Energy resource management

One optional sub topic from **either** 6A **or** 6B**.**

| Key idea | Detailed content |
|---|---|
| **6.3** Renewable and non-renewable energy resources can be developed | a. Energy resources can be classified as renewable and non-renewable. |
| | b. Advantages and disadvantages of the production and development of one non-renewable energy resource. |
| | c. Advantages and disadvantages of the production and development of one renewable energy resource. |
| **6.4** To meet demand, countries use energy resources in different proportions. This is called the energy mix | a. The composition of the UK's energy mix. |
| | b. How global variations in the energy mix are dependent on a number of factors: population, wealth and the availability of energy resources. (1) |

| Key idea | | Detailed content |
|---|---|---|
| **6.5** | There is increasing demand for energy that is being met by renewable and non-renewable resources | a. How and why global demand and supply has changed over the past 100 years due to human intervention: world population, growth increased wealth and technological advances. (2) |
| | | b. How non-renewable energy resources (coal, oil, natural gas and uranium) are being developed and how this can have both positive and negative impacts on people and the environment. |
| | | c. How renewable energy resources (hydro-electric power (HEP), wind power and solar power) are being developed and how this can have both positive and negative impacts on people and the environment. |
| | | d. How technology (fracking) can resolve energy resource shortages. |
| **6.6** | Meeting the demands for energy resources can involve interventions by different interest groups | a. How attitudes to the exploitation and consumption of energy resources vary with different stakeholders (individuals, organisations and governments). |
| **6.7** | Management and sustainable use of energy resources are required at a range of spatial scales from local to international | a. Why renewable and non-renewable energy resources require sustainable management. (3) |
| | | b. Different views held by individuals, organisations and governments on the management and sustainable use of energy resources. |
| | | c. How one developed country and one emerging country or developing country have attempted to manage their energy resources in a sustainable way. |

**Integrated skills**.
(1) Use and interpretation of world maps showing the distribution of energy resources
(2) Use and interpretation of line graphs showing the range of future global population projections, and population in relation to likely available energy resources
(3) Calculation of carbon and ecological footprints.

## Optional sub topic 6B: Water resource management

| Key idea | | Detailed content |
|---|---|---|
| **6.8** | The supply of fresh water supply varies globally | a. Global distribution of fresh water. |
| | | b. How the availability of fresh water varies on a global, national and local scale. |
| | | c. Why some parts of the world have a water surplus or a water deficit. (1) |
| | | d. How and why the supply and demand for water has changed in the past 50 years due to human intervention. (2) |
| **6.9** | There are differences between the water consumption patterns of developing countries and developed countries | a. The proportion of water used by agriculture, industry and domestic in developed countries and emerging or developing countries. |
| | | b. Why there are differences in water usage between developed countries and emerging or developing countries. |
| **6.10** | Countries at different levels of development have water supply problems | a. Why the UK has water supply problems (imbalances of the supply and demand for rainfall, seasonal imbalances and an ageing infrastructure: sewage and water pipes). |
| | | b. Why emerging or developing countries have water supply problems (access to only untreated water, pollution of water courses and low annual rainfall). |
| **6.11** | Meeting the demands for water resources could involve technology and interventions by different interest groups | a. How attitudes to the exploitation and consumption of water resources vary with different stakeholders (individuals, organisations and governments). (3) |
| | | b. How technology (desalination) can resolve water resource shortages. |
| **6.12** | Management and sustainable use of water resources are required at a range of spatial scales from local to international | a. Why water resources require sustainable management. |
| | | b. Different views held by individuals, organisations and governments on the management and sustainable use of water resources. |
| | | c. How one developed country and one emerging or developing country have attempted to manage their water resources in a sustainable way. |

**Integrated skills**:
(1) Use and interpretation of UK and world maps showing the distribution of freshwater resources supply and demand
(2) Use and interpretation of line graphs showing the range of future global population projections, and population in relation to likely available water resources
(3) Use and interpretation of UK and World relative water stress maps.

## Assessment information

- First assessment: May/June 2018.
- The assessment is 1 hour and 30 minutes.
- The assessment consists of three sections.
- The assessment is out of 94 marks.
- The paper will assess spelling, punctuation, grammar and use of specialist terminology which will contribute 4 marks towards the overall marks for this paper.
- Each question is set in a context.
- Students must answer all questions from Sections A and B. Students must answer **one** from two optional questions (Energy resource management or Water resource management) in Section C.
- The exam includes multiple-choice questions, short open, open response, calculations and 8-mark extended writing questions.
- Extended writing questions will assess students' ability to develop extended written arguments and to draw well-evidenced and informed conclusions about geographical questions and issues.
- Calculators will be used in the examination.

## Sample assessment materials

A sample paper and mark scheme for this paper can be found in the *Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Geography A* Sample Assessment Materials (SAMs) document.

# Component 3: Geographical Investigations: Fieldwork and UK Challenges

## Overview

This component brings together practical geographical enquiry into physical and human processes and environments and the interactions between the two. The component is divided into two sections:

- Topic 7: Geographical investigations – fieldwork. Two geographical investigations each involving fieldwork and research. There is a choice of **one from two** environments in 7A: Investigating physical environments (rivers or coasts) and **one from two** environments 7B: Investigating human environments (central/inner urban area or rural settlements).
- Topic 8: Geographical investigations – UK challenges. Students are required to draw across their knowledge and understanding of the UK, from the physical and human geography drawn from Components 1 and 2, in order to investigate a contemporary challenge for the UK. Students are required to have a geographical overview of the four UK challenges in Topic 8 from which the assessment context will be drawn.

### Topic 7: Geographical investigations – fieldwork

The experience of fieldwork helps students to develop new geographical insights into the two contrasting environments required for this qualification and to apply their geographical knowledge, understanding and skills to these environments.

One environment must be chosen from a river landscape or a coastal landscape and one from a central/inner urban area or rural settlement. Fieldwork must be outside the classroom and school/college grounds. It does not have to take place in the UK necessarily, but the examination for this will always treat fieldwork within the context of the UK.

## Contexts for fieldwork - focus, purpose, content and skills

The table below specifies the minimum types and range of fieldwork (including qualitative, quantitative and secondary data) required for the options available.

### 7A: Investigating physical environments (rivers landscapes OR coastal landscapes)

*Task: River landscapes – investigation of change in a river channe*l.

| Enquiry process point | General focus and details of fieldwork |
|---|---|
| **1. Formulating Enquiry questions** | Students must have an opportunity to develop understanding of the kinds of questions that can be investigated through fieldwork in river environments. Students must have an opportunity to develop a question(s) based on their location and the task. |
| **2. Fieldwork methods** | Fieldwork data collection must include at least:<br>• one quantitative fieldwork method to measure river discharge<br>• one qualitative fieldwork method to record landforms that make up the river landscape.<br>Human interaction: students must develop their understanding of the implications of river processes for people living in the catchment area. |
| **3. Secondary data sources** | • A flood risk map e.g. Environment Agency flood risk map.<br>• One other secondary source. |

*Task: Coastal landscapes – investigation of coastal processes through landscape evidence*

| Enquiry process point | General focus and details of fieldwork |
|---|---|
| **1. Formulating Enquiry questions** | Students must have an opportunity to develop understanding of the kinds of question that can be investigated through fieldwork in coastal environments. Students must have an opportunity to develop a question(s) based on their location and the task. |
| **2. Fieldwork methods *(for coastal landscapes)*** | Fieldwork data collection must include at least:<br>• one quantitative fieldwork method to measure beach morphology and sediment characteristics.<br>• one qualitative fieldwork method to record landforms that make up the coastal landscape.<br>Human interaction: students must develop their understanding of the implications of coastal processes for people living in the coastal environment. |
| **3. Secondary data sources** | • A geology map e.g. BGS Geology of Britain viewer.<br>• One other secondary source. |

### 7B: Investigating human environments(central/inner urban area OR rural settlements)

*Task: Changing city environments – investigating change in central/inner urban area(s)*

| Enquiry process point | General focus and details of fieldwork |
|---|---|
| **1. Formulating Enquiry questions** | Students must have an opportunity to develop understanding of the kinds of question that can be investigated through fieldwork in urban environments. Students must have an opportunity to develop a question(s) based on their location and the task. |
| **2. Fieldwork methods and techniques** | Fieldwork data collection must include at least:<br>• one qualitative fieldwork method to record the quality of the urban environment<br>• one quantitative fieldwork method to measure land use function.<br>Physical interaction: students must develop their understanding of the interaction between physical landscape features, the central/inner urban area and residents and visitors. |
| **3. Secondary data sources** | The use of at least **two** different secondary sources of data, including:<br>• Census data e.g. Office for National Statistics (ONS) website<br>• one other chosen by the centre. |

*Task: Changing rural environments – investigating change in rural settlements*

| Enquiry process point | General focus and details of fieldwork |
|---|---|
| **1. Formulating Enquiry questions** | Students must have an opportunity to develop understanding of the kinds of question that can be investigated through fieldwork in rural environments. Students must have an opportunity to develop a question(s) based on their location and the task. |
| **2. Fieldwork methods and techniques** | Fieldwork data collection must include at least:<br>• one qualitative fieldwork method to record the views of people on the quality of the rural environment<br>• one quantitative fieldwork method to measure flows of people within a rural settlement.<br>Physical interaction: students must develop their understanding of the interaction between physical landscape features, rural settlements and residents and visitors. |
| **3. Secondary data sources** | The use of at least **two** different secondary sources of data, including:<br>• Census data e.g. Office for National Statistics (ONS) Neighbourhood Statistics – neighbourhood summary report<br>• one other chosen by the centre. |

## Topic 8: Geographical investigations – UK challenges

In this topic, students are required to draw on their knowledge and understanding of the physical and human characteristics of the UK from Components 1 and 2, and use their geographical skills, to investigate a contemporary challenge for the UK. The UK challenge will be drawn from one or more of four themes below.

| The UK Challenges | Detailed content | Related topics |
|---|---|---|
| **8.1 The UK's resource consumption and environmental sustainability challenge** | a. Changes in the UK's population in the next 50 years and implications on resource consumption.<br>b. Pressures of growing populations on the UK's ecosystems.<br>c. Range of national sustainable transport options for the UK. | 2.3a; 3.3; 3.6a, c; 4.1a; 4.4b; 4.5b, c, d, e; 5.2; 6.1; 6.2a |
| **8.2 The UK settlement, population and economic challenges** | a. The 'two-speed economy' and options for bridging the gap between south east and the rest of the UK.<br>b. Costs and benefits of greenfield development and the regeneration of brownfield sites.<br>c. UK net migration statistics and their reliability and values and attitudes of different stakeholders towards migration. | 4.2b; 4.4a, b; 4.5b, c, d, e; 5.2; 5.4b |
| **8.3 The UK's landscape challenges** | a. Approaches to conservation and development of UK National Parks<br>b. Approaches to managing river and coastal UK flood risk. | 1.5; 1.9; 1.13 |
| **8.4 The UK's climate change challenges** | a. Uncertainties about how global climate change will impact on the UK's future climate.<br>b. Impacts of climate change on people and landscapes in UK<br>c. Range of responses to climate change in the UK at a local and national scale. | 1.4b; 1.7b; 1.11b; 2.3b; 2.4a; 3.3; 3.6b; 4.5b; 6.2 |

## Assessment information

- First assessment: May/June 2018.
- The assessment is 1 hour and 30 minutes.
- The assessment consists of three sections.
- The assessment is out of 64 marks.
- The paper will assess spelling, punctuation, grammar and use of specialist terminology which will contribute 4 marks towards the overall marks for this paper.
- Students must answer one from the optional questions in Section A (river landscapes or Coastal landscapes and processes) and one from the optional questions in Section B (central inner urban area or rural settlements). Students must answer all questions from Section C.
- The exam includes multiple-choice questions, short open, open response, calculations, 8-mark and 12-mark extended writing questions.
- Extended writing questions will assess students' ability to develop extended written arguments and to draw well-evidenced and informed conclusions about geographical questions and issues.
- Calculators will be used in the examination.

In the examination in any given year, students will be assessed on **at least two** of the six enquiry stages below, **across both** their investigations:

| **Stage in the enquiry process** | **Description** |
|---|---|
| 1 | Understanding of the kinds of question capable of being investigated through fieldwork and an understanding of the geographical enquiry processes appropriate to investigate these. |
| 2 | Understanding of the range of techniques and methods used in fieldwork, including observation and different kinds of measurement. |
| 3 | Processing and presenting fieldwork data in various ways including maps, GIS, graphs and diagrams (hand drawn and computer-generated). |
| 4 | Analysing and explaining data collected in the field using knowledge of relevant geographical case studies and theories. |
| 5 | Drawing evidenced conclusions and summaries from fieldwork transcripts and data. |
| 6 | Reflecting critically on fieldwork data, methods used, conclusions drawn and knowledge gained. |

## Sample assessment materials

A sample paper and mark scheme for this paper can be found in the *Pearson Edexcel Level 1/Level 2 GCSE (9–1) in Geography A* Sample Assessment Materials (SAMs) document.

## Authentication of fieldwork

Centres must complete the Fieldwork Statement in *Appendix 1*. This form must be completed as evidence that students have undertaken appropriate fieldwork as part of their programme of study for this qualification. Pearson will publish the final deadline date for submission of this form on our website each year. Failure to return the Fieldwork Statement on time will constitute malpractice on the part of the Centre, see page 37.

# Geographical skills

Students are required to develop a range of geographical skills throughout their course of study. These skills may be assessed across any of the examined components. The full list of geographical skills is given below. Some geographical skills are specific to particular subject content; these are indicated in the 'integrated skills' sections within the topics throughout the specification.

**Atlas and map skills:**

- recognise and describe distributions and patterns of both human and physical features at a range of scales using a variety of maps and atlases
- draw, label, annotate, understand and interpret sketch maps
- recognise and describe patterns of vegetation, land use and communications infrastructure, as well as other patterns of human and physical landscapes
- describe and identify the site, situation and shape of settlements

**Graphical skills:**

- label, annotate and interpret different diagrams, maps, graphs, sketches and photographs
- use and interpret aerial, oblique, ground and satellite photographs from a range of different landscapes
- use maps in association with photographs and sketches and understand links to directions

**Data and information research skills:**

- use online census sources to obtain population and local geo-demographic information

**Investigative skills:**

- identify questions or issues for investigation, develop a hypothesis and/or key questions
- consider appropriate sampling procedures (systematic vs random vs stratified) and sample size
- consider health and safety and undertake risk assessment
- select data collection methods and equipment to ensure accuracy and reliability, develop recording sheets for measurements and observation
- use of ICT to manage, collate, process and present information, use of hand-drawn graphical skills to present information in a suitable way
- write descriptively, analytically and critically about findings
- develop extended written arguments, drawing well evidenced and informed conclusions about geographical questions and issues.

# Mathematics and Statistics Skills

These skills are taken from the document Geography GCSE subject content published by the Department for Education (DfE) April 2014. These skills may be assessed across any of the examined components. Some mathematics and statistics skills are specific to particular subject content; these are indicated in the 'integrated skills' sections within the topics throughout the specification.

**Cartographic skills:**

- use and understand gradient, contour and spot height on OS maps and other isoline maps (e.g. weather charts, ocean bathymetric charts)
- interpret cross sections and transects
- use and understand coordinates, scale and distance
- describe and interpret geo-spatial data presented in a GIS framework framework (e.g. analysis of flood hazard using the interactive maps on the Environment Agency website)

**Graphical skills:**

- select and construct appropriate graphs and charts to present data, using appropriate scales and including bar charts, pie charts, pictograms, line charts, histograms with equal class intervals
- interpret and extract information from different types of graphs and charts including any of the above and others relevant to the topic (e.g. triangular graphs, radial graphs, wind rose diagrams, proportional symbols)
- interpret population pyramids, choropleth maps and flow-line maps

**Numerical skills:**

- demonstrate an understanding of number, area and scale and the quantitative relationships between units
- design fieldwork data collection sheets and collect data with an understanding of accuracy, sample size and procedures, control groups and reliability
- understand and correctly use proportion and ratio, magnitude, frequency (e.g. 1:200 flood events) and logarithmic scales
- draw informed conclusions from numerical data

**Statistical skills:**

- use appropriate measures of central tendency, spread and cumulative frequency (median, mean, range, quartiles and inter-quartile range, mode and modal class)
- calculate percentage increase or decrease and understand the use of percentiles
- describe relationships in bivariate data: sketch trend lines through scatter plots; draw estimated lines of best fit; make predictions; interpolate and extrapolate trends
- be able to identify weaknesses in selective statistical presentation of data

## Assessment Objectives

| Students must: | | % in GCSE |
|---|---|---|
| **AO1** | Demonstrate knowledge of locations, places, processes, environments and different scales. | 15 |
| **AO2** | Demonstrate geographical understanding of:<br>• concepts and how they are used in relation to places, environments and processes;<br>• the inter-relationships between places, environments and processes. | 25 |
| **AO3** | Apply knowledge and understanding to interpret, analyse and evaluate geographical information and issues and to make judgements. | 35<br>(10% applied to fieldwork context(s)) |
| **AO4** | Select, adapt and use a variety of skills and techniques to investigate questions and issues and communicate findings. | 25<br>(5% used to respond to fieldwork data and contexts) |
| | **Total** | **100%** |

### Breakdown of Assessment Objectives

| Paper | Assessment Objectives | | | | Total for all Assessment Objectives |
|---|---|---|---|---|---|
| | AO1 % | AO2 % | AO3 % | AO4 % | |
| Paper 1: The Physical Environment | 6.7 | 11.3 | 11.3 | 8.3 | 37.5% |
| Paper 2: The Human Environment | 6.7 | 11.3 | 11.3 | 8.3 | 37.5% |
| Paper 3: Geographical Investigations: Fieldwork and UK Challenges | 1.6 | 2.4 | 12.4 | 8.4 | 25% |
| **Total for GCSE** | **15%** | **25%** | **35%** | **25%** | **100%** |

# 3 Administration and general information

## Entries

Details of how to enter students for the examinations for this qualification can be found in our *UK Information Manual*. A copy is made available to all examinations officers and is available on our website: qualifications.pearson.com

### Forbidden combinations and discount code

Centres should be aware that students who enter for more than one GCSE, or other Level 2 qualifications with the same discount code, will have only the grade for their 'first entry' counted for the purpose of the School and College Performance Tables (please see *Appendix 6: Codes*). For further information about what constitutes 'first entry' and full details of how this policy is applied, please refer to the DfE website: www.education.gov.uk

Students should be advised that, if they take two GCSEs with the same discount code, schools and colleges to which they wish to progress are very likely to take the view that they have achieved only one of the two GCSEs. The same view may be taken if students take two GCSE or other Level 2 qualifications that have different discount codes but which have significant overlap of content. Students or their advisers who have any doubts about their subject combinations should check with the institution to which they wish to progress before embarking on their programmes.

## Access arrangements, reasonable adjustments, special consideration and malpractice

Equality and fairness are central to our work. Our equality policy requires all students to have equal opportunity to access our qualifications and assessments, and our qualifications to be awarded in a way that is fair to every student.

We are committed to making sure that:

- students with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to students who do not share that characteristic
- all students achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

### Access arrangements

Access arrangements are agreed before an assessment. They allow students with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do without changing the demands of the assessment.

The intention behind an access arrangement is to meet the particular needs of an individual student with a disability, without affecting the integrity of the assessment. Access arrangements are the principal way in which awarding bodies comply with the duty under the Equality Act 2010 to make 'reasonable adjustments'.

Access arrangements should always be processed at the start of the course. Students will then know what is available and have the access arrangement(s) in place for assessment.

## Reasonable adjustments

The Equality Act 2010 requires an awarding organisation to make reasonable adjustments where a person with a disability would be at a substantial disadvantage in undertaking an assessment. The awarding organisation is required to take reasonable steps to overcome that disadvantage.

A reasonable adjustment for a particular person may be unique to that individual and therefore might not be in the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, which will include:

- the needs of the student with the disability
- the effectiveness of the adjustment
- the cost of the adjustment; and
- the likely impact of the adjustment on the student with the disability and other students.

An adjustment will not be approved if it involves unreasonable costs to the awarding organisation, timeframes or affects the security or integrity of the assessment. This is because the adjustment is not 'reasonable'.

## Special consideration

Special consideration is a post-examination adjustment to a student's mark or grade to reflect temporary injury, illness or other indisposition at the time of the examination/ assessment, which has had, or is reasonably likely to have had, a material effect on a candidate's ability to take an assessment or demonstrate their level of attainment in an assessment.

## Further information

Please see our website for further information about how to apply for access arrangements and special consideration.

For further information about access arrangements, reasonable adjustments and special consideration, please refer to the JCQ website: www.jcq.org.uk.

## Malpractice

### Candidate malpractice

Candidate malpractice refers to any act by a candidate that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

Candidate malpractice in examinations **must** be reported to Pearson using a *JCQ M1 Form* (available at www.jcq.org.uk/exams-office/malpractice). The form can be emailed to pqsmalpractice@pearson.com or posted to Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice constitutes staff or centre malpractice.

### Staff/centre malpractice

Staff and centre malpractice includes both deliberate malpractice and maladministration of our qualifications. As with candidate malpractice, staff and centre malpractice is any act that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

All cases of suspected staff malpractice and maladministration **must** be reported immediately, before any investigation is undertaken by the centre, to Pearson on a *JCQ M2(a) Form* (available at www.jcq.org.uk/exams-office/malpractice). The form, supporting documentation and as much information as possible can be emailed to pqsmalpractice@pearson.com or posted to Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice itself constitutes malpractice.

More-detailed guidance on malpractice can be found in the latest version of the document *JCQ General and Vocational Qualifications Suspected Malpractice in Examinations and Assessments,* available at www.jcq.org.uk/exams-office/malpractice.

### Awarding and reporting

This qualification will be graded, awarded and certificated to comply with the requirements of Ofqual's General Conditions of Recognition.

This GCSE qualification will be graded and certificated on a nine-grade scale from 9 to 1 using the total subject mark where 9 is the highest grade. Individual papers are not graded.

Students whose level of achievement is below the minimum judged by Pearson to be of sufficient standard to be recorded on a certificate will receive an unclassified U result.

The first certification opportunity for this qualification will be 2018.

## Student recruitment and progression

Pearson follows the JCQ policy concerning recruitment to our qualifications in that:

- they must be available to anyone who is capable of reaching the required standard
- they must be free from barriers that restrict access and progression
- equal opportunities exist for all students.

### Prior learning and other requirements

This qualification has been built to progress from the geographical knowledge, understanding and skills in the geography programmes of study for the National Curriculum in England. Although the qualification does not directly assess geographical knowledge, understanding and skills of the content geography programmes of study for the National Curriculum in England it assumes that this geographical knowledge, understanding and skills have been developed lower down the key stages.

## Progression

Students can progress from this qualification to a number of different qualifications at Level 3, including GCE in Geography, Geology, Environmental Sciences, Travel and Tourism, and Leisure and Recreation.

With this rounded qualification that helps students to understand the world around them they can, usually with further training, progress to employment.

 

# Appendices

# Appendix 1: Fieldwork Statement

| **Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Geography** | **1GA0/1GB0** |
|---|---|
| Centre name: | Centre number: |
| All candidates must carry out fieldwork, outside of the classroom and school grounds, on at least two occasions. | |
| **Details of fieldwork** | |
| **Fieldwork occasion 1**<br>Specification topic links:<br><br>Fieldwork date:_____<br><br>Location:_____<br><br>Number of students:_____<br>Key issues/questions investigated: | **Fieldwork occasion 2**<br>Specification topic links:<br><br>Fieldwork date:_____<br><br>Location:_____<br><br>Number of students:_____<br>Key issues/questions investigated: |

**Head teacher declaration**

I declare that the fieldwork occasions recorded above have been carried out in accordance with 2016 Pearson Edexcel Level 1/Level 2 GCSE Geography (9-1) fieldwork requirements.

| | | | |
|---|---|---|---|
| Head teacher name: | | | |
| Head teacher signature: | | Date: | |

# Appendix 2: Definitions

This lists terms used in this specification and their definition.

| Term | Definition |
|---|---|
| Developing country | Country with low human development* (LHD), a poor country |
| Emerging country | Country with high or medium human development* (HMHD) |
| Developed country | Country with very high human development* (VHHD) |
| Major city | City with population of at least 200,000 inhabitants |

*Human Development as measured by the Human Development Index (HDI). For further information on which countries are categorised as Low, Medium, High and Very High Human Development by HDI please see this website: http://hdr.undp.org, alternatively please email TeachingGeography@pearson.com for further information on the definitions used within this document.

# Appendix 3: Exam command word definitions

This table lists the command words that could be used in the examinations for this qualification and their definitions.

| Command word | Definition |
|---|---|
| Identify/State/Name | Recall or select one or more pieces of information. |
| Define | State the meaning of a term. |
| Calculate | Produce a numerical answer, showing relevant working. |
| Draw/plot | Create a graphical representation of geographical information. |
| Label | Add a label/labels to a given resource, graphic or image. |
| Describe | Give an account of the main characteristics of something or the steps in a process. Statements in the response should be developed but do not need to include a justification or reason. |
| Compare | Find the similarities and differences of two elements given in a question. Each response must relate to **both** elements, and must include a statement of their similarity/difference. |
| Explain | Provide a reasoned explanation of how or why something occurs. An explanation requires a justification/exemplification of a point. Some questions will require the use of annotated diagrams to support explanation. |
| Suggest | Apply understanding to provide a reasoned explanation of how or why something may occur. A suggested explanation requires a justification/exemplification of a point. |
| Examine | Break something down into individual components/processes and say how each one individually contributes to the question's theme/topic and how the components/processes work together and interrelate. |
| Assess | Use evidence to determine the relative significance of something. Give consideration to all factors and identify which are the most important. |
| Discuss | Explore the strengths and weaknesses of different sides of an issue/question. Investigate the issue by reasoning or argument. |
| Evaluate | Measure the value or success of something and ultimately provide a substantiated judgement/conclusion. Review information and then bring it together to form a conclusion, drawing on evidence such as strengths, weaknesses, alternatives and relevant data. |

# Appendix 4: The context for the development of this qualification

All our qualifications are designed to meet our World Class Qualification Principles[1] and our ambition to put the student at the heart of everything we do.

We have developed and designed this qualification by:

- reviewing other curricula and qualifications to ensure that it is comparable with those taken in high-performing jurisdictions overseas
- consulting with key stakeholders on content and assessment, including learned bodies, subject associations, higher-education academics, teachers and employers to ensure this qualification is suitable for a UK context .

This qualification has also been developed to meet criteria stipulated by Ofqual in their documents *GCSE (9 to 1) Qualification Level Conditions and Requirements* and *GCSE Subject Level Conditions and Requirements for Geography*, published in April 2014.

[1] Pearson's World Class Qualification Principles ensure that our qualifications are:

- **demanding**, through internationally benchmarked standards, encouraging deep learning and measuring higher-order skills
- **rigorous**, through setting and maintaining standards over time, developing reliable and valid assessment tasks and processes, and generating confidence in end users of the knowledge, skills and competencies of certified students
- **inclusive**, through conceptualising learning as continuous, recognising that students develop at different rates and have different learning needs, and focusing on progression
- **empowering**, through promoting the development of transferable skills, see *Appendix 5*.

## From Pearson's Expert Panel for World Class Qualifications

**May 2014**

"The reform of the qualifications system in England is a profoundly important change to the education system. Teachers need to know that the new qualifications will assist them in helping their learners make progress in their lives.

When these changes were first proposed we were approached by Pearson to join an 'Expert Panel' that would advise them on the development of the new qualifications.

We were chosen, either because of our expertise in the UK education system, or because of our experience in reforming qualifications in other systems around the world as diverse as Singapore, Hong Kong, Australia and a number of countries across Europe.

We have guided Pearson through what we judge to be a rigorous qualification development process that has included:

- Extensive international comparability of subject content against the highest-performing jurisdictions in the world
- Benchmarking assessments against UK and overseas providers to ensure that they are at the right level of demand
- Establishing External Subject Advisory Groups, drawing on independent subject-specific expertise to challenge and validate our qualifications
- Subjecting the final qualifications to scrutiny against the DfE content and Ofqual accreditation criteria in advance of submission.

Importantly, we have worked to ensure that the content and learning is future oriented. The design has been guided by what is called an 'Efficacy Framework', meaning learner outcomes have been at the heart of this development throughout.

We understand that ultimately it is excellent teaching that is the key factor to a learner's success in education. As a result of our work as a panel we are confident that we have supported the development of qualifications that are outstanding for their coherence, thoroughness and attention to detail and can be regarded as representing world-class best practice."

**Sir Michael Barber (Chair)**

Chief Education Advisor, Pearson plc

**Professor Lee Sing Kong**

Director, National Institute of Education, Singapore

**Bahram Bekhradnia**

President, Higher Education Policy Institute

**Professor Jonathan Osborne**

Stanford University

**Dame Sally Coates**

Principal, Burlington Danes Academy

**Professor Dr Ursula Renold**

Federal Institute of Technology, Switzerland

**Professor Robin Coningham**

Pro-Vice Chancellor, University of Durham

**Professor Bob Schwartz**

Harvard Graduate School of Education

**Dr Peter Hill**

Former Chief Executive ACARA

All titles correct as at May 2014

# Appendix 5: Transferable skills

## The need for transferable skills

In recent years, higher education institutions and employers have consistently flagged the need for students to develop a range of transferable skills to enable them to respond with confidence to the demands of undergraduate study and the world of work.

The Organisation for Economic Co-operation and Development (OECD) defines skills, or competencies, as 'the bundle of knowledge, attributes and capacities that can be learned and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.'[1]

To support the design of our qualifications, the Pearson Research Team selected and evaluated seven global 21st-century skills frameworks. Following on from this process, we identified the National Research Council's (NRC) framework as the most evidence-based and robust skills framework. We adapted the framework slightly to include the Program for International Student Assessment (PISA) ICT Literacy and Collaborative Problem Solving (CPS) Skills.

The adapted National Research Council's framework of skills involves[2]:

## Cognitive skills

- **Non-routine problem solving** – expert thinking, metacognition, creativity.
- **Systems thinking** – decision making and reasoning.
- **Critical thinking** – definitions of critical thinking are broad and usually involve general cognitive skills such as analysing, synthesising and reasoning skills.
- **ICT literacy** – access, manage, integrate, evaluate, construct and communicate[3].

## Interpersonal skills

- **Communication** – active listening, oral communication, written communication, assertive communication and non-verbal communication.
- **Relationship-building skills** – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.
- **Collaborative problem solving** – establishing and maintaining shared understanding, taking appropriate action, establishing and maintaining team organisation.

## Intrapersonal skills

- **Adaptability** – ability and willingness to cope with the uncertain, handling work stress, adapting to different personalities, communication styles and cultures, and physical adaptability to various indoor and outdoor work environments.
- **Self-management and self-development** – ability to work remotely in virtual teams, work autonomously, be self-motivating and self-monitoring, willing and able to acquire new information and skills related to work.

Transferable skills enable young people to face the demands of further and higher education, as well as the demands of the workplace, and are important in the teaching and learning of this qualification. We will provide teaching and learning materials, developed with stakeholders, to support our qualifications.

[1] OECD (2012), Better Skills, Better Jobs, Better Lives (2012): http://skills.oecd.org/documents/OECDSkillsStrategyFINALENG.pdf

[2] Koenig, J. A. (2011) *Assessing 21st Century Skills: Summary of a Workshop*, National Research Council

[3] PISA (2011) The PISA Framework for Assessment of ICT Literacy, PISA

# Appendix 6: Codes

| Type of code | Use of code | Code |
|---|---|---|
| Discount codes | Every qualification is assigned to a discount code indicating the subject area to which it belongs. This code may change.<br>Discount codes are published by DfE. | Please see the GOV.UK website* |
| Regulated Qualifications Framework (RQF) codes | Each qualification title is allocated an Ofqual Regulated Qualifications Framework (RQF) code.<br>The RQF code is known as a Qualification Number (QN). This is the code that features in the DfE Section 96 and on the LARA as being eligible for 16–18 and 19+ funding, and is to be used for all qualification funding purposes. The QN will appear on students' final certification documentation. | The QN for this qualification is:<br>601/8134/5 |
| Subject codes | The subject code is used by centres to enter students for a qualification. Centres will need to use the entry codes only when claiming students' qualifications. | GCSE – 1GA0 |
| Paper codes | These codes are provided for reference purposes. Students do not need to be entered for individual components. | Paper 1: 1GA0/01<br>Paper 2: 1GA0/02<br>Paper 3: 1GA0/03 |

*www.gov.uk/government/publications/key-stage-4-qualifications-discount-codes-and-point-scores

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# GCSE (9-1) Geography A

## Sample Assessment Materials

**Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Geography A (1GA0)**

*First teaching from September 2016*

*First certification from 2018*

Issue 1

**Edexcel, BTEC and LCCI qualifications**

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Pearson is the world's leading learning company, with 40,000 employees in more than 70 countries working to help people of all ages to make measurable progress in their lives through learning. We put the learner at the centre of everything we do, because wherever learning flourishes, so do people. Find out more about how we can help you and your learners at qualifications.pearson.com



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Origami photography: Pearson Education Ltd/Naki Kouyioumtzis

ISBN 978 1 4469 2568 3

# Contents

# Introduction

The Pearson Edexcel Level 1/Level 2 GCSE (9-1) in Geography A is designed for use in schools and colleges. It is part of a suite of GCE qualifications offered by Pearson.

These sample assessment materials have been developed to support this qualification and will be used as the benchmark to develop the assessment students will take.

# General marking guidance

- All candidates must receive the same treatment. Examiners must mark the last candidate in exactly the same way as they mark the first.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than be penalised for omissions.
- Examiners should mark according to the mark scheme – not according to their perception of where the grade boundaries may lie.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification/indicative content will not be exhaustive.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, a senior examiner must be consulted before a mark is given.
- Crossed-out work should be marked **unless** the candidate has replaced it with an alternative response.
- For all questions marked using a Levels Based Mark Scheme, examiners should pay particular attention to the initial rubric which begins the indicative content section. This rubric details the Assessment Objective and where applicable strand emphasis that should be applied when making judgements within each band.

## How to award marks when level descriptions are used

### Finding the right level

The first stage is to decide which level the answer should be placed in. To do this, use a 'best-fit' approach, deciding which level most closely describes the quality of the answer. Answers can display characteristics from more than one level, and where this happens markers must use their professional judgement to decide which level is most appropriate.

### Placing a mark within a level

After a level has been decided on, the next stage is to decide on the mark within the level. The instructions below tell you how to reward responses within a level. However, where a level has specific guidance about how to place an answer within a level, always follow that guidance. Statements relating to the treatment of students who do not fully meet the requirements of the question are also shown in the indicative content section of each levels based mark scheme. These statements should be considered alongside the levels descriptors.

Markers should be prepared to use the full range of marks available in a level and not restrict marks to the middle. Markers should start at the middle of the level (or the uppermiddle mark if there is an even number of marks) and then move the mark up or down to find the best mark. To do this, they should take into account how far the answer meets the requirements of the level:

- If it meets the requirements fully, markers should be prepared to award full marks within the level. The top mark in the level is used for answers that are as good as can realistically be expected within that level
- If it only barely meets the requirements of the level, markers should consider awarding marks at the bottom of the level. The bottom mark in the level is used for answers that are the weakest that can be expected within that level
- The middle marks of the level are used for answers that have a reasonable match to the descriptor. This might represent a balance between some characteristics of the level that are fully met and others that are only barely met.

Write your name here

| Surname | Other names |
|---|---|
| | |

**Pearson Edexcel**
**Level 1/Level 2**
**GCSE (9–1)**

Centre Number | | | | | |

Candidate Number | | | | |

# Geography A

## Paper 1: The Physical Environment

Sample assessment material for first teaching
September 2016
**Time: 1 hour 30 minutes**

Paper Reference
**1GA0/01**

**You must have:**
Resource Booklet, calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A answer question 1 and **two** questions from questions 2, 3 and 4.
- In Section B and Section C answer all questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

### Information

- The total mark for this paper is 94.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are questions where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation, grammar and use of specialist terminology and grammar, as well as the clarity of expression.*
- The marks available for spelling, punctuation, grammar and specialist terminology are clearly indicated.

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

*Turn over* ▶

S50253A



S 5 0 2 5 3 A 0 1 2 1

PEARSON

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## SECTION A

## The changing landscapes of the UK

**Answer all parts of question 1. Write your answers in the spaces provided.**

**Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.**

**1** UK landscapes are constantly being changed by different processes.

(a) (i) State **one** example of a sedimentary rock.

**(1)**

- ☒ **A** schist
- ☒ **B** slate
- ☒ **C** basalt
- ☒ **D** chalk

(ii) State **one** characteristic of a sedimentary rock.

**(1)**

.....

.....

(b) Identify the location of **one** area of granite landscape in the UK.

**(1)**

- ☒ **A** South Wales
- ☒ **B** South west England
- ☒ **C** East Anglia
- ☒ **D** South east England

(c) (i) Farming is one example of an activity that affects the landscape.

State **one** other example of a human activity that affects the landscape.

**(1)**

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(ii) Explain **one** way in which farming affects the landscape.

**(2)**

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**(Total for Question 1 = 6 marks)**

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**Answer only two questions from Question 2 (Coastal landscapes and processes), Question 3 (River landscapes and processes) and Question 4 (Glaciated upland landscapes and processes).**

**Question 2: Coastal landscapes and processes**

**If you answer Question 2 put a cross in the box ☒ .**

Coastal landscapes are constantly being changed by different processes.

**2** (a) Study Figure 1 in the Resource Booklet.

(i) Identify **one** erosional landform shown in the coastal landscape on Figure 1.

**(1)**

.....

.....

(ii) State **one** type of biological weathering that might have an impact on this landscape.

**(1)**

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(iii) Rip rap is an example of hard engineering.

Explain **one** way rip rap helps protect coastal landscapes.

**(2)**

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(iv) Study Figure 2.

Examine how physical processes work together in the formation of the spit shown in Figure 2.

**(8)**

**(Total for Question 2 = 12 marks)**

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## Question 3: River landscapes and processes

**If you answer Question 3 put a cross in the box ☒ .**

River landscapes are constantly being changed by different processes.

**3** (a) Study Figure 3 in the Resource Booklet.

(i) Identify **one** landform in the river landscape shown in Figure 3.

**(1)**

(ii) State **one** type of chemical weathering that might have an impact on this river landscape.

**(1)**

(iii) Channelisation is an example of hard engineering.

Explain **one** way channelisation helps manage river landscapes.

**(2)**

(iv) Study Figure 4.

Examine how physical processes work together in the formation of the oxbow lake shown in Figure 4.

**(8)**

**(Total for Question 3 = 12 marks)**

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**Question 4: Glaciated upland landscapes and processes**

**If you answer Question 4 put a cross in the box ☒ .**

Glaciated upland landscapes are constantly being changed by different processes.

**4** (a) Study Figure 5 in the Resource Booklet.

(i) Identify **one** landform in the glaciated landscape shown in Figure 5.

**(1)**

.....

.....

(ii) State **one** type of mechanical weathering that might have an impact on this glaciated upland landscape.

**(1)**

.....

.....

(iii) Tourism has both negative and positive effects on glaciated upland landscapes.

Explain **one** way that tourism has a negative effect on glaciated upland landscapes.

**(2)**

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(iv) Study Figure 6.

Examine how physical processes work together in the formation of the drumlin shown in Figure 6.

**(8)**

**(Total for Question 4 = 12 marks)**

**TOTAL FOR SECTION A = 36 MARKS**

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## SECTION B

## Weather hazards and climate change

**5** The UK's climate experiences significant variations.

(a) (i) State **one** natural cause of climate change in the past.

**(1)**

(ii) State **two** sources of evidence for natural climate change in the past.

**(2)**

1

2

(iii) Study Figure 7 in the Resource Booklet.

Calculate the range of average temperatures for the four locations in Figure 7.

**(1)**

(iv) The prevailing wind, which is shown in Figure 7, influences the climate of the UK.

Explain **one** way prevailing wind affects the climate of the UK.

**(3)**

**(Total for Question 5 = 7 marks)**

**6** Extreme climate and weather conditions can create major hazards for people.

(a) Study Figure 8 in the Resource Booklet.

(i) Identify the location on the globe which has low pressure.

**(1)**

- ☒ **A** North Pole
- ☒ **B** 30° North
- ☒ **C** South Pole
- ☒ **D** 0° (the Equator)

(ii) Which of the following sources of geographical information would you select to investigate the weather conditions at location X?

**(1)**

- ☒ **A** average temperature graph
- ☒ **B** infrared satellite image
- ☒ **C** average rainfall graph
- ☒ **D** Saffir-Simpson magnitude data

(iii) Location Y experiences dry conditions.

Explain **one** reason why atmospheric circulation contributes to the climatic conditions at Y.

**(3)**

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(b) (i) Explain **one** human cause of drought.

**(2)**

(ii) Suggest **one** impact of drought for people living in a developed country.

**(3)**

(c) (i) Study Figure 9a.

Identify the feature shown at X.

**(1)**

(ii) Study Figures 9b and 9c.

Explain **two** reasons for the link between sea surface temperatures and cyclone distribution.

**(4)**

1 .....

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2 .....

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(d) Evaluate different responses to the **environmental** impacts of tropical cyclones in a named developed country.

**(8)**

Named **developed** country .....

**(Total for Question 6 = 23 marks)**

**TOTAL FOR SECTION B = 30 MARKS**

## SECTION C

### Ecosystems, Biodiversity and Management

**Spelling, punctuation, grammar and specialist terminology will be assessed in Question 7(d)(iii).**

**7** Biodiversity is influenced by the interrelationship and interaction of biotic and abiotic factors.

(a) Define the term 'abiotic'.

**(1)**

.....

.....

(b) Study Figure A below.

(i) Complete the line graph in Figure A using data from the table below.

**(3)**

| Height above sea level (m) | Vegetation type (ecosystem) |
|---|---|
| 0–900 | Tropical Rainforest |
| 900–1800 | Temperate Forest |

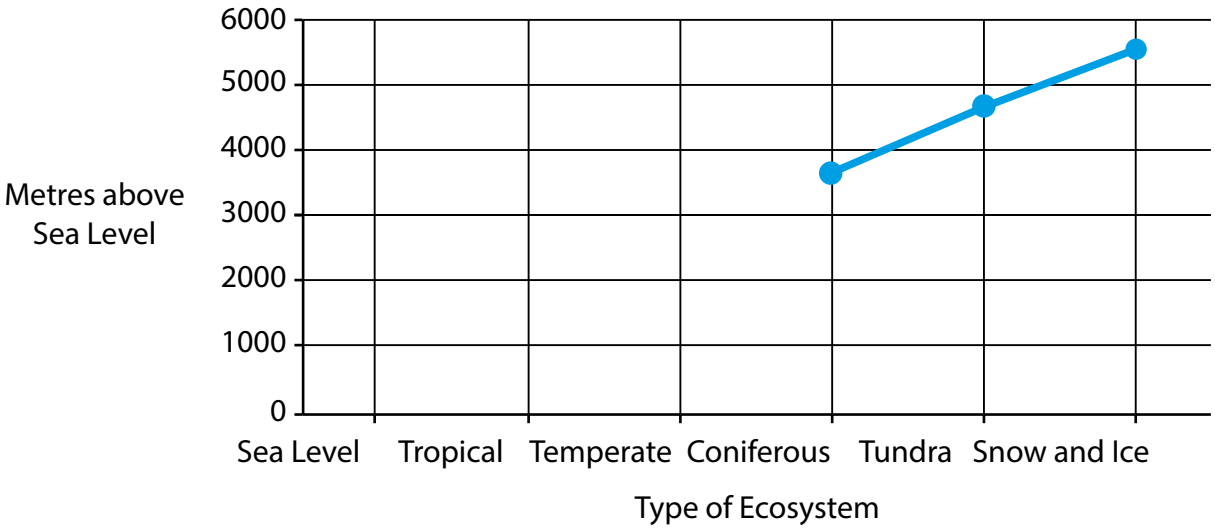


**Figure A**

**Changes in large ecosystems up a mountain in South America**

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(ii) With reference to the line graph in Figure A, explain how changes in altitude affect the distribution of ecosystems.

**(4)**

(c) Moorland is one of the UKs main terrestrial ecosystems.

(i) State **two** other UK terrestrial ecosystems.

**(2)**

(ii) Study Figure 10 in the Resource Booklet which shows an area of moorland in the UK.

Identify the feature at 075887.

**(1)**

(iii) Give the direction from the farm in 1189 to the nature reserve in 0887.

**(1)**

(d) (i) State **two** goods or services provided by tropical rainforests.

**(2)**

1 .....

.....

2 .....

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(ii) Explain **two** ways in which plants have adapted to living in a tropical rainforest.

**(4)**

1 .....

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2 .....

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(iii) Study Figure 11 in the Resource Booklet.

Explain why there are differences in these nutrient cycles.

**(4)**

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**In this question, 4 of the marks awarded will be for your spelling, punctuation and grammar and for your use of specialist terminology.**

*(iv) Assess the following statement.

*Climate change presents a greater threat to tropical rainforests than it does to deciduous woodlands.*

**(12)**

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

**(Total for Question 7 = 34 marks)**

**TOTAL FOR SECTION C = 34 MARKS**
**TOTAL FOR PAPER = 94 MARKS**

## Pearson Edexcel Level 1/Level 2 GCSE (9–1)

# Geography A

## Paper 1: The Physical Environment

Sample assessment material for first teaching September 2016

**Resource Booklet**

Paper Reference

**1GA0/01**

**Do not return the Resource Booklet with the question paper.**

*Turn over* ▶

S50253A

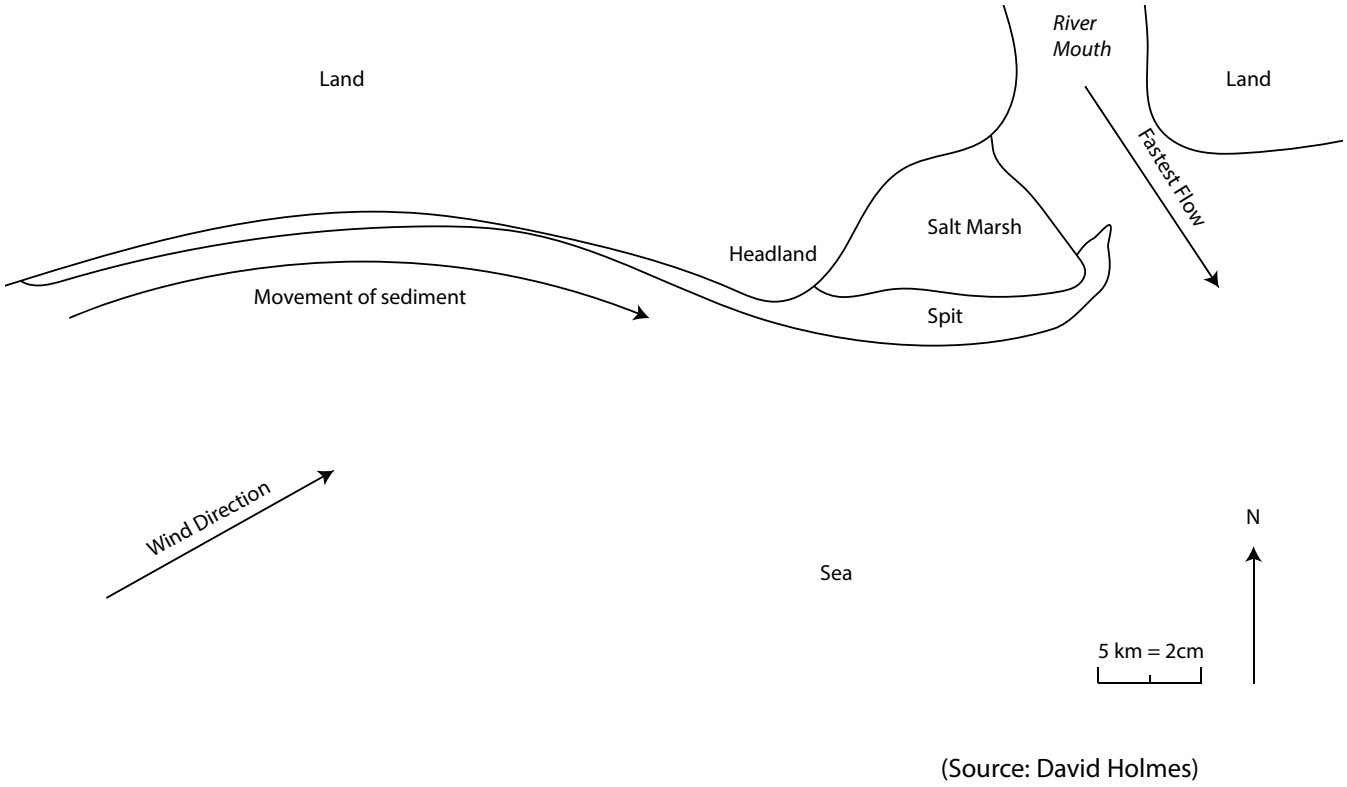


PEARSON

(Source: thetimes.co.uk/tto/multimedia/archive/00361/117597242_361456c.jpg)

**Figure 1**

**A diagram showing a stretch of coastline in Southern England**




(Source: David Holmes)

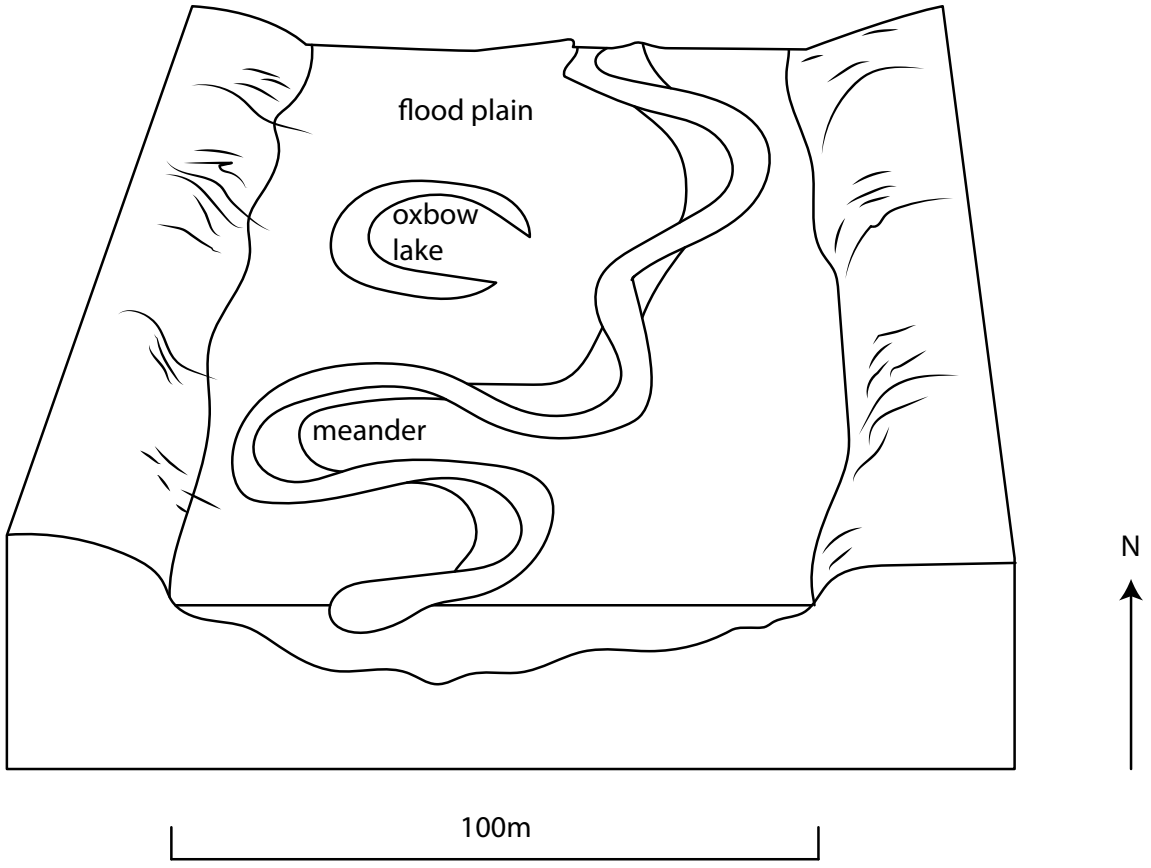
**Figure 2**

**A diagram showing the formation of a spit**

(Source: David Holmes)

**Figure 3**

**A diagram showing a stretch of river in Shropshire, England**




(Source: David Holmes)

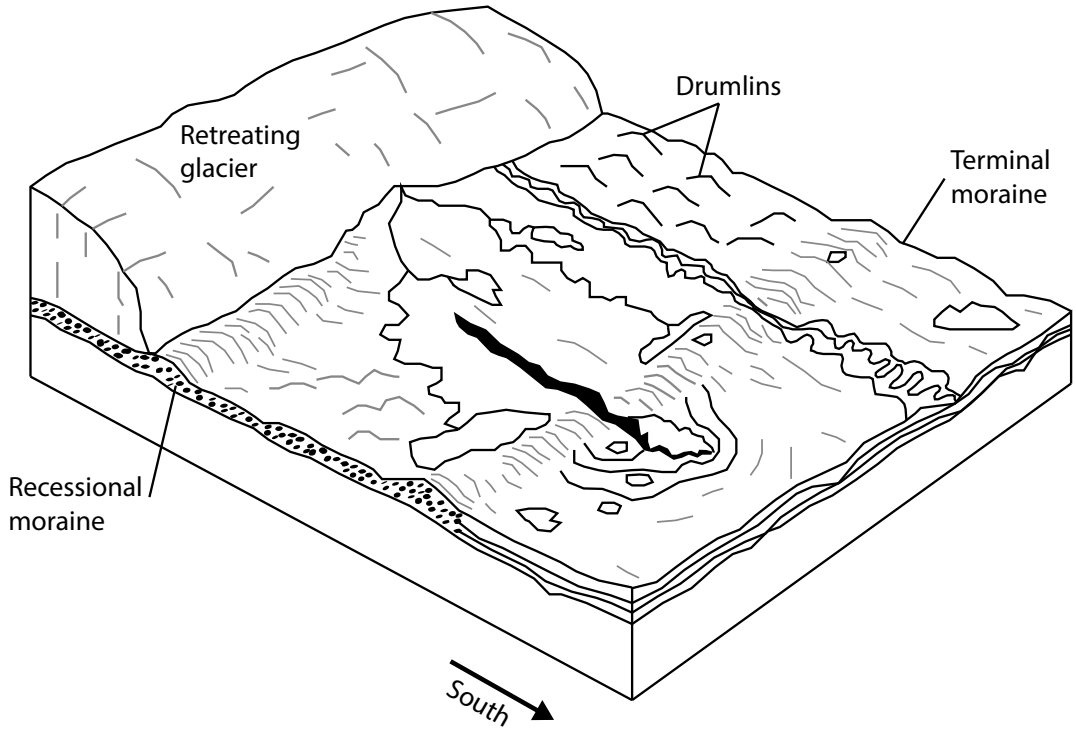
**Figure 4**

**A diagram showing the formation of an oxbow lake**

(Source: David Holmes)

**Figure 5**

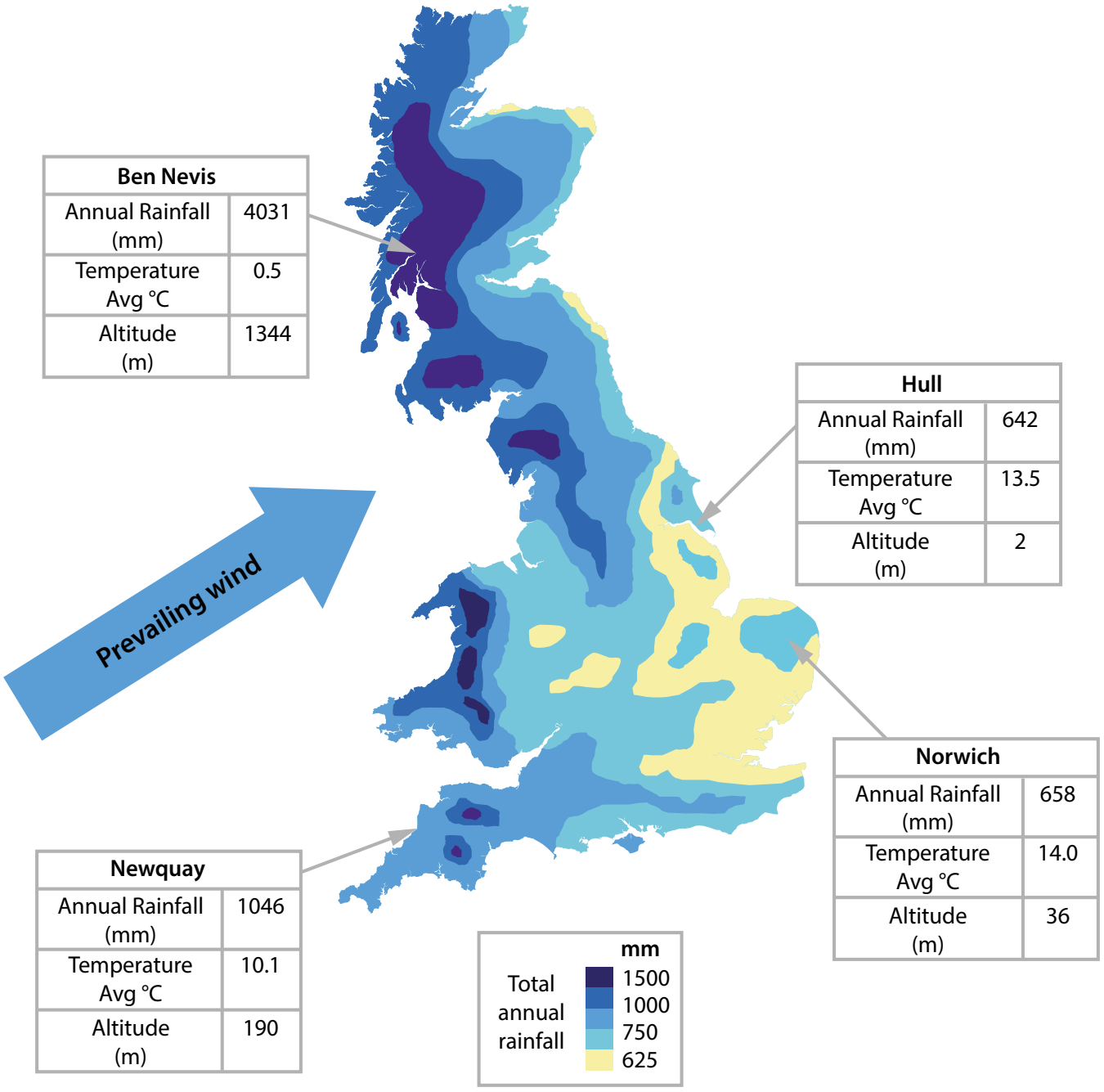
**A glacial landscape in North Wales**




(Source: Andrew Childe)

**Figure 6**

**A diagram showing the formation of a drumlin**




(Source: ARIC's Atmosphere, Climate & Environment Information Programme)

**Figure 7**

**Map showing rainfall and other climatic variables for locations in the UK**

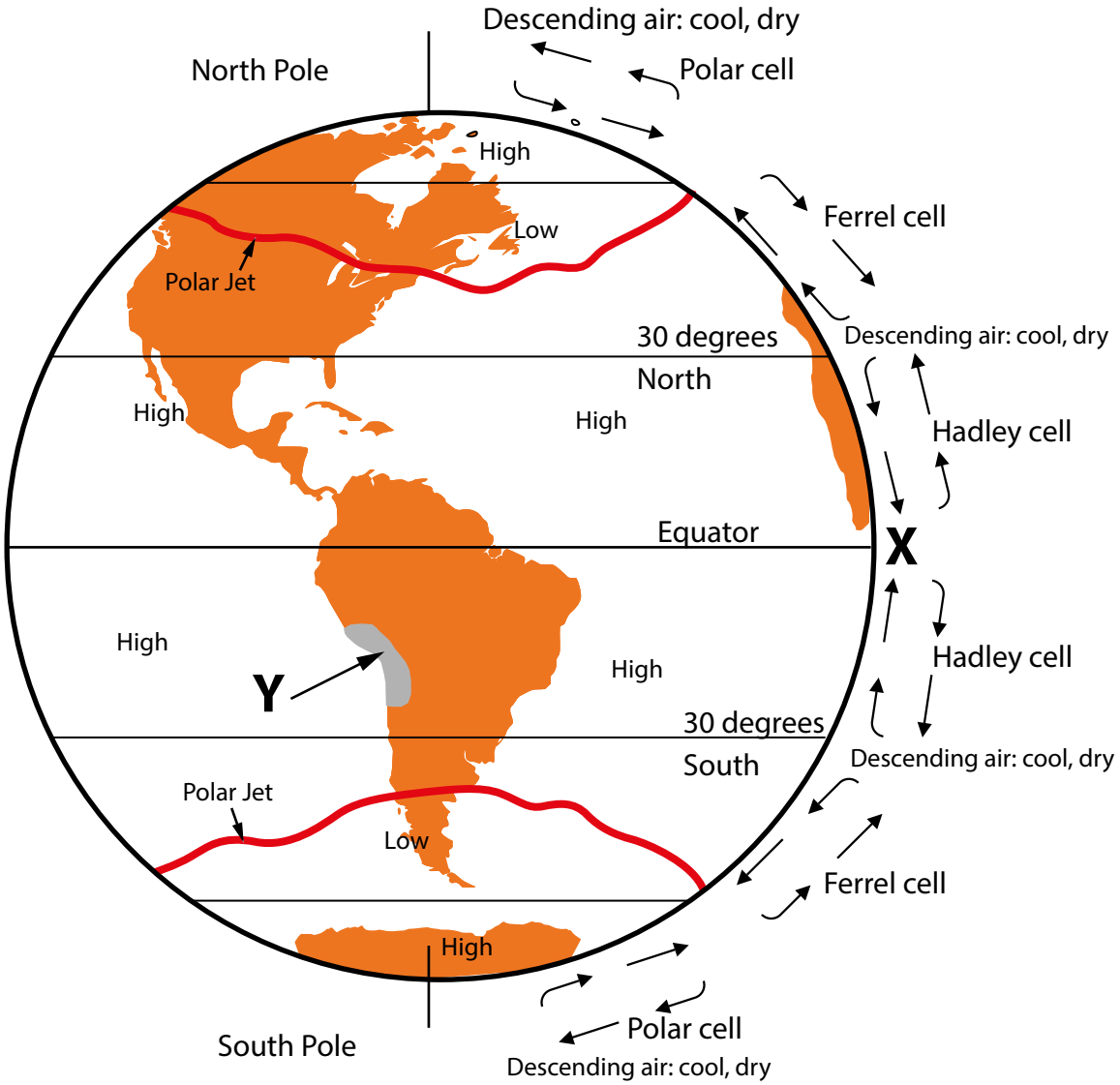


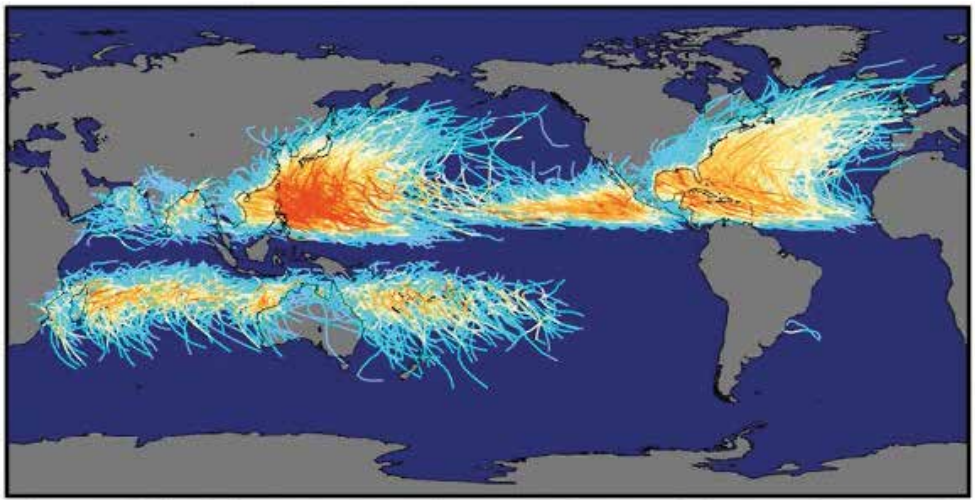

**Figure 8**

**Global atmospheric circulation**


(Source: © Neo Edmund/Shutterstock)

**Figure 9a**

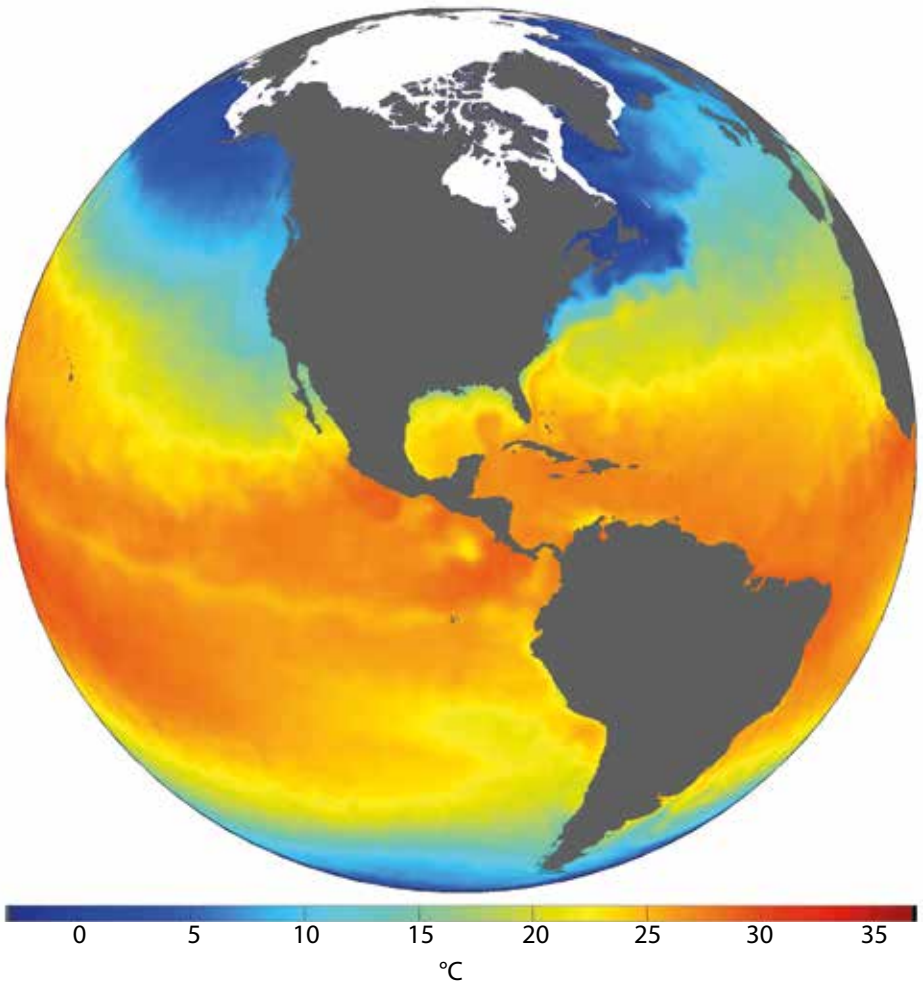
**Satellite image of a cyclone**



(Source: © NASA)

**Figure 9b**

**Map showing the global distribution of cyclones' tracks**




(Source: © National Oceanic and Atmospheric Administration and the Department of Commerce)

**Figure 9c**

**Global sea surface temperatures in °C**

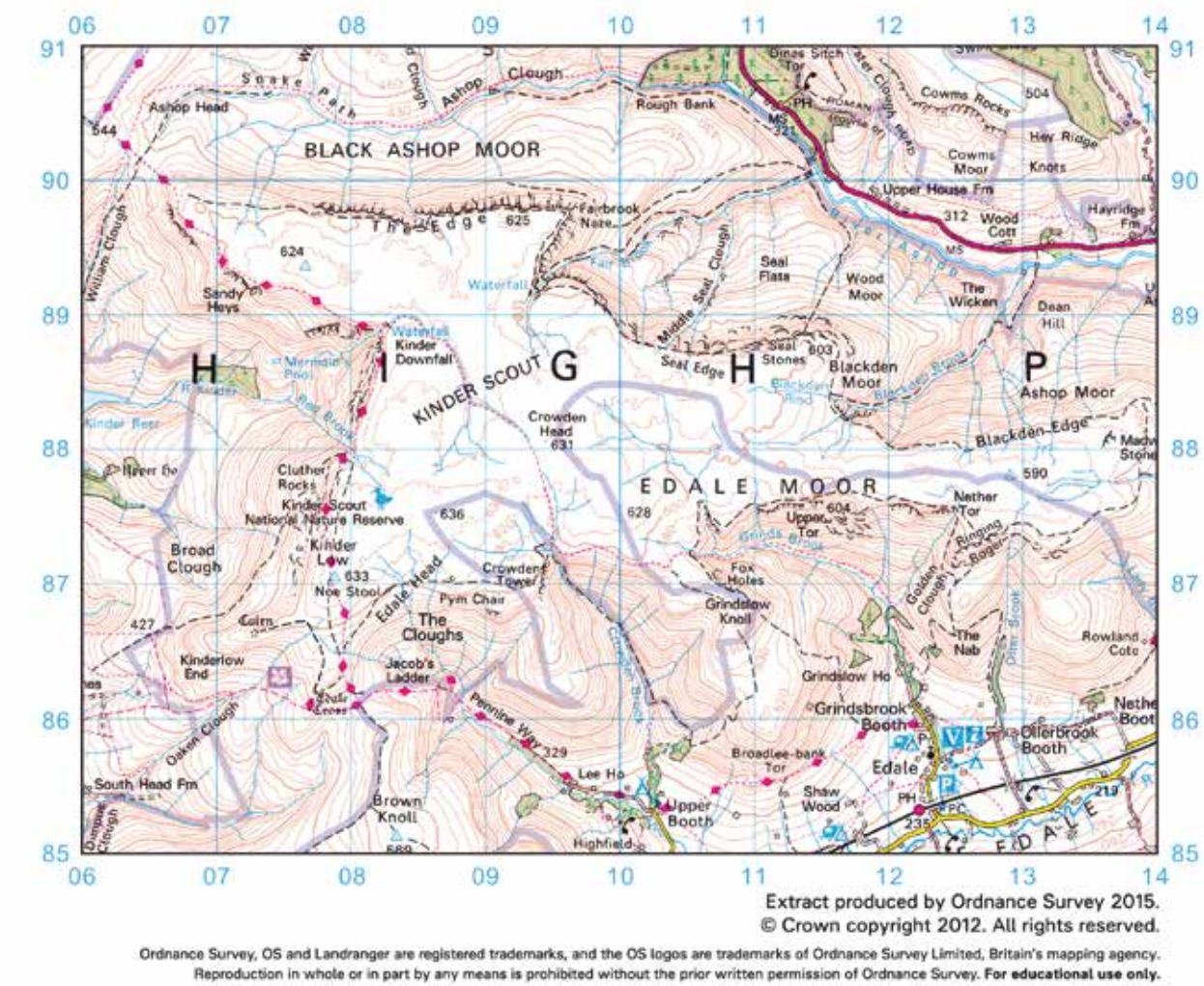
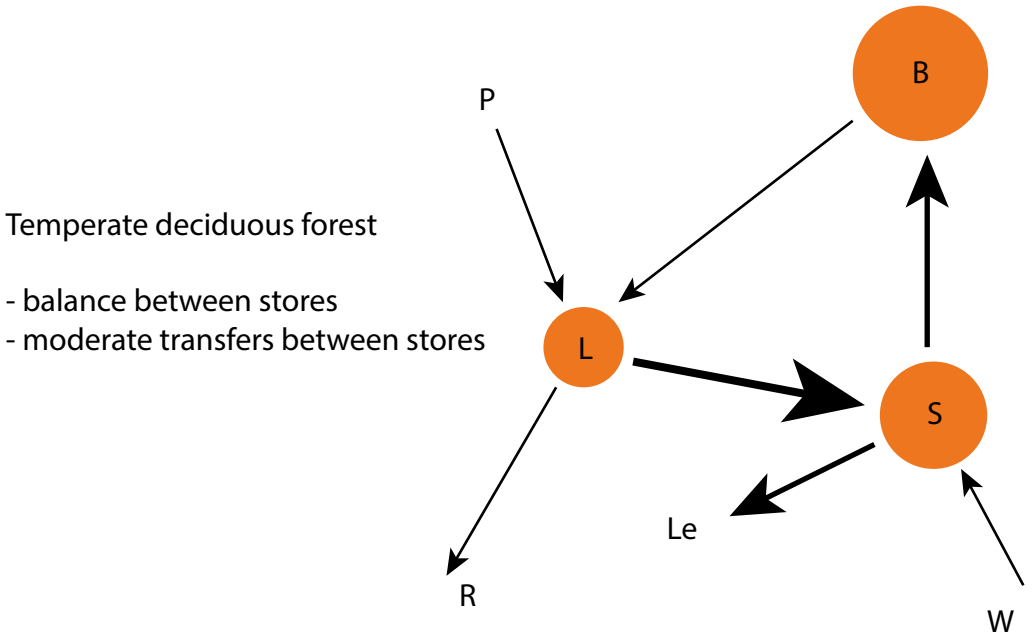



**Figure 10**

**OS 1:50,000 map of Edale Moor, the Peak District, England**



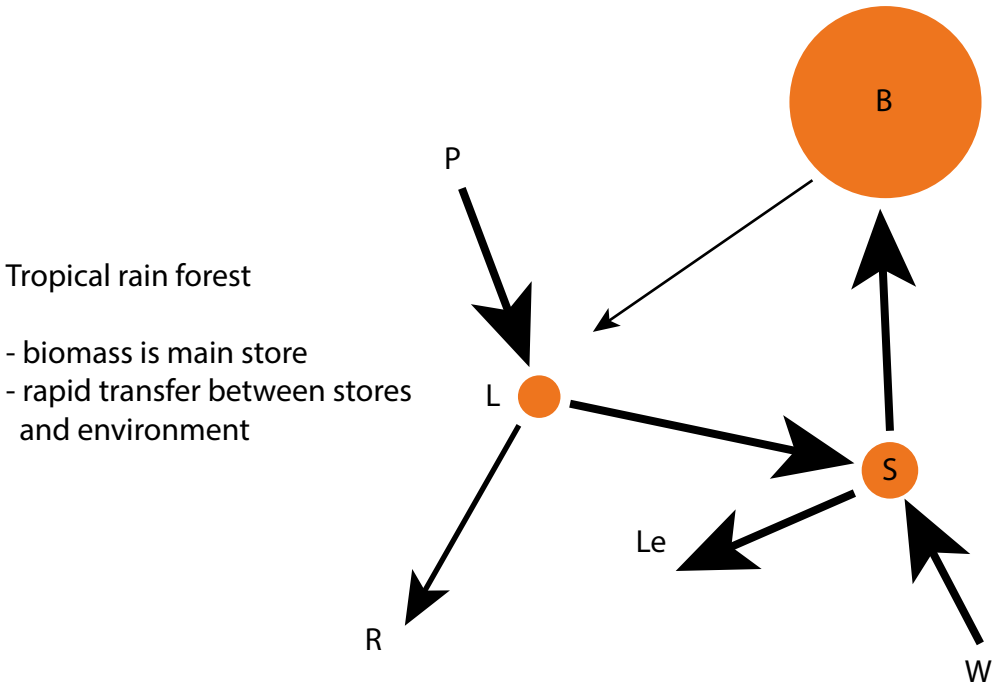




**Figure 11**

**Nutrient cycle models**

## Paper 1 Mark scheme

| Question number | Answer | Mark |
|---|---|---|
| **1(a)(i)** | D | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(a)(ii)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Rocks formed in layers (1)<br><br>Idea of compaction/cementation (1)<br><br>Oldest rocks are at the bottom/youngest at the top (1)<br><br>May contain fossils of plants and/or animals (1)<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(b)** | B | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(c)(i)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Forestry (1)<br><br>Urbanisation/settlement (1)<br><br>Deforestation (1)<br><br>Building of roads/rail (1)<br><br>Reject farming/agriculture<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(c)(ii)** | Award 1 mark for farming activity and a further one mark for effect on the landscape, up to a maximum of 2 marks:<br><br>Farming clears the natural surface vegetation/trees (1), which can result in a mono-culture and/or artificial landscape (1)<br><br>Farming can plant the same crop over and over (1) which can give landscapes the same appearance (1)<br><br>In some parts of the UK, farming has led to a loss of hedgerows (1) as farmers removed them to improve efficiency of farming (1)<br><br>Farming has led to sheep in upland landscapes (1) which has created a deforested and grazed/grassy landscape (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(i)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Stack (1)<br><br>Cliff (1)<br><br>Wave cut platform (1)<br><br>Bay (1)<br><br>Arch (1)<br><br>Headland (1)<br><br>Reject depositional features<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(ii)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Root action is where roots grow into the ground (1)<br><br>Chelation/influence of soil acid (1)<br><br>Action of animals such rabbit burrowing (1)<br><br>Reject erosional processes<br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(iii)** | Award 1 mark for point about rip rap and a further one mark for how this protects coastal landscapes, up to a maximum of 2 marks:<br><br>Large (manmade) boulders are placed along the cliff line (1) which protect the coast by acting as a sea wall (1)<br><br>The gaps between the rocks allow water through (1), therefore slowly dissipating energy (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Indicative content |
|---|---|
| 2(a)(iv) | **AO3 (4 marks)/AO4 (4 marks)**<br>**A03**<br>• Wave direction is determined by the prevailing wind resulting in the wash proceeds up the beach at an angle to the coast.<br>• Sediment is moved along the coast. The swash pushes sediment up the beach, its direction determined by the prevailing wind. The back wash causes material to move back down the beach at right angles to the coast.<br>• The swash/back wash process produces a zig zag movement of sediment along the coast. Over time, large amounts of material can be transported along the beach.<br>• Where the coast changes direction, material is deposited offshore. Over time, there is a buildup of material off the coast – this forms a spit. Long-shore drift is a dominant process in maintenance of the spit.<br>• Once material moves to the east of the headland, there is a lower energy environment, allowing deposition to occur, which encourages the deposition of fine materials resulting in the creation of mudflats/a salt marsh area.<br>• Over time, the spit can develop a hook/become recurved and its shape is influenced by both river currents/tidal movement and localised wind in the estuary mouth.<br>• The estuary is important in the diagram as it limits the growth of the spit due to the deep water and the currents.<br>• Transportation occurs until a change in direction of the coastline.<br>**A04**<br>• The prevailing wind is south-westerly.<br>• The long shore drift is moving west to east.<br>• There is evidence of a narrow strip of beach/sand in front of the mainland (before the headland).<br>• There is fast water flowing out of the river mouth in a north south direction.<br>• The landform is a recurved spit, which curves towards the north/mouth of river estuary.<br>• Behind the spit there is a build-up of sediment forming a salt marsh area. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| **Level 1** | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)<br>• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4) |
| **Level 2** | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4) |
| **Level 3** | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3)<br>• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **3(a)(i)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>River cliff (1)<br><br>Slip off slope/point bar (1)<br><br>Meander (1)<br><br>Flood plain (1)<br><br>**Accept any other appropriate response**. | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(a)(ii)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Carbonation/acid rain (1)<br><br>Dissolution/solution weathering (1)<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 3(a)(iii) | Award 1 mark for point about channelisation and a further one mark for how this protects river landscapes, up to a maximum of 2 marks:<br><br>Making the channel wider or deeper (1) increasing the capacity of the river to hold water (1)<br><br>Where a channel is straightened/meanders are removed (1) so water can pass through the area more quickly (1)<br><br>Concreting of beds and banks (1) reducing friction/increasing velocity/reducing flood risk to that area (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Indicative content |
|---|---|
| 3(a)(iv) | **AO3 (4 marks)/AO4 (4 marks)**<br>**AO3**<br>• Illustrates the dynamic process of erosion, transport, and deposition occurring over the length of a river – though in the formation of an oxbow lake, erosion might be seen as the dominant factor.<br>• Material is eroded from the outside of the meander creating a river cliff – the water travels at greater speed on the outside bend and has more energy for erosion. This process also leads to the provision of sediment in the river.<br>• In the lower-energy environments on the diagram, deposition will take place, e.g. on the inside of meanders where the water level is shallow, friction is high and deposition occurs forming point bars.<br>• The high-energy areas of the meander (erosional areas) were extended with the result of a narrowing of the neck of the meander. Subsequently, high flow/flood broke through the neck of the meander leaving a body of water cut off, forming an oxbow lake.<br>**AO4**<br>• The river flows from north to south.<br>• There are alternate areas of erosion (river cliffs) and deposition (point bars).<br>• The river meanders across the flood plain.<br>• The flood plain is approximately 100 m wide.<br>• The diagram indicates differential rates of erosion and deposition, with the greatest amount of erosion taking place on the outside of meanders,<br>• There is a wide valley floor with hills/cliffs/steep valley sides on either side,<br>• There is a body of water separate from the main channel, an oxbow lake. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)<br>• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3)<br>• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **4(a)(i)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Corrie/cirque/cwm (1)<br><br>Glacial trough (u-shaped valley) (1)<br><br>Arête (1)<br><br>Tarn/glacial lake (1)<br><br>Reject Truncated spurs, Roche Moutonnée<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(a)(ii)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Freeze thaw weathering (1)<br><br>Exfoliation – extreme changes in temperature (1)<br><br>Reject answers that describe chemical or biological weathering.<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(a)(iii)** | Award 1 mark for point about nature/type of tourism and a further one mark for effect on glaciated landscape, up to a maximum of 2 marks:<br><br>Climbers (1) can cause rock to become loose as they put supports on the cliffs (1)<br><br>Walkers (1) can lead to soil erosion along upland footpaths with high footfall (1)<br><br>Walkers leave waste in upland areas (1), which does not decompose in cold conditions (1)<br><br>Reject answers that are about how the upland landscape affects human activity<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Indicative content |
|---|---|
| 4(a)(iv) | **AO3 (4 marks)/AO4 (4 marks)**<br>**AO3**<br>• An important process from the diagram is ice stagnating and melting.<br>• This is due to a change in the glacial mass balance, ie differences inputs and outputs to the system.<br>• The drumlin is made up of rock eroded by the glacier further upstream.<br>• Ancient glaciers would have carried debris, which would have accumulated at the base.<br>• Melting ice at the base of the glacier causes material to deposited, as there is too much to be carried.<br>• Drumlins are formed underneath the glacier so are formed behind the terminal moraine.<br>• Drumlins build up over time, layers of glacial till and rock.<br>• Terminal moraines mark the maximum extent of the glacier at a given time.<br>• The long axis of drumlins aligns with the flow of glacial ice.<br>• As the glacial continues to flow, it reshapes the drumlin with a steep 'stoss end' and gradually-falling 'lee slope' in front.<br>**AO4**<br>• Ice moved from north to south.<br>• At the end of the valley glacier is a terminal moraine.<br>• At the base of the valley glacier is an area of rich debris rock.<br>• The drumlin is located further north of the terminal moraine. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)<br>• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3)<br>• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(i)** | Award 1 mark for one of the following, maximum 1 mark:<br><br>Orbital changes/Milankovitch cycles (1)<br><br>Solar variation/sunspot activity or cycles (1)<br><br>Volcanic eruption (1)<br><br>Reject human causes such as the EGE/global warming.<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(ii)** | Award 1 mark for each correctly identified source of evidence, up to 2 marks:<br><br>Ice cores (1)<br><br>Pollen records (1)<br><br>Tree rings (1)<br><br>An example of a historical sources (e.g. painting) (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(iii)** | Award 1 mark for the calculation of the correct answer<br>= 13.5° | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(iv)** | Award 1 mark for point about prevailing wind and a further one mark for each effect on the climate of the UK, up to a maximum of 3 marks.<br><br>Map shows larger amounts of precipitation in the west (1) because the prevailing wind brings moist air from the south west (1), which rises over land and condenses (1).<br><br>Map shows locations in the east have higher temperatures (1), which could be because they are not facing the prevailing wind (1) and therefore are sheltered by the higher altitudes in the west (1.<br><br>**Accept any other appropriate response** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(a)(i)** | D | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(a)(ii)** | B | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(a)(iii)** | Award 1 mark for point about atmospheric circulation and a further one mark for its contribution to climatic conditions, up to a maximum of 2 marks.<br><br>The air mass originates from an area of high pressure (around sub equatorial South America) (1) which brings dry/hot weather (1) so there is a lack of rainfall (1).<br><br>The high pressure conditions (1) lead to cloudless skies/warm temperatures (over 20°) (1) because of the lack of condensation (1).<br><br>**Accept any other appropriate response** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(b)(i)** | Award 1 mark for point about human cause of drought and a further one mark for explanation of this, up to a maximum of 2 marks.<br><br>De-forestation leads to a reduced tree cover (1) which means that there is less interception (1).<br><br>Intensification of farming (1) may involve unsustainable use of irrigated water in crop production (1).<br><br>Construction of large reservoirs (1) may cause drought downstream by reducing the flow of water (1).<br><br>Reject natural causes of drought.<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(b)(ii)** | Award 1 mark for a basic impact, and a further one mark expansion up to a maximum three marks.<br><br>Domestic water supply shortages (1), leading to hosepipe bans/lack of water for swimming pools (1) as the need for water conservation increases (1).<br><br>Water supply for recreational purposes is restricted (1), e.g. there is not enough water to irrigate golf courses (1) which could result is a loss of business (1).<br><br>Water supply for farming is reduced (1), making it harder to irrigate the land and grow crops (1), which might push up food prices for consumers (1).<br><br>**Accept any other appropriate response.** | **(3)** |

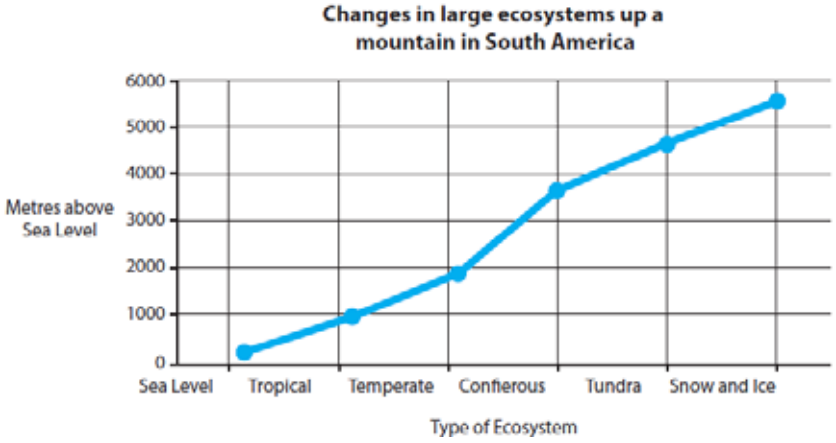
| Question number | Answer | Mark |
|---|---|---|
| **6(c)(i)** | Eye/eye wall<br><br>Reject centre, middle, hole. | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **6(c)(ii)** | Award 1 mark for point about sea surface temperature and a further one mark for how this links to cyclone distribution, up to a maximum of 4 marks.<br><br>Figure 9c shows warm sea surface temperatures are near the equator (1) which corresponds with the pattern of hurricanes forming around the equator in Figure 9b (1).<br><br>Figure 9c shows warm sea surface temperatures of over 25 °C to the east of South America (1), which would create the pattern of cyclones shown to the east of Central and North America (1).<br><br>Figure 9b shows cyclones only form just north or south of the equator only, but not on the equator (1) where there is rotation of air because of the Coriolis effect (1).<br><br>Pattern of cyclones on Figure 9b shows they do not normally form over land/in colder seas with surface temperatures much less than 25 °C (1), which is because they need the warm water as a source of latent heat of energy (1).<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Indicative content |
|---|---|
| 6(d) | **4 Marks for AO2 / 4 marks for AO3**<br><br>**AO2**<br>• Potential environmental impacts include flooding, damage to environment from industrial damage, contaminated ground water/water supplies, soil erosion leading to crop damage/failure.<br>• Different groups of people respond to the environmental impacts, including individuals, organisations and local governments/the national government.<br>• Individuals can construct makeshift flood defenses to prevent their land from being flooded (e.g. sandbags).<br>• Local governments ensure that education is provided and messages are given to locals to warn residents about potential hazards such as flooding and contaminated drinking water supplies.<br>• Organisations identify hazard-prone areas at risk of flooding/environmental damage.<br>• The national government ensures that relevant monitoring bodies produce the necessary information in prediction/forecasting the weather.<br>• The national government may mobilise military/emergency aid resources to prepare flood defenses/respond to contamination/protect crops and wildlife.<br><br>**AO3**<br>Evaluation will depend on specific case study but may include:<br><br>• Because the country is developed, the economic development/wealth and technology provide access to more accurate information about potential cyclone events and more advanced ways to deal with the environmental impacts.<br>• Individual responses have a relatively small impact on reducing environmental damage. They can protect their own land/environment but not much beyond that.<br>• The relative value of an organisation's response to environmental impacts will depend on the organisation's priorities. Some environmental groups may focus on environmental impacts (e.g. wildlife protection) but other aid organisations may focus on social impacts (safety, food, shelter).<br>• National governments can have the biggest impact because they have the resources, capacity and authority to respond to environmental effects on a large scale.<br>• National governments can collaborate with other national governments in providing aid, which enables them to respond to environmental impacts that cross national borders. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) |

| Question number | Answer | Mark |
|---|---|---|
| 7(a) | Abiotic refers to the non-living component of an ecosystem<br><br>Reject living components.<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 7(b)(i) | Award 1 mark for each correct plot (2 x 1)<br>Award 1 mark for joining dots together (1)<br>  <br> | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| 7(b)(ii) | Award 1 mark for interpretation of the line graph and a further mark for a link to the distribution of ecosystems, up to a maximum of 2 marks each.<br><br>Tundra can exist only above 4000 m (1) because other trees cannot grow in the thin soil at the top of a mountain (1).<br><br>The line graph shows the steepest increase is between 1900 and 3800 m (1), which means that coniferous forests can exist in a greater range of altitude/temperature than the other ecosystems shown on Figure A (1).<br><br>Tropical can exist only under 900 m above sea level (1) because it cannot survive in the colder temperatures associated with higher altitude (1).<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(c)(i)** | Award 1 mark for the following, up to a maximum of 2 marks:<br><br>Heathlands (1)<br><br>Woodland (1)<br><br>Wetlands (1) | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(c)(ii)** | Mermaid's Pool/lake/tarn | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(c)(iii)** | South west/SW | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(d)(i)** | Award 1 mark for the following, up to a maximum of 2 marks:<br><br>Foodstuffs or specific examples (1)<br><br>Medicines or chemical/genetic material for medicines (1)<br><br>Timber/wood (1)<br><br>Recreation or other cultural value (1)<br><br>**Accept any other appropriate response.** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(d)(ii)** | Award 1 mark for identification of the adaptation and a further one mark for an explanation of the adaptation, up to a maximum of 4 marks.<br><br>Drip tips (1) to remove excess water in conditions of over 2000mm of precipitation (1).<br><br>Buttress roots (1) to stabilise the trees as they increase in height (1).<br><br>Waxy leaves (1) to stop water infiltrating into leaf and rotting it (1).<br><br>Tall straight tree trunks (1) to grow straight up towards the light to out compete other species (1).<br><br>Epiphytes sink roots into a host plant (1) so they do not need to sink roots to the ground (1).<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Answer | Mark |
|---|---|---|
| **7(d)(iii)** | Award 1 mark for identification of the difference and a further one mark for an explanation of this point, up to a maximum of 4 marks.<br><br>**Biomass store** – bigger in TRF (1) as more nutrients are held in the vegetation because of the high biodiversity in the system (1) so there are more available nutrients (1), as there is more photosynthesis, meaning a greater amount of productivity (1).<br><br>**Soil store** – smaller in TRF (1) – as the nutrient uptake is higher in TRF and there is greater amount of leaching due to more rainfall in TRF (1).<br><br>**Litter store** – smaller in the TRF (1) as the rate of decomposition is much greater because of the high humidity (1).<br>Arrows are generally larger in TRF as the rate of nutrient recycling is much faster between stores (1) due to climatic and biodiversity, meaning that transfer is more preferable in TRF (1).<br><br>Accept comments based on different-sized stores/arrows in the temperate deciduous forest. | **(4)** |

| Question number | Indicative content |
|---|---|
| 7(d)(iv) | **AO2 (4 marks)/AO3 (4 marks)**<br><br>**AO2**<br>• Climate change will have an impact on soil, temperature, rainfall, and weather events, which could threaten tropical rainforests' and deciduous woodlands' structure, function and biodiversity.<br>• Tropical rainforest structure will be threatened by rising sea levels caused by climate change.<br>• Tropical rainforest biodiversity could be threatened by animals migrating because they cannot adapt to the changing climate of their current habitat.<br>• Deciduous woodland structure could be threatened by nutrient and moisture depletion in soils, leading to reduced tree growth.<br>• Deciduous woodland biodiversity could be threatened, as increased numbers of pests are introduced into ecosystems through migration.<br><br>**AO3**<br>• Threats to tropical rainforests and deciduous woodlands are naturally similar, since climate change may bring an increase in temperature and a decrease in moisture, which will have common effects on vastly different ecosystems.<br>• Attempts to mitigate against climate change threats, for example through sustainable management, can vary significantly for tropical rainforests and deciduous woodlands (judgements will depend on case studies).<br>• A specific ecosystem's natural ability to adapt to climate change can vary, which means impacts of climate change will be 'threats' only to ecosystems that cannot adapt.<br>• Climate change will not have the same impact everywhere (e.g. some areas may get colder/wetter rather than hotter), so the degree of threat is dependent on the impacts in the given area. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No rewardable material. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) |

| **Marks for SPGST** | | |
|---|---|---|
| **Performance** | **Marks** | **Descriptor** |
| SPaG 0 | 0 | *No marks awarded*<br>• Learners write nothing.<br>• Learner's response does not relate to the question.<br>• Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning. |
| SPaG 1 | 1 | *Threshold performance*<br>• Learners spell and punctuate with reasonable accuracy.<br>• Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.<br>• Learners use a limited range of specialist terms as appropriate. |

| | | |
|---|---|---|
| SPaG 2 | 2–3 | *Intermediate performance*<br>• Learners spell and punctuate with considerable accuracy.<br>• Learners use rules of grammar with general control of meaning overall.<br>• Learners use a good range of specialist terms as appropriate. |
| SPaG 3 | 4 | *High performance*<br>• Learners spell and punctuate with consistent accuracy.<br>• Learners use rules of grammar with effective control of meaning overall.<br>• Learners use a wide range of specialist terms as appropriate. |

Write your name here

| Surname | Other names |
|---|---|
| | |

**Pearson Edexcel**
**Level 1/Level 2**
**GCSE (9–1)**

Centre Number | | | | | |

Candidate Number | | | | |

# Geography A

## Paper 2: The Human Environment

Sample assessment material for first teaching
September 2016
**Time: 1 hour 30 minutes**

Paper Reference
**1GA0/02**

**You must have:**
Resource book, calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A and Section B answer all questions.
- In Section C answer all of question 3 and **one** question from questions 4 and 5.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working out** with **your answer clearly identified** at the **end of your solution**.

### Information

- The total mark for this paper is 94.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are questions where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation, grammar and use of specialist terminology and grammar, as well as the clarity of expression.*
- The marks available for spelling, punctuation, grammar and specialist terminology are clearly indicated.

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

*Turn over* ▶

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## SECTION A

## Changing Cities

**Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.**

**1** The causes and effects of urbanisation can vary between countries at different levels of development.

(a) Study Figure 1a in the Resource Booklet.

Identify the country with the most urban areas.

**(1)**

- ☒ **A** Germany
- ☒ **B** Portugal
- ☒ **C** Republic of Ireland
- ☒ **D** Sweden

(b) (i) Define the term urbanisation.

**(1)**

.....

.....

(ii) State **one** global trend in urbanisation over the past 50 years.

**(1)**

.....

.....

(c) Study Figure 1b in the Resource Booklet.

(i) Identify two pieces of evidence that show this area has experienced deindustrialisation.

**(2)**

Evidence 1

.....

.....

Evidence 2

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(ii) Define the term deindustrialisation.

**(1)**

(iii) State one social impact of deindustrialisation.

**(1)**

(iv) Using just the photograph in Figure 1b to investigate deindustrialisation would be limiting.

Give **three** changes that could be made to this investigation that would help prove that other areas have been affected by deindustrialisation.

**(3)**

Analyse Figure 1c in the Resource Booklet.

(d) (i) Identify the urban area that received the most migrants from London.

**(1)**

- ☒ **A** Manchester
- ☒ **B** Newcastle
- ☒ **C** Norwich
- ☒ **D** Southend

(ii) State two possible impacts on London of the migration pattern shown in Figure 1c.

**(2)**

1 .....

.....

2 .....

.....

Study Figure 1d, the Ordnance Survey (OS) map extract in the Resource Booklet.

(e) (i) What is the four-figure grid reference for the central business district (CBD) in the city of York?

**(1)**

- ☒ **A** 5953
- ☒ **B** 6050
- ☒ **C** 6051
- ☒ **D** 6251

(ii) State the distance, along the B1224, between the roundabout at 559515 and the church with spire at 528515.

**(1)**

..... km

(iii) Suburbanisation has taken place in many UK cities.

Woodthorpe is a suburb of York in grid square 5749.

Suggest **two** reasons why suburbanisation has taken place in this area.

**(4)**

1 .....

.....

.....

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2 .....

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(f) Explain **one** impact on the Central Business District (CBD) of recent changes in retailing.

**(3)**

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(g) You have studied a major UK city and a major city in a developing or emerging country.

Evaluate which of these cities have been most successful in improving the quality of life for its people.

**(8)**

**(Total for Question 1 = 30 marks)**

**TOTAL FOR SECTION A = 30 MARKS**

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## SECTION B

## Global Development

**Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.**

**2** The characteristics and reasons for development vary around the world.

(a) Study Figure 2a in the Resource Booklet.

(i) Define the term GDP (Gross Domestic Product)

**(1)**

.....

.....

(ii) Calculate the percentage increase in GDP for India between 2000 and 2014.

**(1)**

☒ **A** 100%

☒ **B** 150%

☒ **C** 300%

☒ **D** 400%

(iii) Calculate the mean GDP for the countries on Figure 2a in 2014.

Answer to one decimal place.
Show your workings in the space below.

**(2)**

..... US$ billion

(iv) State two components that form part of the Human Development Index (HDI).

**(2)**

1 .....

.....

2 .....

.....

Study Figure 2b in the Resource Booklet.

(b) The following statements describe different types of development project.

Identify the **two** statements which describe the type of project shown in Figure 2b.

**(2)**

- ☒ **A** The project relies on intermediate technology
- ☒ **B** Local people are responsible for designing the project
- ☒ **C** Large amounts of money are borrowed to pay for the project
- ☒ **D** The project has limited environmental impact
- ☒ **E** The project brings national prestige to the country

(c) Top down projects are often controversial.

(i) Explain **one** advantage and **one** disadvantage of top-down development projects in the promotion of development.

**(4)**

Advantage

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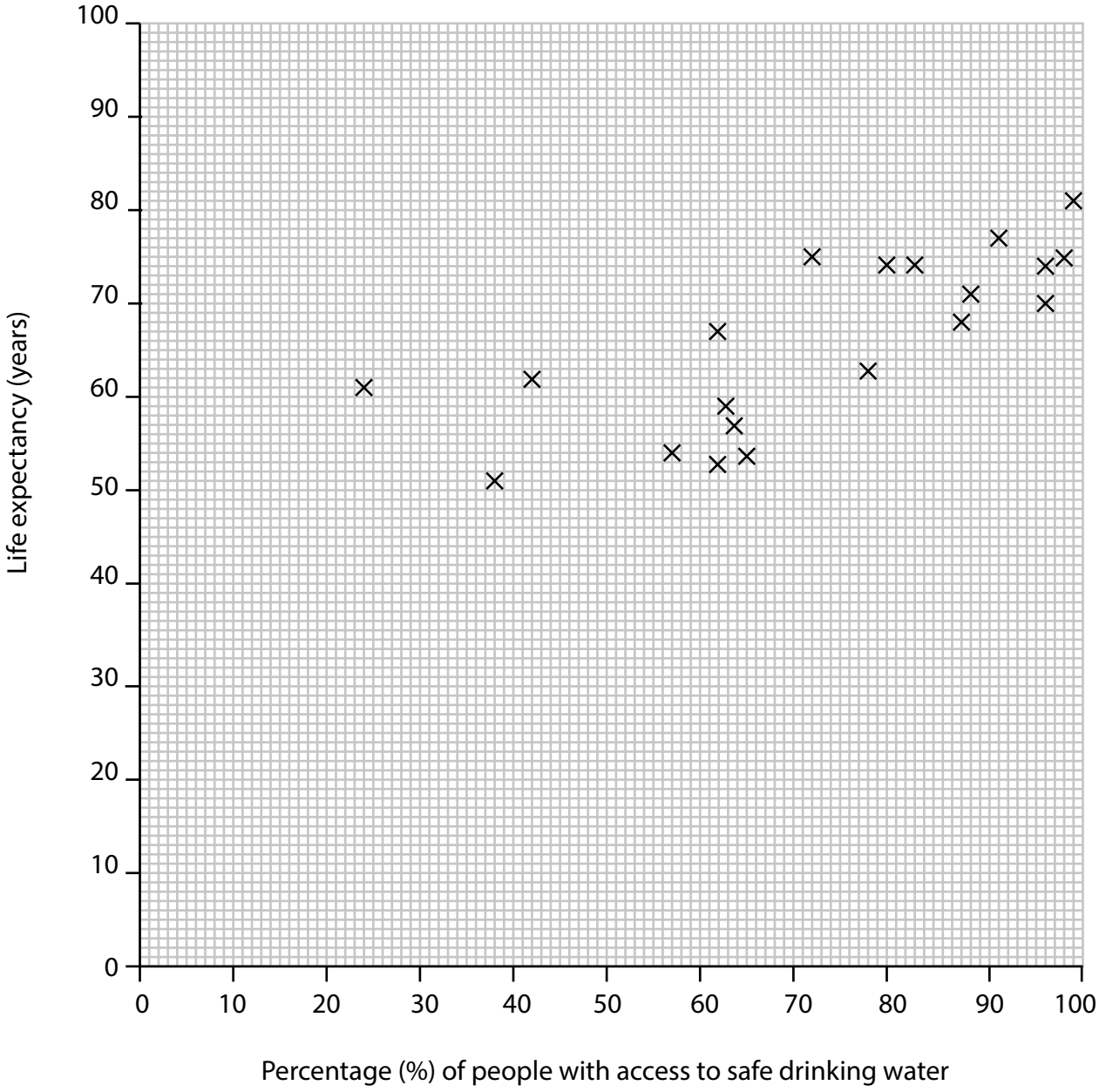
Disadvantage

(iii) One form of information that could be used to investigate the impact is websites.

Describe **one** technique that could be chosen to process this information.

**(2)**

(d) Study Figure A below.




(Source: Nationmaster)

**Figure A**

**Life expectancy and access to safe drinking water in selected countries**

(i) Plot the data for Cambodia and Mozambique given in the table below on Figure A.

**(2)**

| Country | Life expectancy (years) | Percentage (%) of people with access to safe drinking water |
|---|---|---|
| Cambodia | 70 | 30 |
| Mozambique | 50 | 57 |

(ii) Draw a best fit line on Figure A.

**(1)**

(iii) Give **one** reason for the relationship shown in Figure A.

**(1)**

.....

.....

(e) For a named developing or emerging country, explain **two** reasons the population structure has changed in the last 30 years.

**(4)**

Named country .....

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(f) Assess the social and economic impacts of private investment by TNCs in a named developing/emerging country.

**(8)**

Named country .....

**(Total for Question 2 = 30 marks)**

**TOTAL FOR SECTION B = 30 MARKS**

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## SECTION C

## Resource Management

**Answer all parts of question 3. Write your answers in the spaces provided.**

**Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.**

**3** The distribution and demand for natural resources varies around the world.

(a) Fish are a biotic resource. Name **two** other biotic resources.

**(2)**

1 .....

.....

2 .....

.....

(b) Study Figure 3 in the Resource Booklet.

(i) Identify the percentage of stock that was overfished in 2011.

**(1)**

☒ **A** 28%

☒ **B** 58%

☒ **C** 78%

☒ **D** 98%

(ii) Calculate the difference between the percentage of total stock underfished between 1974 and 2011.

**(1)**

..... %

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(iii) Suggest **one** reason for the trend in the percentage of stocks underfished shown in Figure 3.

**(2)**

(iv) Suggest **two** ways the trends shown in Figure 3 would impact on this environment.

**(4)**

1

2

**(Total for Question 3 = 10 marks)**

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**Answer only one question from Question 4 (Energy Resource Management) and Question 5 (Water Resource Management).**

**Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.**

Chosen question number: **Question 4** ☒ **Question 5** ☐

**Spelling, punctuation and grammar will be assessed in 4 (e)**

**4** The development, production and consumption of different energy resources needs to be managed carefully.

(a) Identify the renewable energy resource.

**(1)**

☒ **A** natural gas

☒ **B** coal

☒ **C** the sun

☒ **D** oil

Study Figure 4 in the Resource Booklet.

(b) (i) Calculate the increase in **onshore** wind power generation between 2000 and 2010.

**(1)**

..... MW

(ii) Calculate the percentage of total wind power that was from offshore generation in 2010.

**(1)**

..... %

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(iii) Identify the total wind power generated in 2015 if the trend shown on Figure 4 continued.

**(1)**

- ☒ **A** 8 000
- ☒ **B** 12 000
- ☒ **C** 16 000
- ☒ **D** 20 000

(iv) Suggest **one** reason for the trend between 2000 and 2010 in Figure 4.

**(2)**

(c) Explain **one** reason why energy consumption per person has increased in the last 100 years.

**(2)**

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(d) Explain **one** reason why non-renewable energy resources need to be managed.

**(4)**

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**In this question, 4 of the marks awarded will be for your spelling, punctuation and grammar and your use of specialist terminology.**

*(e) Assess the impacts on people of developing non-renewable and renewable energy resources.

**(12)**

**(Total for Question 4 = 24 marks)**

**TOTAL FOR SECTION C = 34 MARKS**

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**Spelling, punctuation and grammar will be assessed in 5 (e)**

**5** The development, production and consumption of different water resources needs to be managed carefully.

(a) Identify the percentage of the Earth's water that is fresh water.

**(1)**

- ☒ **A** 3%
- ☒ **B** 40%
- ☒ **C** 60%
- ☒ **D** 97%

Study Figure 5 in the Resource Booklet.

(b) (i) Calculate the increase in water use between 1950 and 2010.

**(1)**

..... million acre-feet

(ii) Calculate water use as a percentage of water supply in 1986.

**(1)**

..... %

(iii) Identify the total water use in 2020 if the trend shown on Figure 5 continued.

**(1)**

- ☒ **A** 11.5
- ☒ **B** 13
- ☒ **C** 14.5
- ☒ **D** 18

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(iv) Suggest **one** reason for the changes in water supply between 1950 and 2010 on Figure 5.

**(2)**

(c) Explain **one** reason why water availability has decreased in the last 50 years.

**(2)**

(d) Explain why water resources need to be managed.

**(4)**

**In this question, 4 of the marks awarded will be for your spelling, punctuation and grammar and your use of specialist terminology.**

*(e) Assess the importance of annual rainfall for the water supply of countries at different levels of development.

**(12)**

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**(Total for Question 5 = 24 marks)**

**TOTAL FOR SECTION C = 34 MARKS**
**TOTAL FOR QUESTION PAPER = 94 MARKS**

## Pearson Edexcel Level 1/Level 2 GCSE (9–1)

# Geography A

## Paper 2: The Human Environment

Sample assessment material for first teaching September 2016
**Resource Booklet**

Paper Reference
**1GA0/02**

**Do not return the Resource Booklet with the question paper.**

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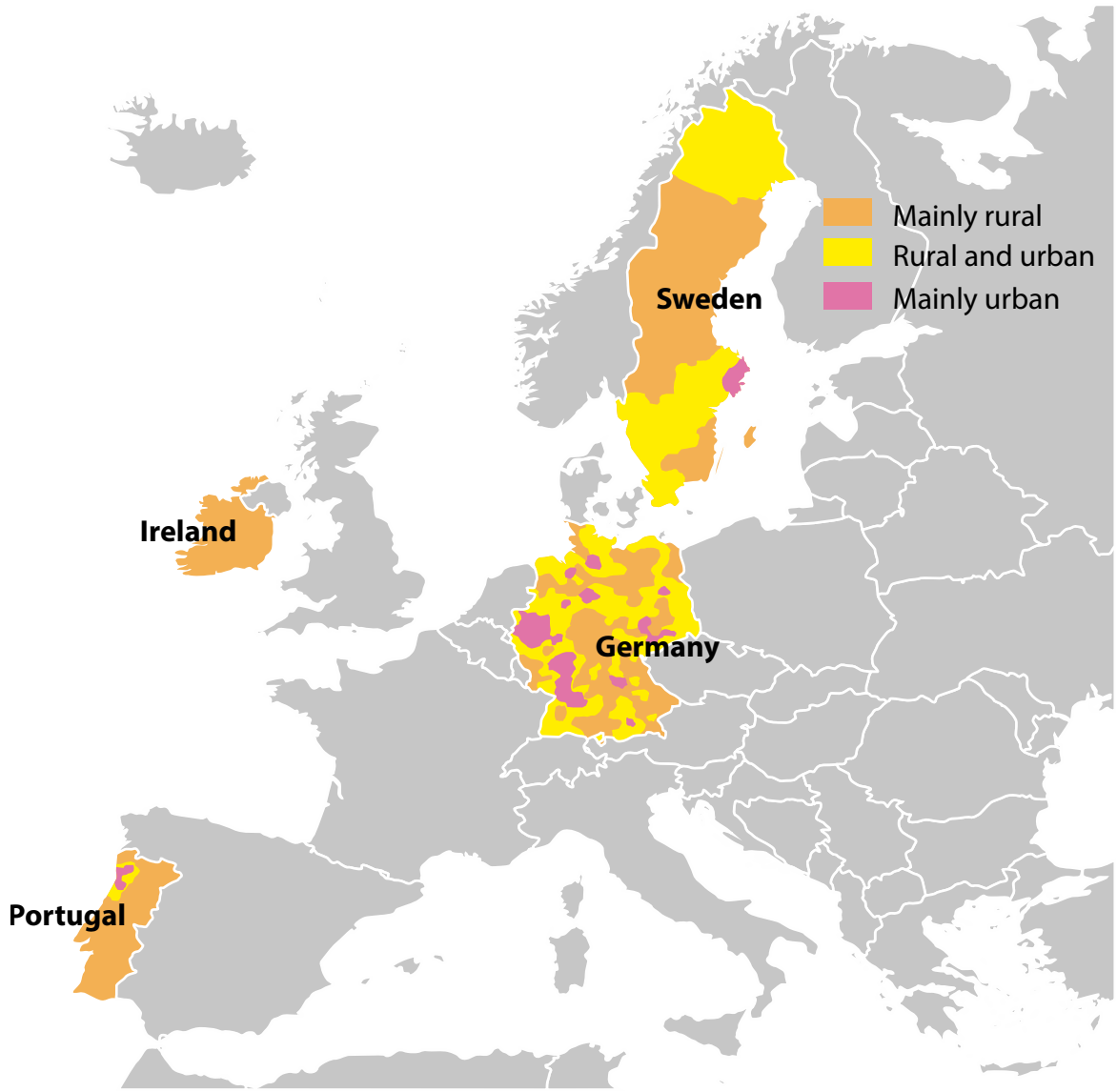



(Source: © Eurostat)

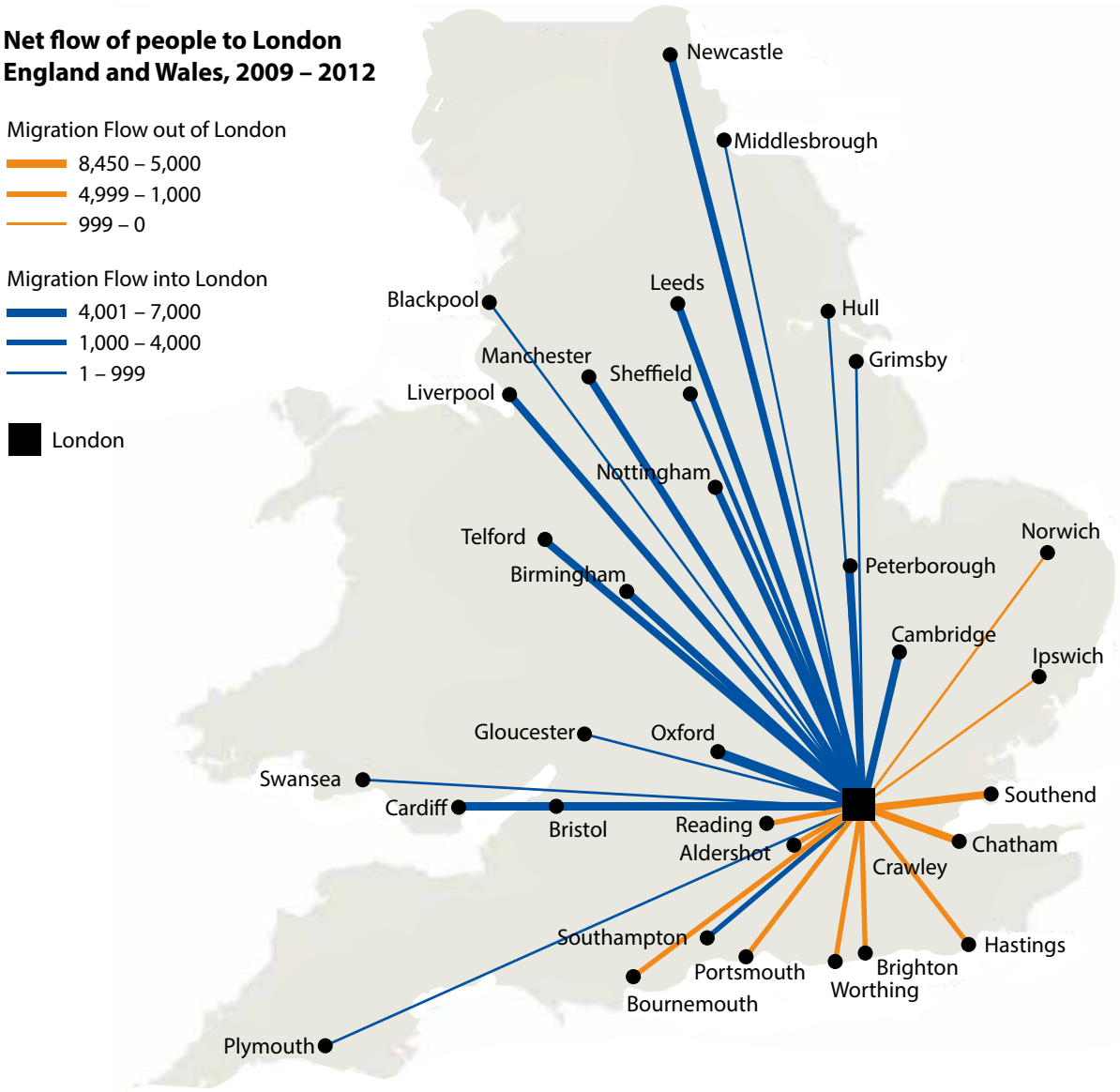
**Figure 1a**

**Urbanisation in selected European Countries**

(Source: Image31454230 /kodachrome25/ Istock)

**Figure 1b**

**Evidence for deindustrialisation**




(Source: 'Is London a drain on other UK cities?', Sarah Marsh, George Arnett, © Guardian News & Media Ltd. 2014)

**Figure 1c**

**Migration flow into and out of London 2009–2012**

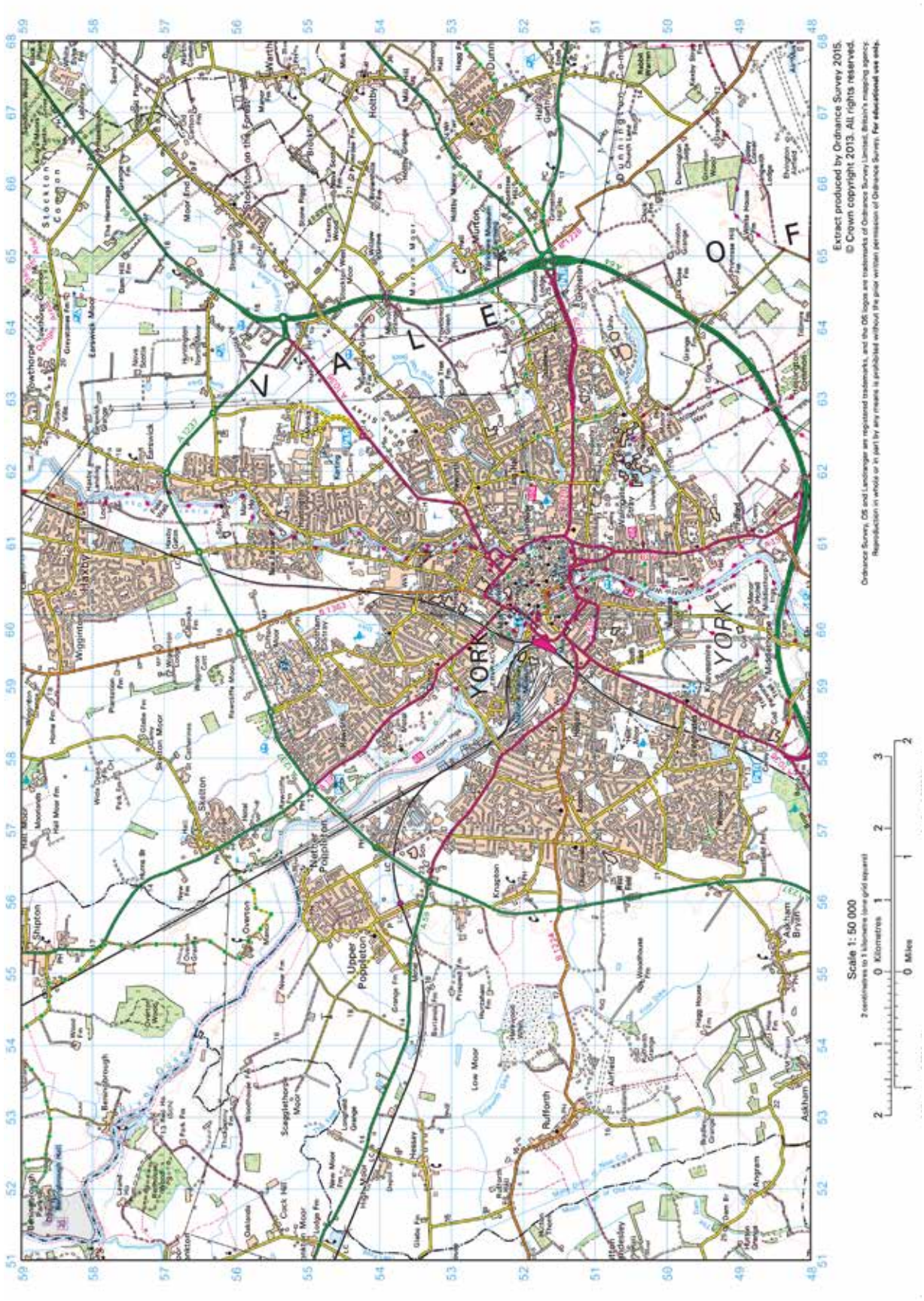



**Figure 1d**

**Map extract showing the city of YorkMigration flow into and out of London 2009–2012**

| Country | Gross Domestic Product (GDP) in U.S. dollars (billions) | |
|---|---|---|
| | 2000 | 2014 |
| Austria | 0.2 | 0.4 |
| China | 1.2 | 10.4 |
| India | 0.5 | 2.0 |
| Japan | 4.7 | 4.8 |
| Netherlands | 0.4 | 0.9 |
| Spain | 0.6 | 1.4 |
| USA | 10.3 | 17.4 |

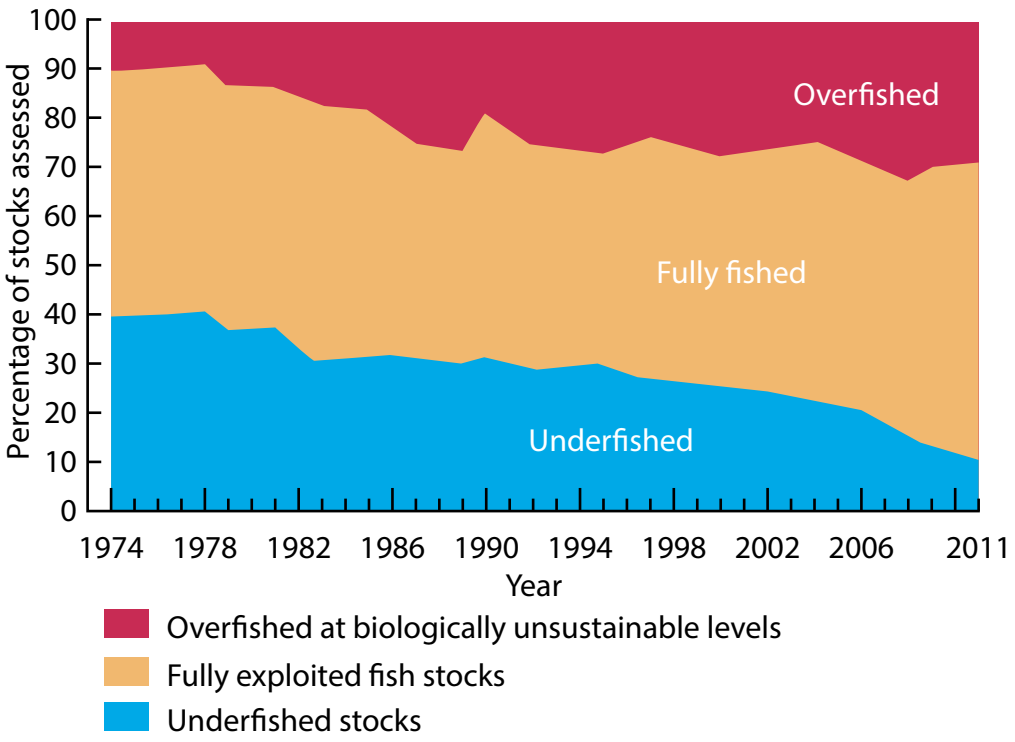
**Figure 2a**

**Changes in Gross Domestic Product (GDP) for selected countries, 2000–2014**

(Source: MyLoupe/Getty Images)

**Figure 2b**

**The Akosombo dam, a development project in Ghana**




(Source: Extract from 'http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/')

**Figure 3**

**Global trends in the state of marine fish stocks, 1974–2011 (FAO, 2014)**

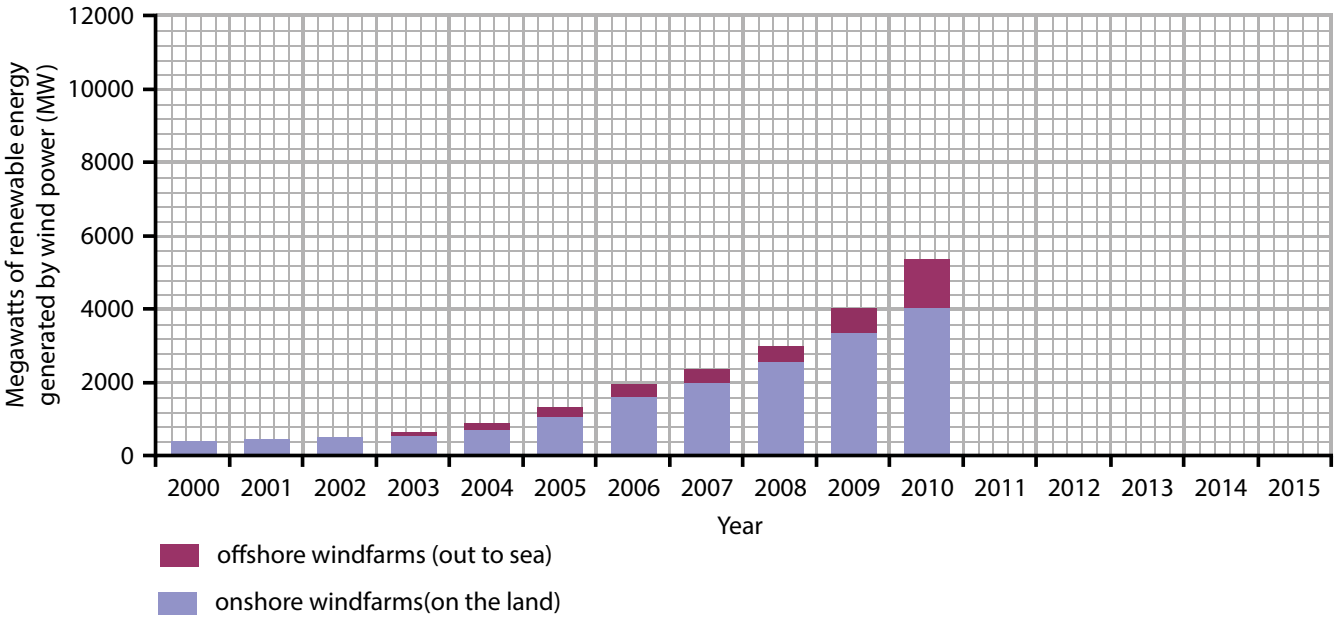



**Figure 4**

**Renewable energy generated by wind power in the UK, 2000–2013**

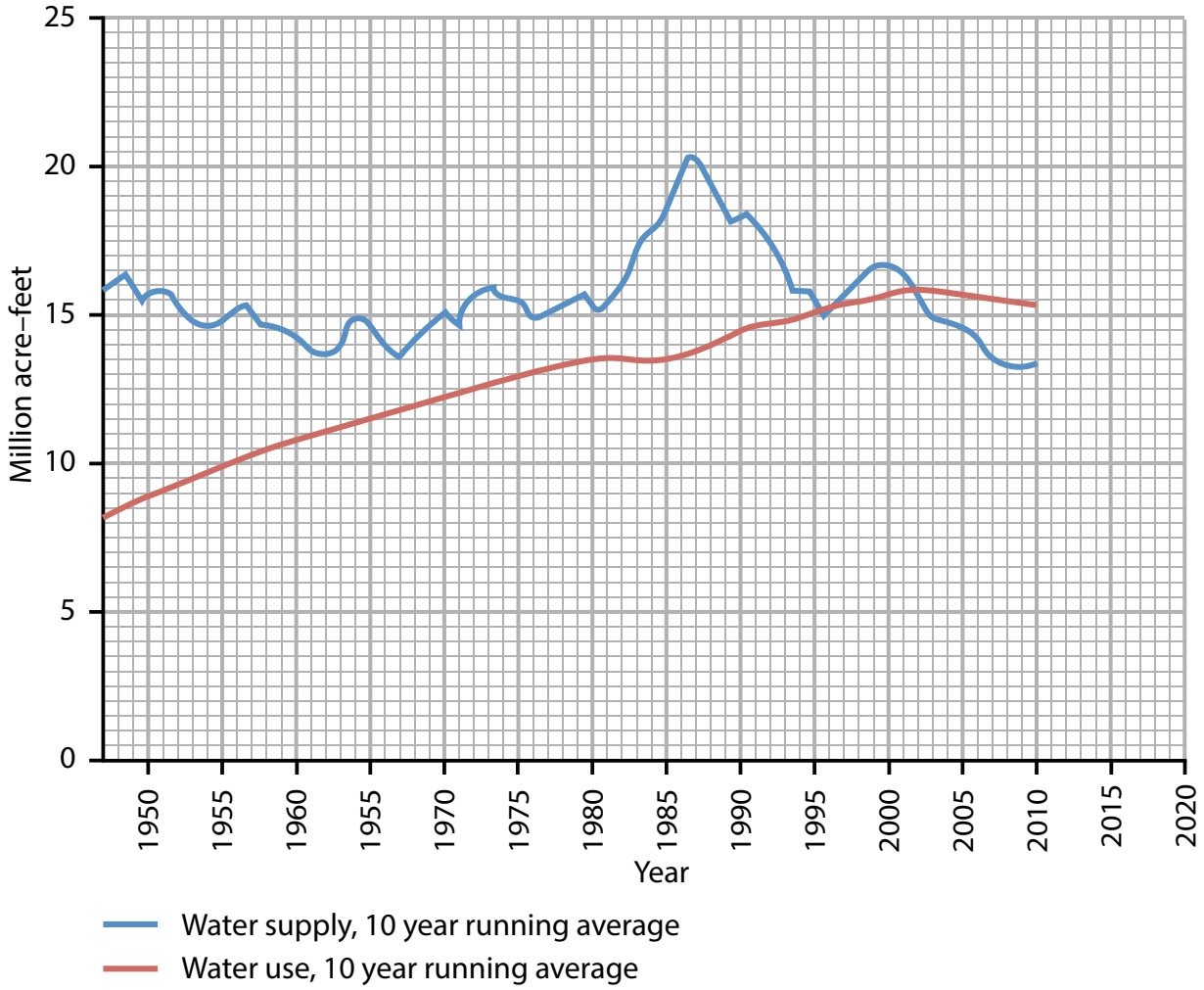



**Figure 5**

**Water supply and water use in the Colorado River Basin, 1950–2010**

## Paper 2 Mark scheme

### Question 1 – Changing cities

| Question number | Answer | Mark |
|---|---|---|
| 1(a) | A | (1) |

| Question number | Answer | Mark |
|---|---|---|
| 1(b)(i) | Urbanisation means an increase in the proportion of people living in urban areas compared to rural areas (1).<br><br>**Accept any other appropriate response** | (1) |

| Question number | Answer | Mark |
|---|---|---|
| 1(b)(ii) | Award 1 mark for each of the following, maximum 1 mark:<br><br>Urbanisation has been most rapid in LICs (1)<br><br>Rate has slowed down in HICs since the 1960s (1)<br><br>Global rates slowed in the 1990s (1)<br><br>Today, Africa has the fastest rate of urbanisation (1)<br><br>Today, developed countries have about 75:25 urban-rural split (1)<br><br>Reject trends pre-1960<br>Projected trends, responses with no temporal element / idea of change.<br><br>**Accept any other appropriate response** | (1) |

| Question number | Answer | Mark |
|---|---|---|
| 1(c)(i) | Award 1 mark for each of the following, up to a maximum of 2 marks:<br><br>Overgrown vegetation (1)<br><br>Broken windows/boarded up (1)<br><br>Deserted/no industrial activity (1)<br><br>Derelict (1)<br><br>Neglected (1)<br><br>**Accept any other appropriate response** | (2) |
| **Question** | **Answer** | **Mark** |

| number | | |
|---|---|---|
| **1(c)(ii)** | Loss of manufacturing sector jobs/businesses (1).<br><br>Accept closure of factories.<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(c)(iii)** | Award 1 mark for each of the following, maximum 1 mark:<br><br>Unemployment (1)<br><br>Lower family incomes (1)<br><br>Loss of community cohesion (1)<br><br>De-population (1)<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(c)(iv)** | Award 1 mark for each change, up to a maximum 3 marks:<br><br>Using land use maps or satellite images (1)<br><br>Using graphs of employment sector/unemployment (1)<br><br>Using GIS (1)<br><br>**Accept any other appropriate response** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(d)(i)** | D | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(d)(ii)** | Award 1 mark for each of the following, up to a maximum of 2 marks:<br><br>Increased competition for jobs (1)<br><br>Increased strain on services/schools/housing (1)<br><br>Overcrowding (1)<br><br>Changes the population structure of London (1)<br><br>Reject impacts on rural areas or areas where the migrants have left (i.e. outside London).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(e)(i)** | C | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(e)(ii)** | Award 1 mark for one of the following, up to a maximum of 1 mark:<br><br>3.5 km (1)<br><br>Accept distances between 3km and 4km (1). | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(e)(iii)** | Award 1 mark for a point about suburbanisation and a further one mark for a development of this point, up to a maximum of 4 marks:<br><br>Flat land (1), which is easy to build on (1)<br><br>Near A/main roads (1), which provide good access to places (1)<br><br>Located near the centre of York (1) so commuters do not have far to travel (1)<br><br>Nature reserve/fields nearby (1), which provide a relaxing/quiet living environment (1)<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(f)** | Award 1 mark for impact on CBD and a further one mark for explanation of its effect, up to a maximum of 3 marks:<br><br>Growth in out-of-town shopping centres (1), which offered cheaper prices (1) took customers away from the CBD (1)<br><br>Many shops in the CBD lost customers (1), which meant that they were making less money (1) and some eventually closed down (1)<br><br>Many CBDs have become pedestrianised (1), with improved street lighting (1) to make them more appealing to shoppers (1)<br><br>**Accept any other appropriate response** | **(3)** |

| Question number | Indicative content |
|---|---|
| 1(g) | **AO2 (4 marks)/AO3 (4 marks)**<br><br>**AO2**<br>• Quality of life is a combination of different factors such as health, sanitation, education, employment, wealth, access to clean drinking water.<br>• Major cities in developing/emerging countries are faced with a number of challenges that affect quality of life; in particular, the need to develop infrastructure and services such as water, sewage, drainage and waste collection.<br>• Environmental issues such as increased air pollution due to a growing number of car users and/or industries, affect the quality of life in major cities and require careful management.<br>• Social and economic issues such as the spread of disease, crime, unemployment and education need to be managed.<br>• The UK and developing/emerging countries manage the economic, environmental and social issues in different ways.<br>• In major cities in the UK, strategies to improve the quality of life may include waste management (e.g. recycling), developing job opportunities, increasing the quality and quantity of schools, improving healthcare and welfare provision, the development of integrated transport systems and increasing the supply of affordable and energy-efficient housing.<br>• In major cities in developing/emerging counties, bottom-up (e.g. site and service schemes and self-help schemes) and top-down approaches (e.g. government policies and investment in improving transport, education and waste disposal) have been taken to improve the quality of life.<br>**AO3**<br>Evaluation will depend on the specific case studies, but may include:<br><br>• The quality of life in some areas of major cities is low and the reasons for this vary – and these reasons are a combination of social, economic, environmental and political factors.<br>• The type of strategy(s) relative impact of an approach used to improve the quality of life vary and are influenced by factors such as the level of development of a country, national government policy and international relations with other countries. Some countries have greater economic power and influence to prioritise urban improvements.<br>• Approaches to improving the quality of life vary in their effectiveness, e.g. a strategy may target only a particular area or is dependent on a reliable supply of funding.<br>• The advantage of some approaches is the consequential effect on other aspects of quality of life, e.g. by improving access to clean |

| Question number | Indicative content |
|---|---|
| | drinking water the spread of disease is limited, residents experience better health and are able to go out to work.<br>• In some cities, there are barriers preventing approaches being successful, such as a lack of funding, rapidly-growing populations and the legacy of deindustrialisation. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) |

**Question 2 – Global development**

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(i)** | Total wealth/income earned by a country in a year.<br><br>**Accept any other appropriate response** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(ii)** | C | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(iii)** | Working to show:<br><br>The correct addition of total GDP ($billions), 37.3 (1)<br><br>The division of this number by 7, the total number of countries, arriving at a mean of 5.3 – or a number that rounds to 5.3 – US$ billion (1)<br>Maximum of 1 mark if no working out is shown. | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(a)(iv)** | Award 1 mark for one of the following up to a maximum of 2 marks:<br><br>Income per capita/GNI per capita (1)<br><br>Life expectancy (at birth) (1)<br><br>Education/mean years of school and expected years of schooling (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answers | Mark |
|---|---|---|
| **2(b)** | C<br>E | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(c)(i)** | Award 1 mark for identifying a relevant advantage/disadvantage and a further one mark for justification of how top-down development projects have this impact, up to a maximum of 2 marks each.<br><br>Advantages<br><br>Large-scale government investment and political support/will (1) has the potential to affect positively the lives of a large number of people (1).<br><br>Political and government support provides conditions for a multiplier effect/'take off' (1) which could lead to rapid economic development (1).<br><br>The local economy could be improved (1) so there are more funds available to spend on healthcare, education and training (1).<br><br>Disadvantages<br><br>High capital expenditure costs (1), which could lead to government debt/the diversion of spending from education/healthcare to pay off the debt (1).<br><br>Government/politicians are sometimes removed from local people/needs are often ignored (1) so they do not benefit in terms of economic and social development (1).<br><br>Often focussed on the needs of cities or a government power base, not rural areas/more marginal areas (1) so could exacerbate existing development inequalities (1).<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(c)(ii)** | Award 1 mark for each descriptive point, up to a maximum of 2 marks:<br><br>A 'wordle' or similar online tool could be used (1) to analyse the text of websites to see words frequently in the source text (1).<br><br>Text could be coded into positive and negative impacts (1) and then counted (1).<br><br>Accept any other reasonable response. | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(d)(i)** | One mark for each correct plot. | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(d)(ii)** | 1 mark for an accurate best fit line which shows that life expectancy increases with increased access to safe drinking water. | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(d)(iii)** | Award 1 mark for a reason for the relationship shown in Figure A, maximum 1 mark.<br><br>• People drinking safe water do not get diseases and live longer (1).<br>• Development projects such as building wells or irrigation have improved overall basic living standards (1).<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **2(e)** | Award 1 mark for a basic change and a further one mark for extension through description or explanation, up to a maximum of 4 marks:<br><br>Birth rate has decreased (1) due to wider availability of contraception (1)<br><br>Death rates have decreased (1) as there is better health care (1)<br><br>Life expectancy is increasing (1) because there is a greater awareness of the causes of disease (1)<br><br>There is a population of working age (1), infant mortality is reducing and people are surviving to adulthood (1)<br><br>**Accept any other appropriate response.** | **(4)** |

| Question number | Indicative content |
|---|---|
| 2(f) | **AO2 (4 marks)/AO3 (4 marks)**<br><br>**AO2**<br>• There has been a growth in private investment by TNCs into developing/emerging countries.<br>• This growth is a result of TNCs being attracted by cheap supplies of raw materials, cheap workers, good transport links and infrastructure, proximity to markets and favourable government policies that sometimes offer incentives to TNCs to locate in their country.<br>• Positive social and economic impacts of this growth include the provision of new jobs and skills for local people, local/national economy is improved, sharing of ideas, e.g. in terms of the production of goods or the organisation and management of industry.<br>• Negative social and economic impacts of this growth could include the idea of 'exploitation' workers.<br>• Understanding the impacts of changes to economic sectors can benefit a country can have positive and negative impacts on people and the economy.<br>• Social/economic positive impacts are likely to be linked to increased wages/standard of living and the growth of a consumer society.<br>• Social/economic negative impacts are likely to be linked to workers being exploited – low pay – long working hours – poor working conditions.<br><br>**AO3**<br>• Growth in private investment by TNCs will often result in a combination of positive and negative impacts for people and the economy.<br>• Impacts are inter-related, e.g. new jobs are created, which increases disposable income and consumer spending/this contributes to a positive multiplier effect on a larger scale for goods and services, e.g. improved infrastructure, better education etc.; TNCs exploit cheap labour, which means that workers are often badly paid, they are footloose and move out of a country at any point, which creates economic uncertainty for the host country.<br>• Positive impacts can be short term and longer term and can impact on different groups of people. For example, in the short term, jobs are created for locals which, in the longer term, could provide them with the skills to set up their own business. Also, short term improvements in the economy may facilitate the reinvestment of money into education, health and infrastructure.<br>• The negative impacts can also affect different groups of people over different timescales. For example, in the short term, labourers may |

| Question number | Indicative content |
|---|---|
| | experience low wages and a poor working environment (as the TNC wants to maximise profit), but in the longer term, a country may become reliant on a particular TNC – which is not sustainable. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) |

**Question 3 – Resource management**

| Question number | Answer | Mark |
|---|---|---|
| **3(a)** | Award 1 mark for each of the following, up to a maximum of 2 marks:<br><br>humans (1)<br><br>worms (1)<br><br>dogs (1)<br><br>cattle (1).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(b)(i)** | A | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(b)(ii)** | Accept between 31% and 27% | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(b)(iii)** | Award 1 mark for suggesting one reason, and a further 1 mark for an appropriate extension, up to a maximum 2 marks:<br><br>increase in overfishing creates stock reduction for the future (1), which leads to an unsustainable stock level for future generations (1)<br><br>more overfishing leads to a decline in the percentage of stocks that are underfished (1) because of a reduction in juvenile fish (1)<br><br>increase in marine pollution/impact of global warming on the oceans (1), leading to a general decline in the health of fish stocks (1).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(b)(iv)** | Award 1 mark for a basic environmental impact of overfishing and a further 1 mark for extension through description or explanation, up to a maximum of 4 marks:<br><br>fewer fish left in the sea/ocean (1) use of data from Figure 3 to support (1)<br><br>reducing the amount of fish that predators eat (1), therefore having knock-on effects further up the food chain (1).<br><br>increases the species further down the food chain that the fish would have consumed (1)<br><br>a decline in fish stocks in one area (1) could lead to other un-tapped parts of the ocean might becoming exploited (1).<br><br>**Accept any other appropriate response.** | **(4)** |

**Question 4 – Energy resource management**

| Question number | Answer | Mark |
|---|---|---|
| **4(a)** | C | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(b)(i)** | 3600 MW<br><br>Accept 3500 to 3700 MW | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(b)(ii)** | 24.5%<br><br>Accept 22% to 28% | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(b)(iii)** | B | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(b)(iv)** | Award 1 mark for suggesting one reason, and a further 1 mark for an appropriate extension, up to a maximum 2 marks:<br><br>government renewable energy targets (such as Kyoto Protocol) (1) because it incentivises investment in renewable energy sources (1)<br><br>desire to increase the UK's energy mix (1), which will reduce reliance on fossil fuels (1)<br><br>government subsidies for renewable energy (1), which makes investment in renewable energy sources more viable/cheaper (1)<br><br>public dislike of onshore windfarms/'nimbyism' (1) has led to an increase in offshore wind farm construction (1).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(c)** | Award 1 mark for change in energy consumption and a further 1 mark for an explanation of the effect of this, up to a maximum of 2 marks:<br><br>increased incomes/personal wealth (1), leading to growth in consumerism of products that require electricity (1)<br><br>growth in ownership of hi-tech products (1) that requires electricity/electrical products to function (1)<br><br>rising car ownership/2 to 3-car families (1), which increases the demand for oil (1).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(d)** | Award 1 mark for point about energy source and a further one mark for explanation of its effect, up to a maximum of 4 marks:<br><br>non-renewable energy resources are finite (1), which means they will eventually run out (1) so alternatives in the form of renewables are needed that can be recycled/reused/replenished (1) over a shorter period of time (1)<br><br>non-renewable energy resources emit carbon dioxide (1) which is a greenhouses gas (1) and causes global warming (1), which causes sea level rise/extremes in climate (1)<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Indicative content |
|---|---|
| 4 (e)* | **AO2 (4 marks)/AO3 (4 marks)**<br>**AO2**<br>• Renewable energy sources are those energy sources whose flow is continuous and will never run out, whereas non-renewable energy resources (e.g. fossil fuels – oil, coal and natural gas) will eventually run out.<br>• The development of non-renewable energy resources can have **negative** impacts on people, e.g. coal mining can be dangerous and damaging to health as workers may have to endure cramped conditions deep below the surface.<br>• The development of non-renewable energy resources can have **positive** impacts on people such as providing employment opportunities.<br>• The development of renewable energy resources can have **negative** impacts on people, e.g. through the development of windfarms, which some people believe spoil the scenery or disrupt TV/radio/mobile phone signals.<br>• The development of renewable energy resources can have **positive** impacts on people such as it agrees with their ethics/viewpoints about reducing the effects of global warming. The development of renewable energy resources (e.g. solar, wind, tidal) that do not emit greenhouse gases – which is ultimately healthier for people as no air pollution is created.<br><br>**AO3**<br>• Impacts are often inter-related, with one impact often leading to another, potentially more serious, impact. The burning of non-renewable energy resources (e.g. coal, oil) can lead to air pollution, which can then lead to respiratory problems and an increase in the cases of asthma in a particular region.<br>• People are often aware of the negatives of developing non-renewable resources but accept these as the potential outcomes (i.e. jobs/money) are perceived to be worth the risk.<br>• Different groups of people can be affected differently within a country, e.g. in some parts of the world, owners of TNCs will benefit from non-renewable resources as their development is relatively cheap and the technology is readily available. However, other people in the same country may suffer as a result of the environmental impacts and on an international scale there might be wider impacts such as global warming or the increasing cost of these resources for consumers.<br>• The impacts of non-renewable and renewable energy resources can vary significantly depending on the type of resource, the nature of the country wanting to develop it and the way it is being (sustainably) managed. For example, laws about planning permission, carbon emissions and waste disposal can all have indirect positive or negative impacts on people. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) |

| Marks for SPGST | | |
|---|---|---|
| **Performance** | **Marks** | **Descriptor** |
| SPGST 0 | 0 | *No marks awarded*<br>• Learners write nothing.<br>• Learner' response does not relate to the question.<br>• Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning. |
| SPGST 1 | 1 | *Threshold performance*<br>• Learners spell and punctuate with reasonable accuracy.<br>• Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.<br>• Learners use a limited range of specialist terms as appropriate. |
| SPGST 2 | 2–3 | *Intermediate performance*<br>• Learners spell and punctuate with considerable accuracy.<br>• Learners use rules of grammar with general control of meaning overall.<br>• Learners use a good range of specialist terms as appropriate. |
| SPGST 3 | 4 | *High performance*<br>• Learners spell and punctuate with consistent accuracy.<br>• Learners use rules of grammar with effective control of meaning overall.<br>• Learners use a wide range of specialist terms as appropriate. |

**Question 5 – Water resource management**

| Question number | Answer | Mark |
|---|---|---|
| **5(a)** | A | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(i)** | 7.5 million acre-feet | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(ii)** | 65.8%<br><br>Accept between 60% and 70% | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(iii)** | C | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(iv)** | Award 1 mark for suggesting one reason, and a further 1 mark for an appropriate extension, up to a maximum 2 marks:<br><br>between 1950 and 1980, the area received a similar amount of rainfall (1) so the water supply did not change very much during that period (1)<br><br>the Government might have been trying to conserve water since 1988 (1) which has led to a fall in water supply (1)<br><br>water transport systems / pipes may be leaking and in need of repair (1), which is why water supply has been falling in the last 20 years (1)<br><br>increased amount of rainfall / wetter seasons (1) increased the water supply during the early-mid 1980s (1).<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(c)** | Award 1 mark for point about water consumption and a further one mark for explanation of reason for the change, up to a maximum of 2 marks:<br><br>changes in levels of rainfall (1) such as periods of drought or above average rainfall (1)<br><br>over-abstraction of ground water (1), leading to lower levels of discharge into the river basin (1)<br><br>climate change (1) leading to long term decline in precipitation/river flow since 1987 (1)<br><br>**Accept any other appropriate response** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(d)** | Award 1 mark for point about water resource and a further one mark for explanation of reason for management, up to a maximum of 4 marks:<br><br>to ensure/increases the availability of (clean) drinking water (1), which will improve the health of the population (1)<br><br>to reduce flooding (1), allowing for the necessary infrastructure for industry to be established (1)<br><br>to increase opportunities for leisure and recreation (1), which could bring jobs to an areas (1)<br><br>to prevent water supply becoming polluted (1), which has a negative impact on the health of the local population (1)<br><br>water resources are finite (1) but the global population/demand is growing (1).<br><br>**Accept any other appropriate response** | **(4)** |

| Question number | Indicative content |
|---|---|
| 5(e)* | **AO2 (4 marks)/AO3 (4 marks)**<br>**AO2**<br>• Water supply is not just about the availability of clean drinking water in a country; water supply also covers water quality and provision for uses other than domestic supply.<br>• There are a number of different factors that can influence that water supply in a country, e.g. annual rainfall, infrastructure of storing and moving water (including sewage and water pipes) and human intervention (e.g. dams/reservoirs and geopolitical agreements).<br>• Annual rainfall varies globally – which has a direct impact on the amount of water available in a country for domestic, agricultural and industrial usage.<br>• In many parts of the world, annual rainfall is not even throughout the year. This presents countries with the challenge of storing water when it is not required and moving water supplies from areas of high rainfall to areas of high demand.<br>• The management and sustainable use of water is essential to ensure a regular and consistent water supply; the way in which this is done varies between countries at different levels of development.<br><br>**AO3**<br>• Water supply needs to be managed to meet demand – and there are different types of demand within a country, e.g. for agriculture, industry and domestic uses.<br>• The ability to successfully manage the water supply sustainably within a country may be just as, or even more, important than the annual levels of rainfall in the first place. For example, mismanagement of water supplies could actually lead to water-quality problems and therefore reduce the availability of supply for domestic use.<br>• More-developed countries often have a greater capacity to manage their water resources (e.g. through large top-down projects such as dams and reservoirs) which reduce the reliance on a regular, high annual rainfall. Also, more-developed countries often have the technology and infrastructure to overcome distribution problems; if one area of the country receives a low annual supply then water can be transported from an area with a high supply and lower demand.<br>• Sustainable management is required to reduce water supply problems in the future – and this can vary between countries, depending on various political, social, economic and environmental factors. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Demonstrates isolated elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) |
| Level 2 | 4–6 | • Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements are supported by evidence occasionally. (AO3) |
| Level 3 | 7–8 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) |

| Marks for SPGST | | |
|---|---|---|
| **Performance** | **Marks** | **Descriptor** |
| SPaG 0 | 0 | *No marks awarded*<br>• Learners write nothing<br>• Learner's response does not relate to the question.<br>• Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning. |
| SPaG 1 | 1 | *Threshold performance*<br>• Learners spell and punctuate with reasonable accuracy<br>• Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.<br>• Learners use a limited range of specialist terms as appropriate. |
| SPaG 2 | 2–3 | *Intermediate performance*<br>• Learners spell and punctuate with considerable accuracy<br>• Learners use rules of grammar with general control of meaning overall.<br>• Learners use a good range of specialist terms as appropriate. |
| SPaG 3 | 4 | *High performance*<br>• Learners spell and punctuate with consistent accuracy.<br>• Learners use rules of grammar with effective control of meaning overall.<br>• Learners use a wide range of specialist terms as appropriate. |

Write your name here

| Surname | Other names |
|---|---|
| | |

**Pearson Edexcel**
**Level 1/Level 2**
**GCSE (9–1)**

Centre Number | | | | | |

Candidate Number | | | | |

# Geography A

## Paper 3: Geographical Investigations: Fieldwork and UK Challenges

Sample assessment material for first teaching September 2016
**Time: 1 hour 30 minutes**

Paper Reference
**1GA0/03**

**You must have:**
Resource Booklet, calculator

Total Marks

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- In Section A answer **one** from questions 1 and 2.
  In Section B answer **one** from questions 3 and 4.
  In Section C answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- You must **show all your working out with your answer clearly identified** at the **end of your solution**.

### Information

- The total mark for this paper is 64.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labeled with an **asterisk** (*) are questions where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation and grammar as well as the clarity of expression.*
- The marks available for spelling, punctuation and grammar are clearly indicated.

### Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

*Turn over* ▶

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## SECTION A

### Geographical Investigations – fieldwork

**Answer only one question from Question 1: Investigating physical environments (rivers) and Question 2: Investigating physical environments (coasts).**

**Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.**

Chosen question number: **Question 1** ☐ **Question 2** ☐

### Question 1: Investigating physical environments (rivers)

**1** A group of students was collecting data along the length of a river as part of an investigation into changes in a river channel.

(a) The students had planned to use a flow meter to measure the velocity of the river, but one of their chosen sites was too shallow.

State **one** way they could **adapt** their technique.

**(1)**

.....

.....

(b) Give **one** piece of equipment, other than a flow meter, they would need to use to investigate river discharge.

**(1)**

.....

.....

DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA DO NOT WRITE IN THIS AREA

(c) Study Figure 1a in the Resource Booklet. It shows a sketch of sites used to collect river data.

Explain **one** reason why the students chose a stratified sampling approach.

**(3)**

.....

.....

.....

.....

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.....

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.....

(d) (i) Study Figure 1b in the Resource Booklet.

Which of the following are the correct units used for cross-sectional area in Figure 1b.

**(1)**

☒ **A** $m^2$

☒ **B** $m^3$

☒ **C** $cm^2$

☒ **D** $mm^2$

(ii) Calculate the mean and median depth of the river.

**(2)**

Mean depth = ..... m

Median depth = ..... m

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DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(iii) Using Figure 1b, explain **one** reason why a student might choose to use the results from the median, rather than the mean.

**(2)**

You have studied a river as part of your own fieldwork.

(e) Evaluate the reliability of your conclusions.

**(8)**

**(Total for Question 1 = 18 marks)**

DO NOT WRITE IN THIS AREA

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**Question 2: Investigating physical environments (coasts).**

**2** (a) A group of students were collecting data along the length of a coast as part of an investigation into coastal processes.

The students had planned to use a tape measure to measure the width of the beach, but the weather was very windy.

State **one** way they could **adapt** their technique.

**(1)**

(b) Give **one** piece of equipment, other than a tape measure, they would need to use to investigate beach gradient.

**(1)**

(c) Study Figure 2a in the Resource Booklet. It shows a sketch of sites used to collect coastal data.

Explain **one** reason why the students chose a stratified sampling approach.

**(3)**

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(d) (i) Study Figure 2b in the Resource Booklet.

Which of the following are the correct units used for beach gradient in Figure 2b.

**(1)**

- ☒ **A** m
- ☒ **B** °
- ☒ **C** $cm^2$
- ☒ **D** $m^3$

(ii) Calculate the mean and median gradient of the beach.

**(2)**

Mean gradient = ..... m

Median gradient = ..... m

(iii) Using Figure 2b, explain **one** reason why a student might choose to use the results from the median, rather than the mean.

**(2)**

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You have studied a coastal area as part of your own fieldwork.

(e) Evaluate the reliability of your conclusions.

**(8)**

**(Total for Question 2 = 18 marks)**

**TOTAL FOR SECTION A = 18 MARKS**

## SECTION B

### Geographical Investigations – Human Environments

**Answer only one question from Question 3: Investigating human landscapes (central/inner urban area) and Question 4: Investigating human landscapes (rural settlements).**

**Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.**

Chosen question number: **Question 3** ☐ **Question 4** ☒

### Question 3: Changes in the central urban area/CBD

**3** You have carried out fieldwork when investigating urban environments.

Name of your urban fieldwork location .....

(a) Explain **one** way in which the secondary data you collected supported your urban geographical investigation.

Name secondary data collection method .....

**(3)**

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(b) Explain **one** way the physical features of the urban area you studied influenced the land use of the inner/central urban area.

**(3)**

(c) Explain **one** disadvantage of the sampling strategy you used when investigating views of people on quality of the urban environment.

Name of sampling strategy .....

**(4)**

(d) Figure 3 shows the results from a student's survey investigating shop types with distance from the CBD in Shrewsbury, a market town in Shropshire.

The aim of the student's investigation was to consider changes in land use in a central urban area/CBD.

The student surveyed land use along six roads out from the CBD and had seven categories of land use, to find out their variation within the town.

My Findings

- Retail was the dominant land-use category along the transect.
- Industry was found out of town at sites5 and 6 only.
- There was more open space as we moved away from the CBD.
- As you move away from Shrewsbury's CBD, the types of land use change but, overall, land use remains varied along the transect.

Study Figure 3 in the Resource Booklet.

Evaluate the student's method and findings.

**(8)**

**(Total for Question 3 = 18 marks)**

## Question 4: Changes in rural settlements

**4** You have carried out fieldwork when investigating rural environments.

Name of your rural fieldwork location .....

(a) Explain **one** way in which the secondary data you collected supported your rural geographical investigation.

Name secondary data collection method .....

**(3)**

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(b) Explain **one** way the physical features of the rural area you studied influenced the flows of people visiting.

**(3)**

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(c) Explain **one** disadvantage of the sampling strategy you used when investigating views of visitors to the rural area.

Name of sampling strategy .....

**(4)**

(d) Figure 4 shows the results from a student's research into types of transport used throughout one day in Keswick, a rural market town in theLake District.

The aim of the student's investigation was to investigate a popular tourist spot in the North West of England.

The student surveyed vehicle types at six points near the town centre and had seven categories of vehicle, to find out their variation at different times of the day.

My Findings

- CCars are the dominant transportation type throughout the day.
- Local buses run an inconsistent service.
- Motorbikes are the smallest proportion of traffic for each time period.
- Tourist coaches represent the highest proportion of traffic between the hours of 12 pm to 2 pm and 2 pm to 4pm.

Study Figure 4 in the resource booklet

Evaluate the student's method and findings.

**(8)**

**(Total for Question 4 = 18 marks)**

**TOTAL FOR SECTION B = 18 MARKS**

## SECTION C

## UK Challenges

**Answer ALL questions in this section.**
**Spelling, punctuation, grammar and specialist terminology will be assessed in Question 5(e).**

**5** Study Figure 5a in the Resource Booklet.

(a) (i) Identify the country that has a greater proportion of urban ecosystems than woodland ecosystems.

**(1)**

- ☒ **A** England
- ☒ **B** Northern Ireland
- ☒ **C** Wales
- ☒ **D** Scotland

(ii) State **two** reasons for differences in enclosed farming proportion between England and Scotland.

**(2)**

1 .....

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2 .....

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(b) (i) Study Figure 5b in the Resource Booklet. The population of London in 2011 was 8.2 million.

Calculate the projected population size of London, in 2021, assuming the rate of population increase remains constant.

**(1)**

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(ii) Give **two** reasons why an area may have a low rate of population change.

**(2)**

1 .....

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2 .....

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(c) (i) Study Figure 5d in the Resource Booklet. Identify the modal class for net migration between 1995 and 2013.

**(1)**

- ☒ **A** 0-100 thousand
- ☒ **B** 100-200 thousand
- ☒ **C** 200-300 thousand
- ☒ **D** 300-400 thousand

(ii) Calculate the range for net migration between 1995 and 2013.

**(1)**

.....

(iii) Explain **two** reasons why net migration figures are often disputed.

**(4)**

1 .....

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2 .....

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**In this question, 4 of the marks awarded will be for your spelling, punctuation and grammar and your use of specialist terminology.**

***(d)** Use information from the Resource Booklet and knowledge and understanding from the rest of your geography course of study to support your answer.

Discuss the view that UK population growth and net migration will create pressures on the UK's ecosystems.

**(16)**

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**(Total for Question 5 = 28 marks)**

**TOTAL FOR SECTION C = 28 MARKS**
**TOTAL FOR PAPER = 64 MARKS**

## Pearson Edexcel Level 1/Level 2 GCSE (9–1)

# Geography A

## Paper 3: Geographical Investigations: Fieldwork and UK Challenges

Sample assessment material for first teaching September 2016

**Resource Booklet**

Paper Reference

**1GA0/03**

**Do not return the Resource Booklet with the question paper.**

*Turn over* ▶

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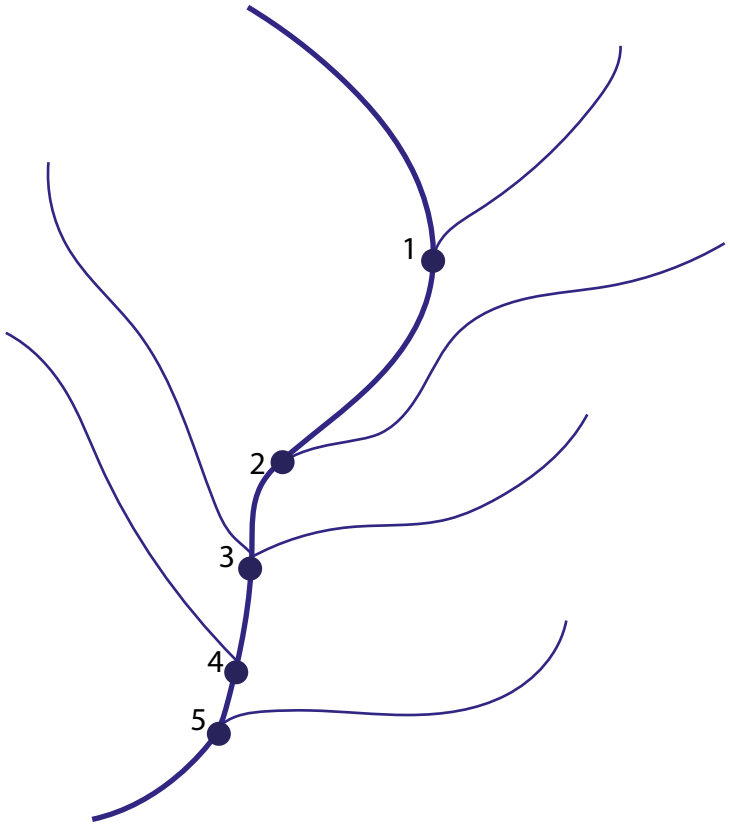



**Figure 1a**

| Channel variable | Units | Site 1 | Site 2 | Site 3 | Site 4 | Site 5 |
|---|---|---|---|---|---|---|
| Width (m) | (m) | 0.45 | 0.52 | 0.78 | 0.85 | 1.10 |
| Depth (m) | (m) | 0.10 | 0.13 | 0.16 | 0.80 | 0.21 |
| Cross-sectional area | | 0.05 | 0.07 | 0.12 | 0.68 | 0.23 |
| Velocity | (m/sec) | 0.45 | 0.47 | 0.56 | 0.55 | 0.51 |
| Discharge | ($m^3$/sec) | 0.02 | 0.03 | 0.07 | 0.37 | 0.12 |

**Figure 1b**

**A table of river data collected by a geography student.**

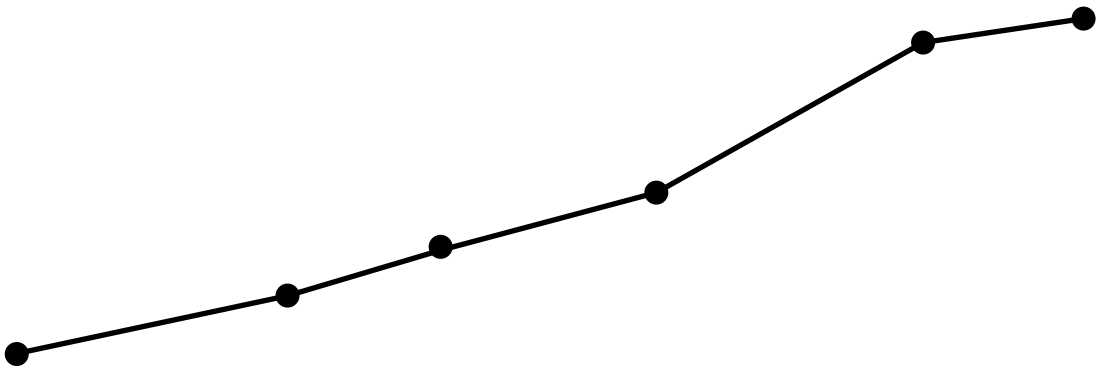


**Figure 2a**

| Sediment characteristics | Units | Site 1 | Site 2 | Site 3 | Site 4 | Site 5 |
|---|---|---|---|---|---|---|
| Long axis | (mm) | 43 | 56 | 56 | 62 | 43 |
| Short axis | (mm) | 22 | 34 | 32 | 56 | 26 |
| Roundness Score | (1–6) | 2 | 2 | 6 | 4 | 6 |
| Beach gradient | | 6 | 8 | 7 | 15 | 6 |

**Figure 2b**

**A table of beach data collected by geography students at five sites along a beach.**

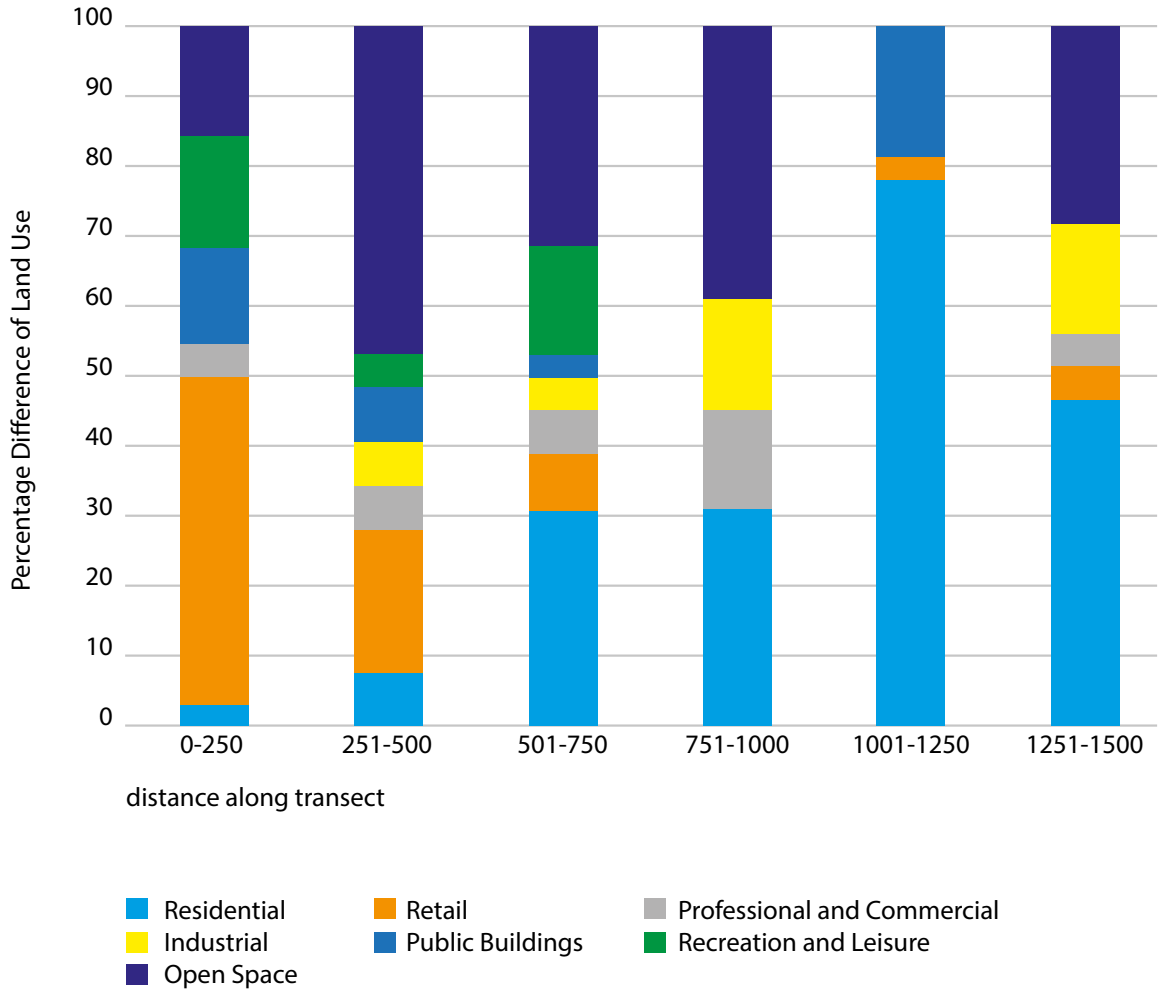



**Figure 3**

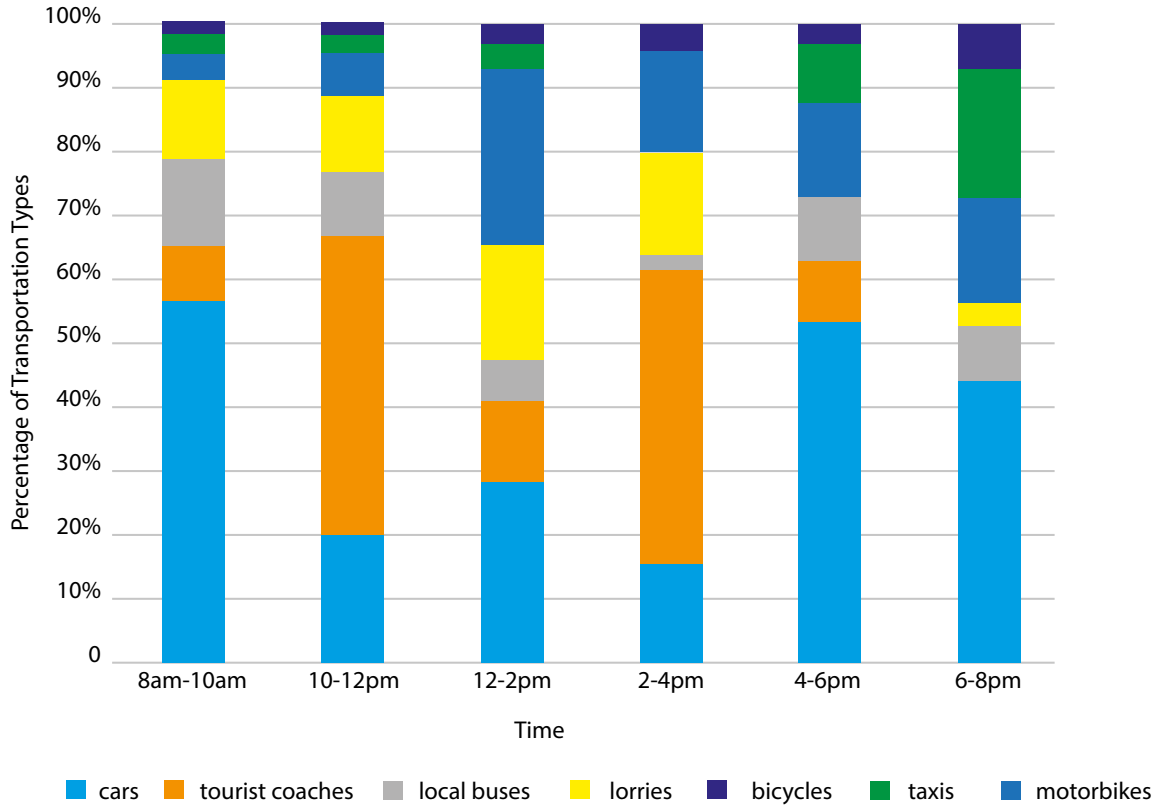
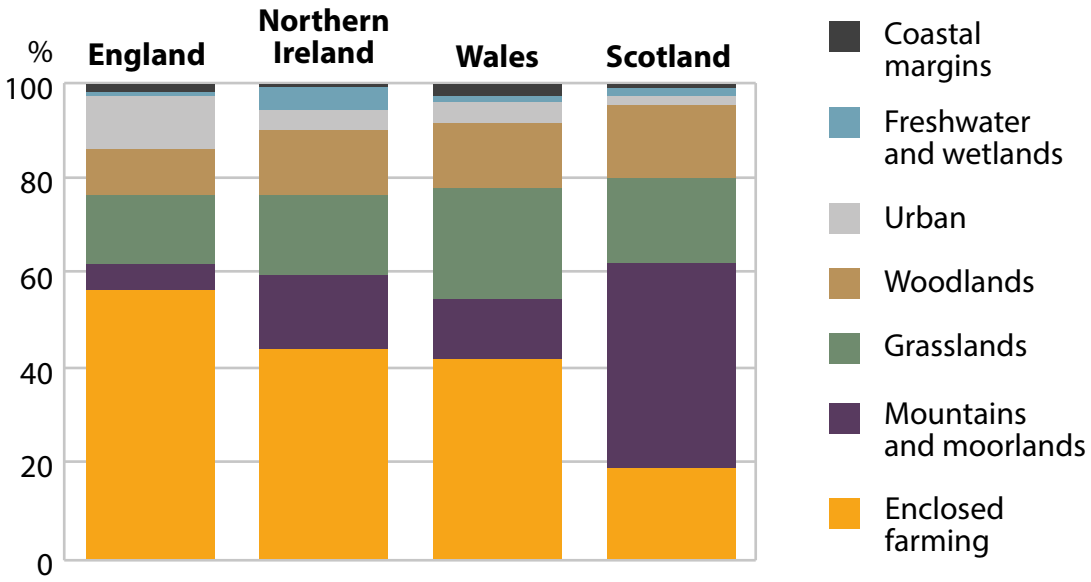



**Figure 4**

The UK faces social and political challenges from its increasing population growth. This growth, including that from migration, will lead to an increased demand for housing and competition for land resources and space. This may have a negative impact on UK habitats and ecosystems

**Ecosystems across the UK**

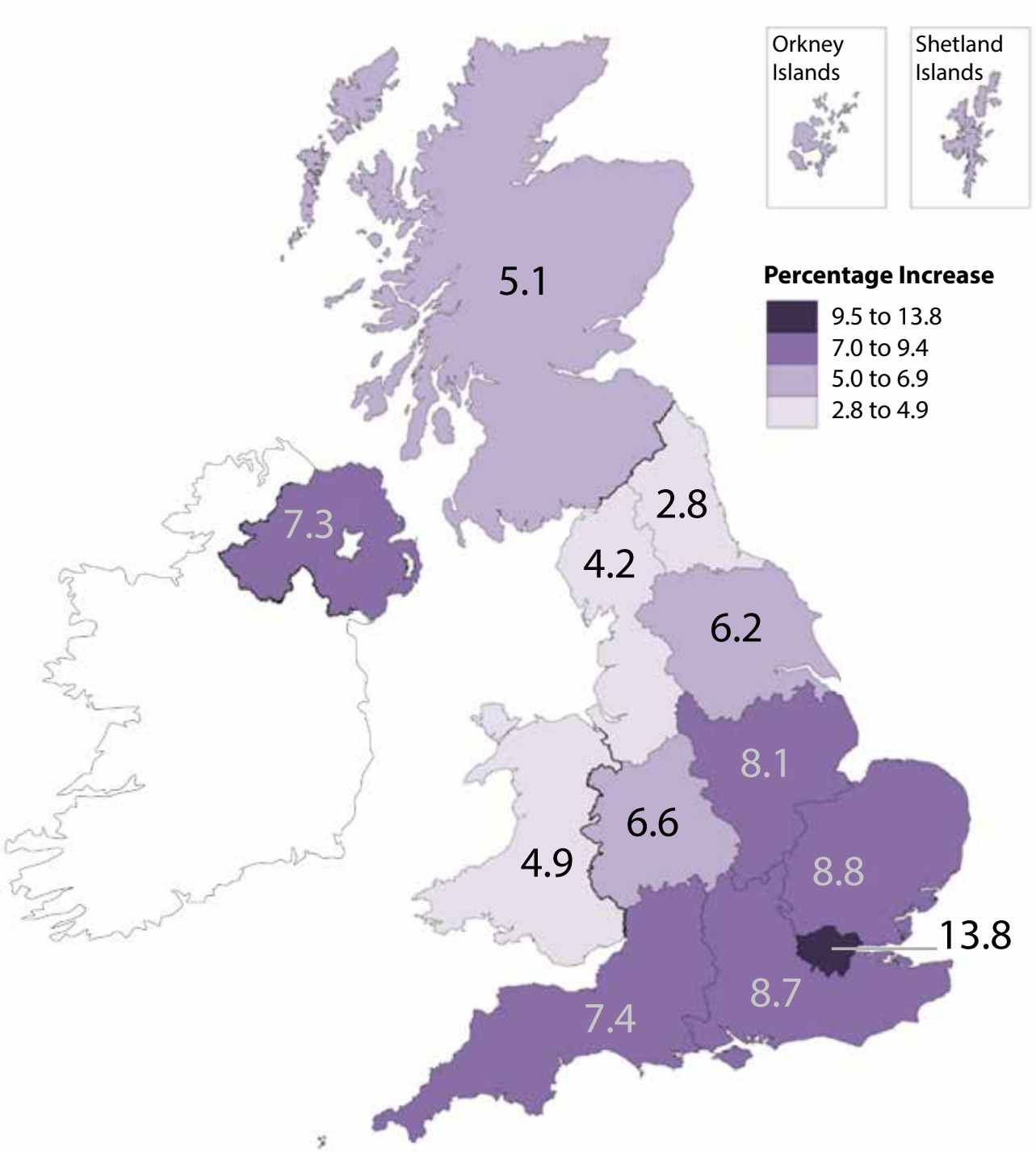
Land in each nation broken down by ecosystem




(Source: UK National Ecosystem Assessment)

**Figure 5a**

**Proportions of different ecosystems within the UK.**




(Source: Office for National Statistics © Crown copyright 2015)

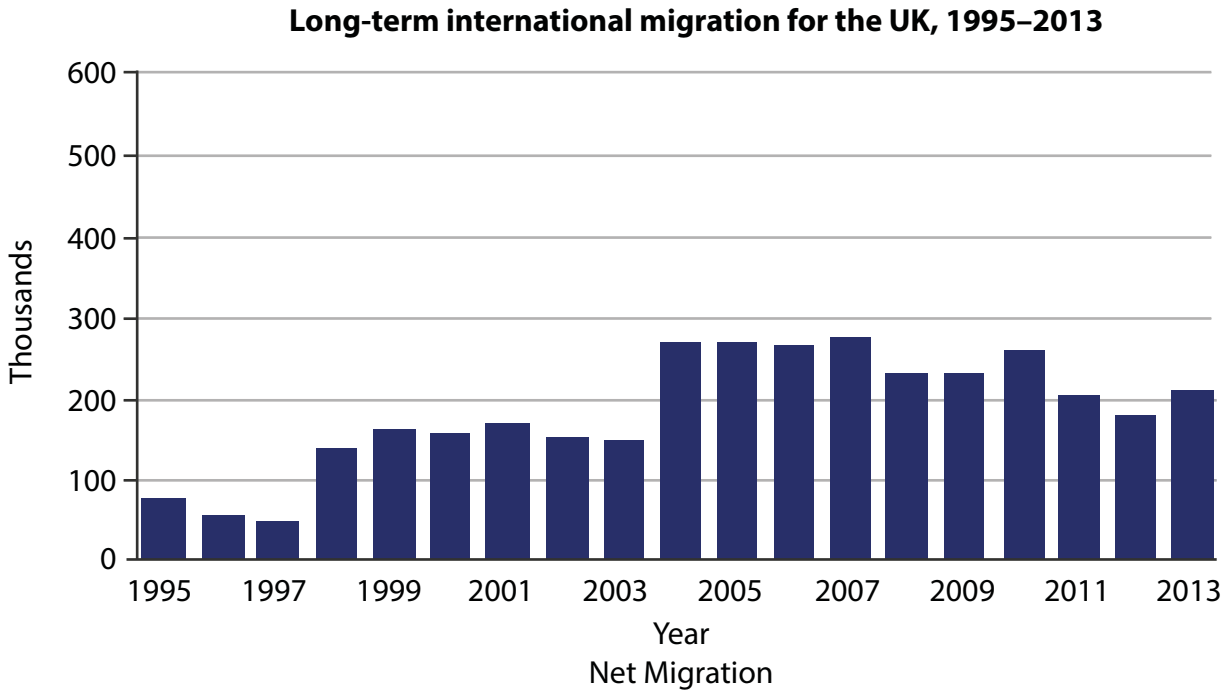
**Figure 5b**

**Percentage population increase in UK regions 2001-2011**

| Region | North East | North West | Yorks and Humber | East Midlands | West Midlands | East of England | London | South East | South West | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Area (ha) | 960 | 1700 | 1840 | 2830 | 1530 | 2660 | 170 | 2520 | 2780 | 16990 |

**Figure 5c**

**Amount of greenbelt in England (2011).**




(Source: from: Office for National Statistics. © Crown copyright 2015 )

**Figure 5d**

**Net migration for the UK, 1995 to 2013.**

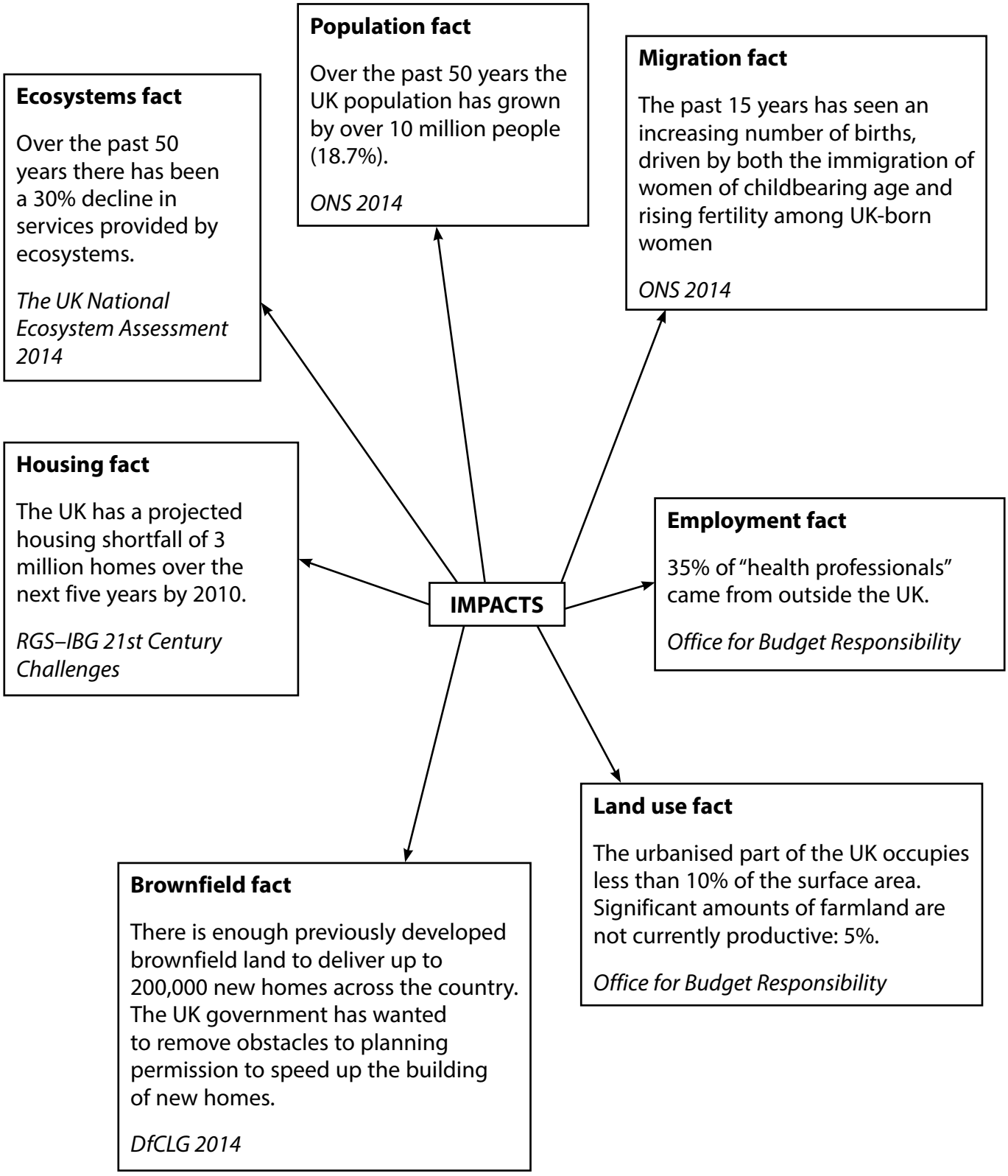



**Figure 5e**

**Social, economic and environmental facts about the UK.**

## Paper 3 Mark scheme

| Question number | Answer | Mark |
|---|---|---|
| 1(a) | Award 1 mark for one of the following, a maximum 1 mark:<br><br>use a float/ping pong ball/cork/orange/stick (1)<br><br>use a flow meter with a smaller impellor (1).<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 1(b) | Tape measure/ruler/chain/stopwatch<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 1(c) | Award 1 mark for identification of a reason and a further mark for an explanation of the reason, up to a maximum of 3 marks:<br><br>the sampling points are just below the confluences (1), therefore this is where you would expect a change in the discharge of the river (1) so that sampling between confluences is unlikely to show a change in discharge (1)<br><br>stratified sampling will ensure that similar sites are used down the river, e.g. just below the confluence (1), other sampling approaches such as random and systematic (1) will miss the significant changes in discharge (1).<br><br>**Accept any other appropriate response.** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| 1(d)(i) | A | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 1(d)(ii) | Mean depth = 0.28 m (1)<br>Median depth = 0.16 m (1) | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **1(d)(iii)** | Award 1 mark for identification of a reason and a further mark for an explanation of the reason, up to a maximum of 2 marks:<br><br>site 5 is an outlier (1), which means using median, rather than mean ignores the influence of the outlier (1)<br><br>median uses a rank of data whereas mean is an arithmetic measure of central tendency (1), therefore influence of anomalies is ignored (1).<br><br>**Accept any other appropriate response.** | **(2)** |

| Question number | Indicative content |
|---|---|
| **1(e)** | **AO3 (4 marks)/AO4 (4 marks)**<br><br>**AO3**<br>● Reliability is about making judgements on how close conclusions are to the actual changes occurring in the river channel/catchment.<br>● Reliability will be most likely linked to results via methods – evaluation including equipment errors and operator errors.<br>● How far data-collection methods used produced reliable results.<br>● Judgement about limitations of equipment used/ operator error.<br>● Recognition of issue in design methodology/sampling methodology may be flawed in terms of number of sites (spatial) and time of year (temporal).<br>● A supported judgement is reached about the reliability of the results and conclusions.<br>● An evaluation of how far the outcomes can be trusted (or repeated to obtain the same results).<br>**AO4**<br>● There is evidence of using different skills and techniques to identify river changes.<br>● There is evidence of using different skills and techniques to reach conclusions about river changes downstream.<br>● There is evidence of own fieldwork conclusions linked to data and information. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)<br>• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)<br>• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| 2(a) | Award 1 mark for one of the following, maximum 1 mark:<br><br>they could use other students to help hold down the tape (1)<br><br>place stones on the tape (1)<br><br>use of a ruler/chain (1)<br><br>measure and pace the distance (1).<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 2(b) | Award 1 mark for one of the following, maximum 1 mark:<br><br>clinometer (1)<br><br>smartphone app (1)<br><br>pantometer (1)<br><br>**Accept any other appropriate response.** | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 2(c) | Award 1 mark for identification of a reason and a further one mark for an explanation of the reason, up to a maximum of 3 marks:<br><br>the sampling points are where the angle of the beach changes (1), therefore this is where you would expect a change in features of the beach e.g. sediment size and roundness (1) so that sampling between these changes in gradient are unlikely to show how significant change relates to the beach gradient (1)<br><br>stratified sampling will ensure that similar sites are used throughout the width of the beach, e.g. where the angle changes (1), other sampling approaches, such as random and systematic (1), will miss the significant changes (1).<br><br>**Accept any other appropriate response.** | **(3)** |

| Question Number | Answer | Mark |
|---|---|---|
| 2(d)(i) | B | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| 2(d)(ii) | Mean gradient= 7.8 (1)<br>Median gradient = 7 (1) | (2) |

| Question number | Answer | Mark |
|---|---|---|
| 2(d)(iii) | Award 1 mark for identification of a reason and a further mark for an explanation of the reason, up to a maximum of 2 marks:<br><br>site 4 is an outlier (1), which means using median, rather than mean ignores the influence of the outlier (1)<br><br>median uses a rank of data, whereas mean is an arithmetic measure of central tendency (1), therefore influence of anomalies are ignored (1).<br><br>**Accept any other appropriate response.** | (2) |

| Question number | Indicative content |
|---|---|
| 2(e) | **AO3 (4 marks)/AO4 (4 marks)**<br><br>**AO3**<br>● Reliability is about making judgements on how close conclusions are to the actual changes occurring in the coastal stretch/environment.<br>● Reliability will be most likely linked to results via methods – evaluation including equipment errors and operator errors.<br>● How far data-collection methods used produced reliable results.<br>● Judgement about limitations of equipment used/ operator error.<br>● Recognition of issue in design methodology/sampling methodology may be flawed in terms of number of sites (spatial) and time of year (temporal).<br>● A supported judgement is reached about the reliability of the results and conclusions.<br>● An evaluation of how far the outcomes can be trusted (or repeated to obtain the same results).<br>**AO4**<br>● There is evidence of using different skills and techniques to identify coastal processes.<br>● There is evidence of using different skills and techniques to reach conclusions about changes occurring at the coast.<br>● There is evidence of own fieldwork conclusions linked to data and information. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)<br>• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)<br>• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **3(a)** | Award 1 mark for the identification of an appropriate secondary data source and a further 2 marks expansion of how this explicitly supported the enquiry/investigation, up to a maximum 3 marks.<br><br>There are a number of different contexts, e.g.:<br><br>a large scale Goad plan map of the city centre dated 2005 (1) was used to compare current shop types collected as part of the primary fieldwork to establish a rate of shop turnover (1) which helped us to understand whether the town centre was 'healthy' (1)<br><br>ONS neighbourhood statistics/Census data (1) was used to compare housing tenure with our primary data on environmental quality (1) so that we could make an overall judgement about the place (1).<br><br>**Accept any other appropriate response.** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(b)** | Award 1 mark for the identification of a physical feature of the urban area you studied and, and a further mark expansion up to a maximum 3 marks:<br><br>where the land was steepest (1) accessibility was reduced (1) which meant there were fewer larger retail outlets and services and more historical buildings and tourist attractions (1)<br><br>the town centre area was limited by its proximity to the flood plain (1) which resulted in a concentration of retail outlets and light industry on the higher land to the north (1) and open space on the lower land/floodplain.<br><br>**Accept any other appropriate response.** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **3(c)** | Award 1 mark for a disadvantage of the sampling strategy and a further 3 marks for an explanation of this disadvantage, up to a maximum of 4 marks:<br><br>a disadvantage of random sampling is that you can unintentionally introduce bias (1) because you might be drawn to a certain social group (1), which could cause you to oversample them (1) and therefore affect the reliability of the results (1)<br><br>a disadvantage of systematic sampling is that you might miss groups of people (1) because you are only sampling at nth intervals (1), which could cause some views to not be recorded (1) which could skew the results (1)<br><br>a disadvantage of stratified sampling is that you need to access to background population information (1) in order to identify the correct groups to sample from (1) in order to avoid under-/over representation of a particular group within a population (1), otherwise the sample could lead to a biased/unreliable conclusion (1).<br><br>**Accept any other appropriate response.** | **(4)** |

| Question number | Indicative content |
|---|---|
| 3(d) | **AO3 (4 marks)/AO4 (4 marks)**<br><br>**AO3**<br>● The student presented data within only six broad distance categories along the transect, therefore patterns of variation may be hidden within the 250 m interval.<br>● The distribution of the road is unknown and could be clustered in one specific area, producing a degree of bias/not representative of the land use of the whole of the town.<br>● The student has not surveyed between the roads and land use along the roads may be different to the land use between the roads.<br>● The student used only seven categories of land use, which meant some land uses may not fit within the categories selected.<br>● The student's results give a generalised pattern of land use but lack fine grain that would be useful if comparing to an urban geography model.<br>**AO4**<br>● Residential was the dominant land use along the transect.<br>● Industry is found at four of the six transect distances (251-500, 501-750, 751-1000, 1251-1500).<br>● The amount of open space varies moving away from the CBD at the modal class 251-500.<br>● With increasing distance away from the CBD, there is a change in land use, although it becomes less varied past the 751-1000m location. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)<br>• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)<br>• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **4(a)** | Award 1 mark for the identification of an appropriate secondary data source and a further 2 marks expansion of how this explicitly supported the enquiry/investigation, up to a maximum 3 marks.<br><br>There are a number of different contexts, e.g.:<br><br>a large scale Goad plan map of the market town centre dated 2005 (1) was used to compare the current number of outdoor leisure shops with the number in 2005 and to establish the percentage change (1) which helped us to understand the changes in the town which had been brought about by increasing tourism (1)<br><br>Google Street View (1) provided an opportunity to decide the best routes / places to complete a pedestrian count safely (1) which helped us avoid areas of high vehicular parking/hazardous locations (1)<br><br>ONS neighbourhood statistics/Census data (1) was used to compare rural housing tenure in the village with our primary data on environmental quality (1) so that we could make an overall judgement about the impact of 2nd homes in the village (1).<br><br>**Accept any other appropriate response.** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(b)** | Award 1 mark for the identification of a physical feature and a further 2 marks for an explanation of how this feature influences the flows of people, up to a maximum of 3 marks:<br><br>the rural area had a picturesque valley (1), which attracted large numbers of tourists (1) which created tourism congestion, especially in the early afternoon when many people were visiting (1)<br><br>the village centre area was divided into two by a river (1), which resulted in a concentration of services/amenities on the higher land to the north (1) that attracted a higher pedestrian flow (1)<br><br>the village was located on a mountainous area (1) which attracted lots of hill walkers (1). As a result, there was a large number of outdoor shops selling waterproof clothing (1).<br><br>**Accept any other appropriate response.** | **(3)** |

| Question number | Answer | Mark |
|---|---|---|
| **4(c)** | Award 1 mark for a disadvantage of the sampling strategy and a further 3 marks for an explanation of this disadvantage, up to a maximum of 4 marks:<br><br>a disadvantage of random sampling is that you can unintentionally introduce bias (1) because you might be drawn to a certain social group (1), which could cause you to oversample them (1) and therefore affect the reliability of the results (1)<br><br>a disadvantage of systematic sampling is that you might miss groups of people (1) because you are only sampling at nth intervals (1) which could cause some views to not be recorded (1) which could skew the results (1)<br><br>a disadvantage of stratified sampling is that you need to access to background population information (1) in order to identify the correct groups to sample from (1), in order to avoid under-/over representation of a particular group within a population (1), otherwise the sample could lead to a biased/unreliable conclusion (1).<br><br>**Accept any other appropriate response.** | **(4)** |

| Question number | Indicative content |
|---|---|
| 4(d) | **AO3 (4 marks)/AO4 (4 marks)**<br><br>**AO3**<br>● The student presented data within only six broad time categories, therefore patterns of variation may be hidden within the time 8 am to 8pm.<br>● The selection of sites is unknown and could be clustered in one specific area, producing a degree of bias/not representative of the traffic within the whole of the town.<br>● The student has used only six locations next to roads and the patterns of traffic may different in other road locations, e.g. bigger or smaller roads.<br>● The student used only seven categories of vehicle, which meant some transport types may not fit within the categories used.<br>● The student's results give a generalised pattern of traffic but lack fine grain that would be useful if comparing to a comparable market town for instance.<br><br>**AO4**<br>● Overall, cars are the modal class for the whole day but tourist coaches are the modal class from 10 am to 12 pm and 2 to 4pm and bicycles are 12 to 2pm.<br>● Buses could run a consistent service, but their proportion of total traffic could vary, depending on the volume of traffic on the road.<br>● Motorbikes always have a small proportion but taxis have no representation from 2 to 4 and lorries have no representation from 4 to 6<br>● Tourist coaches are their highest proportion from 10 to 12 and 2 to 4. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–3 | • Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)<br>• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4) |
| Level 2 | 4–6 | • Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4) |
| Level 3 | 7–8 | • Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)<br>• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4) |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(i)** | England | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(a)(ii)** | Award 1 mark for each of the following up to a maximum of 2 marks:<br><br>dominance of mountains and moorlands in Scotland (1)<br><br>lowland areas tend to be more enclosed (1)<br><br>England grows more arable crops (1).<br><br>**Accept any other appropriate response.** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(i)** | 9.3 | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(b)(ii)** | Award 1 mark for each of the following, up to a maximum of 2 marks:<br><br>some areas have fewer job opportunities (1)<br><br>some areas have fewer transport connections than others (1)<br><br>an elderly population may not want to move from the area in which it has lived for a long time (1)<br><br>some areas have high house prices that are too expensive for incoming population to afford (1)<br><br>**Accept any other appropriate response.** | **(2)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(c)(i)** | C | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(c)(ii)** | 230 | **(1)** |

| Question number | Answer | Mark |
|---|---|---|
| **5(c)(iii)** | Award 1 mark for a point about migration and a further mark for explanation of why is significant, up to a maximum of 4 marks:<br><br>many short-term migrants decide to extend their stay (1) but may not extend their visa (1)<br><br>the IPS survey is not judged to be robust (1) as it was initially designed to examine trends in tourism (1)<br><br>hard to collate accurate data for some groups of people (1) such as asylum seekers/refugees/those who enter illegally (1).<br><br>**Accept any other appropriate response.** | **(4)** |

| Question number | Indicative content |
|---|---|
| 5(d) | **AO2**<br>• The UK's population has been increasing over the past 50 years and particularly in the last 15 years.<br>• One of the main causes of the UK's population growth has been the large net migration (more people moving to the UK to live compared with the number of those leaving to live in a different country).<br>• Population growth will lead to social, political, economic and environmental challenges.<br>• The term 'environmental' can be defined to include aspects of both natural and man-made features.<br>• The demand for resources, in particular land to build homes, of a growing population which exerts ever-increasing pressure on the ecosystems and their goods and services.<br>• Development can threaten ecosystems by disrupting the cycling of nutrient and interdependence of biotic and abiotic conditions they need to function.<br>• Other factors, such as climate change, can also contribute to the increased pressure on the UK's ecosystems.<br>• Distribution and characteristics of the UK's main terrestrial ecosystems means that they are not all in suitable locations/land for development.<br>**AO3**<br>• Many of the UK's most valuable ecosystems are already heavily protected from development and new housing, so the impact of population growth will vary across the UK.<br>• Many of the migrants to the UK are economic migrants and will therefore only be attracted to certain parts of the country where employment opportunities exist. This means that the demand for resources and the resultant pressure on UK ecosystems will be unevenly distributed. For example, more economic migrants will be attracted to London and the surrounding area compared to northern Scotland.<br>• Population growth may have indirect impacts on UK ecosystems. For example, a rise in the population in one area may increase levels of noise and air pollution and exasperate waste disposal challenges – which can have a knock-on effect on local ecosystems.<br>• The UK's ecosystems are not wholly natural: they are part of a managed landscape; it is possible to adapt approaches to managing ecosystems in response to our growing population and the associated pressures and challenges that this brings. However, the capacity to manage an ecosystem to completely mitigate the threats posed by population growth vary across the UK and are often dependent on funding available from local councils, |

| Question number | Indicative content |
|---|---|
| | the presence of conservation groups and discussions linked to cost-benefit analysis.<br>• The future trends of population growth and net migration are unknown, as are trends of natural increase. This may lead to different scenarios in terms of how much land is required for new housing. Also, figures for inbound and outbound migration are very unreliable so more secure data on this issue is required for the modelling and planning for different scenarios to be accurate.<br>**AO4**<br>• Figure 5a shows that England has the largest percentage of people living in urban areas already; England also has the smallest percentage of woodland (only about 10%).<br>• Figure 5b shows that population growth is uneven: the largest population increases are in London (13.8%), SE England (8-9%), SW England (7.4%) and Northern Ireland (7.3%), whereas Wales (4.9%), Scotland (5.1%), NW England (4.2%) and NE England (2.8%) experience a smaller increase.<br>• Figures 5a and 5b together indicate that highest levels of population growth are in England and Northern Ireland where farming is the largest ecosystem. Also, Figure 5e indicates that a large proportion of these farming areas are unproductive, e.g. 8.5% of farmland in SE England unproductive.<br>• Figure 5c shows that the areas of high population growth (5b) are also areas with highest levels of greenbelt. For example, SE England has 2 520 ha and the SW has 2 780 ha.<br>• Figure 5d does not provide evidence that net migration will continue to increase in the future. |

| Level | Mark | Descriptor |
|---|---|---|
| | 0 | No acceptable response. |
| Level 1 | 1–4 | • Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)<br>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)<br>• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (A04) |
| Level 2 | 5–8 | • Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)<br>• Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4) |
| Level 3 | 9–12 | • Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2)<br>• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)<br>• Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4) |

| Marks for SPGST | | |
|---|---|---|
| **Performance** | **Marks** | **Descriptor** |
| SPaG 0 | 0 | *No marks awarded:*<br>● Learners write nothing.<br>● Learner's response does not relate to the question.<br>● Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning. |
| SPaG 1 | 1 | *Threshold performance:*<br>● Learners spell and punctuate with reasonable accuracy.<br>● Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.<br>● Learners use a limited range of specialist terms as appropriate. |
| SPaG 2 | 2–3 | *Intermediate performance:*<br>● Learners spell and punctuate with considerable accuracy.<br>● Learners use rules of grammar with general control of meaning overall.<br>● Learners use a good range of specialist terms as appropriate. |
| SPaG 3 | 4 | *High performance:*<br>● Learners spell and punctuate with consistent accuracy.<br>● Learners use rules of grammar with effective control of meaning overall.<br>● Learners use a wide range of specialist terms as appropriate. |

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