edexcel

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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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.

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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)

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(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)

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(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)

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

(1)

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(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)

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.....

(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

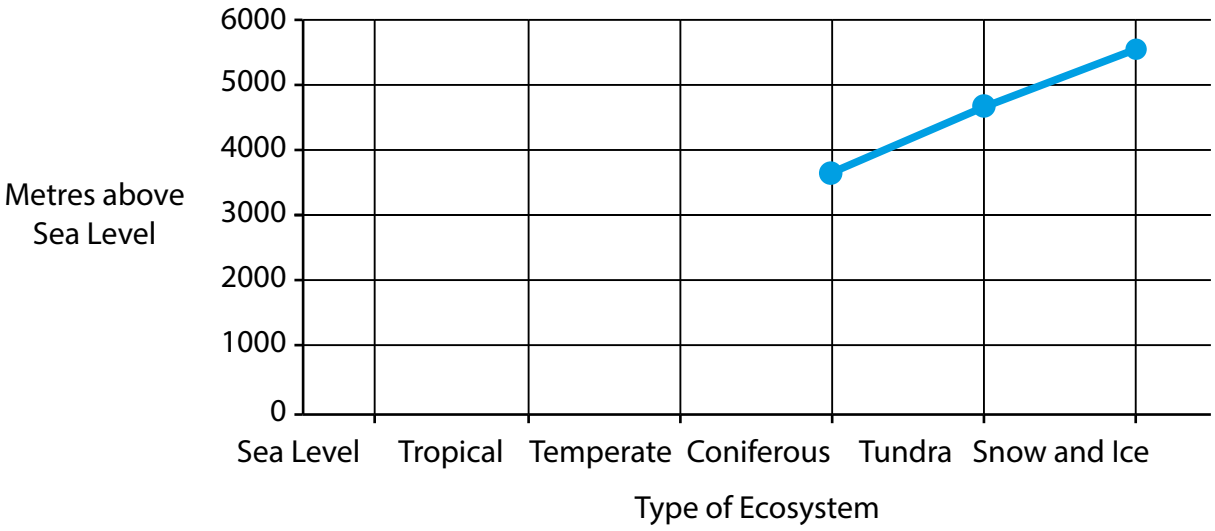

Figure A

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 .....

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2 .....

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

(4)

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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)

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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)

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(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.

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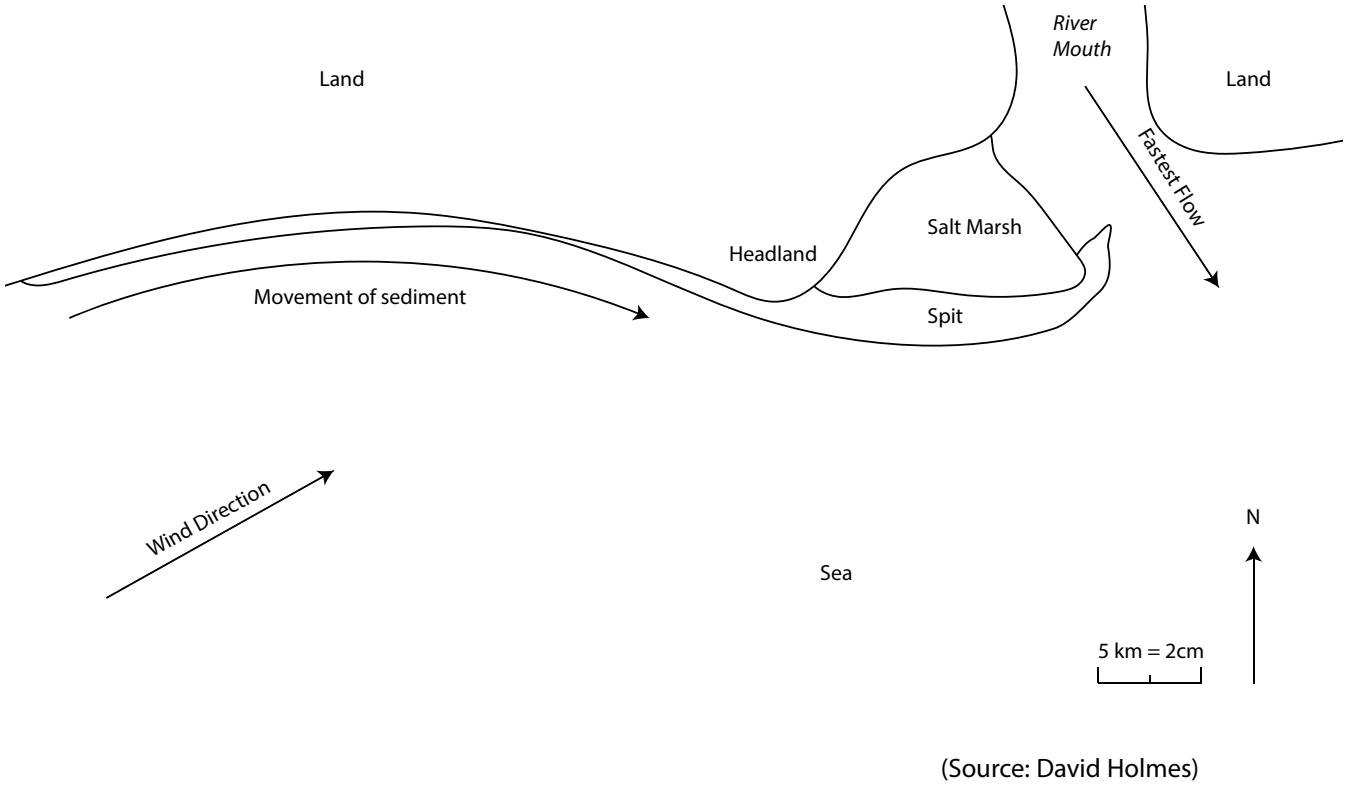
(Source: thetimes.co.uk/tto/multimedia/archive/00361/117597242_361456c.jpg)

Figure 1

A diagram showing a stretch of coastline in Southern England



(Source: David Holmes)

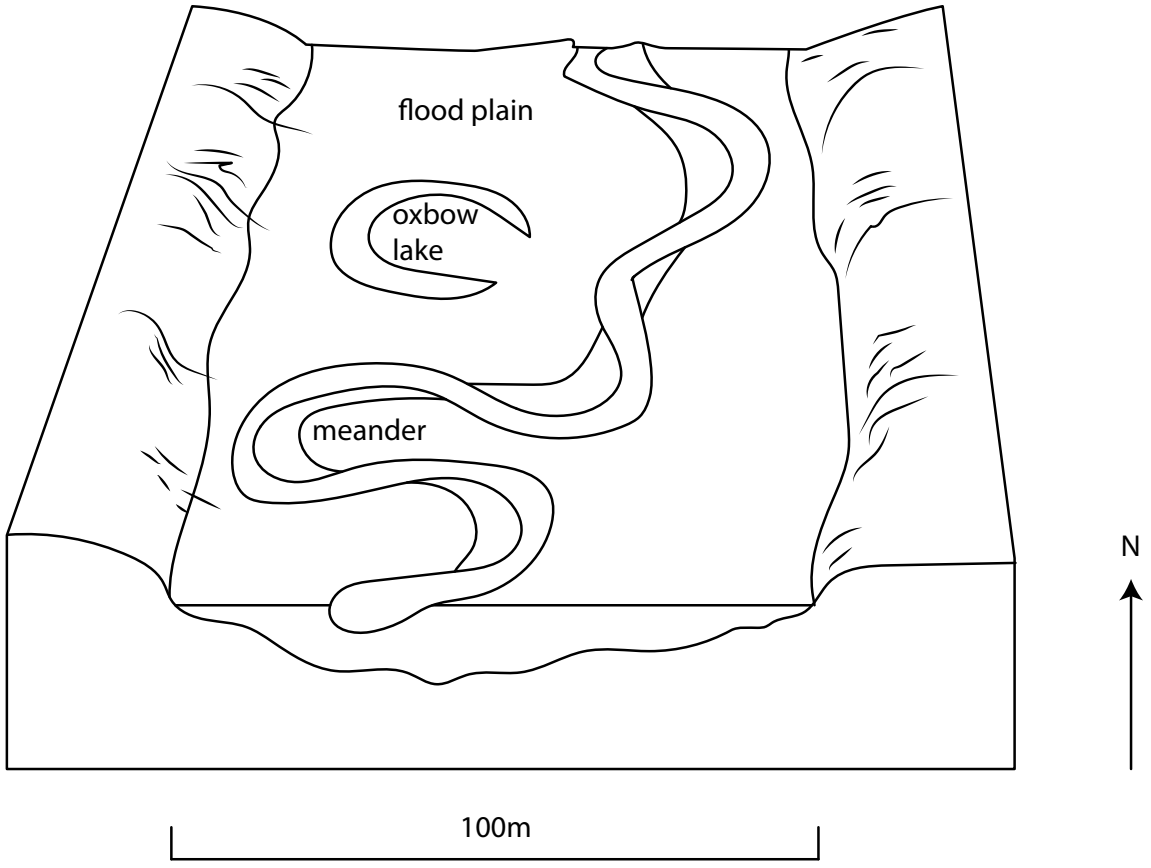
Figure 2

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)

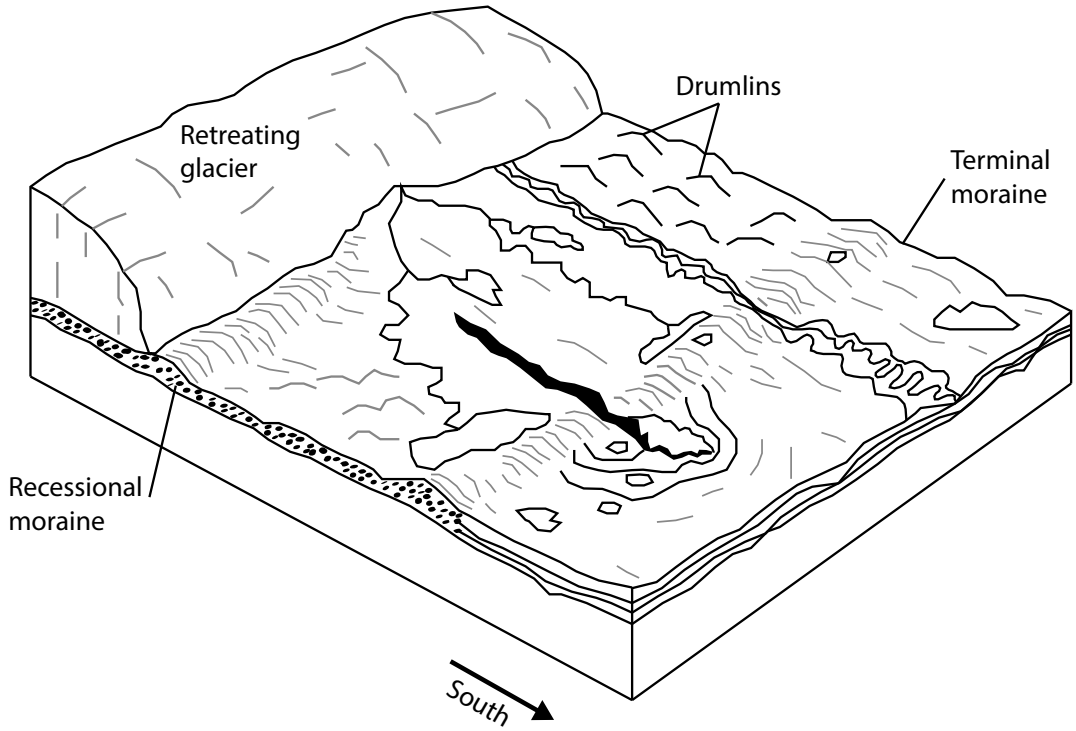
Figure 4

A diagram showing the formation of an oxbow lake

(Source: David Holmes)

Figure 5

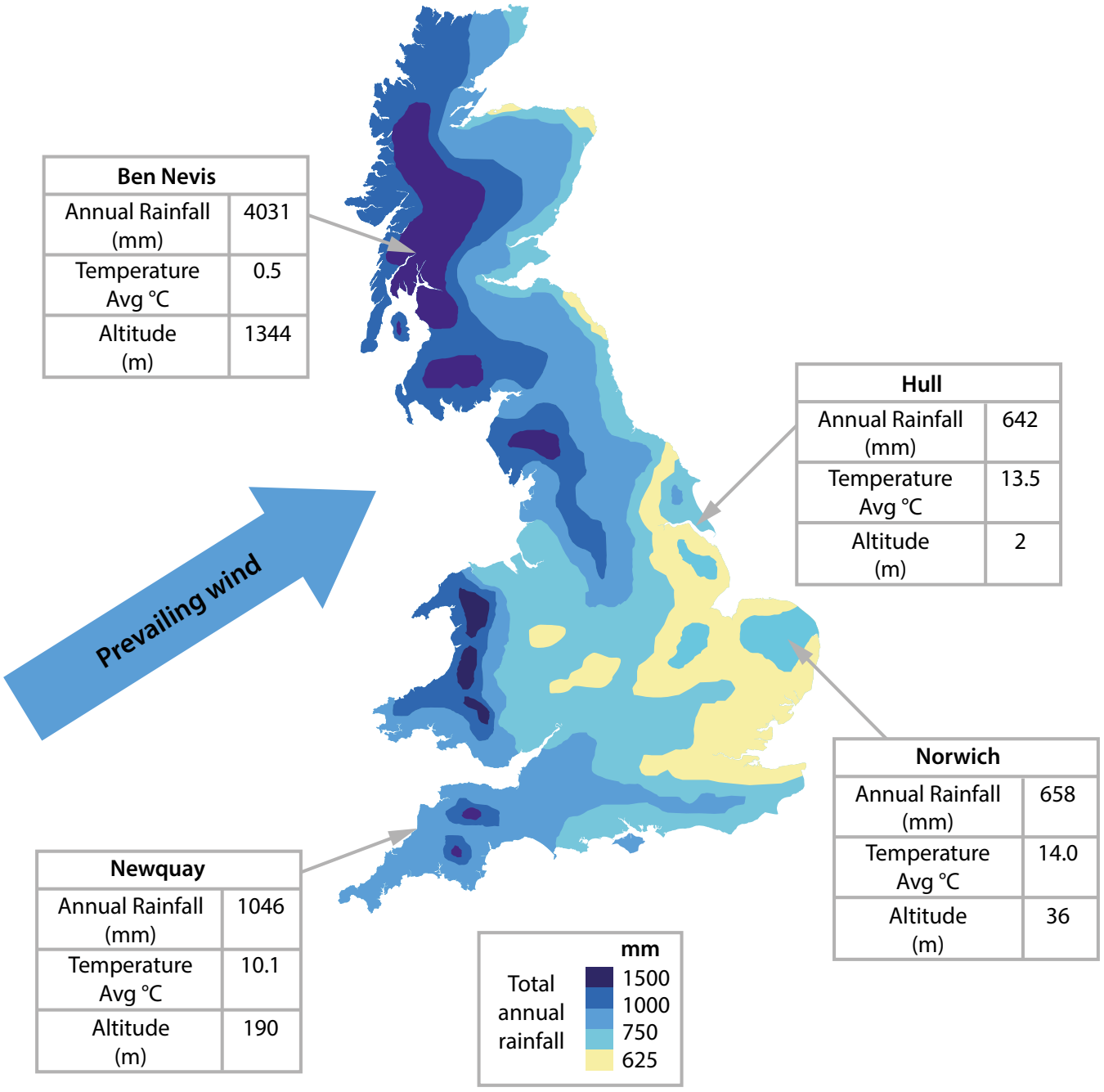
A glacial landscape in North Wales



(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

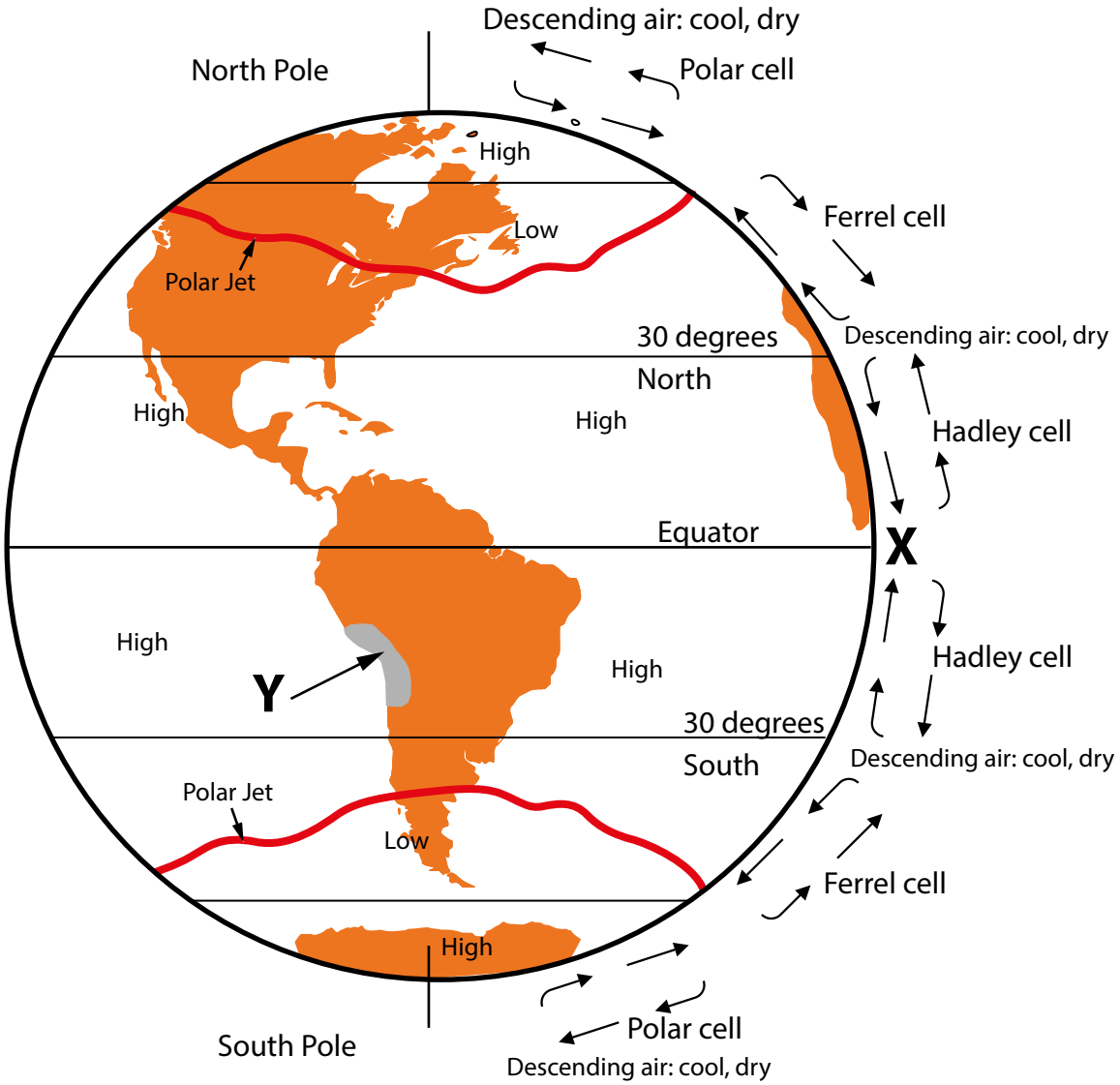


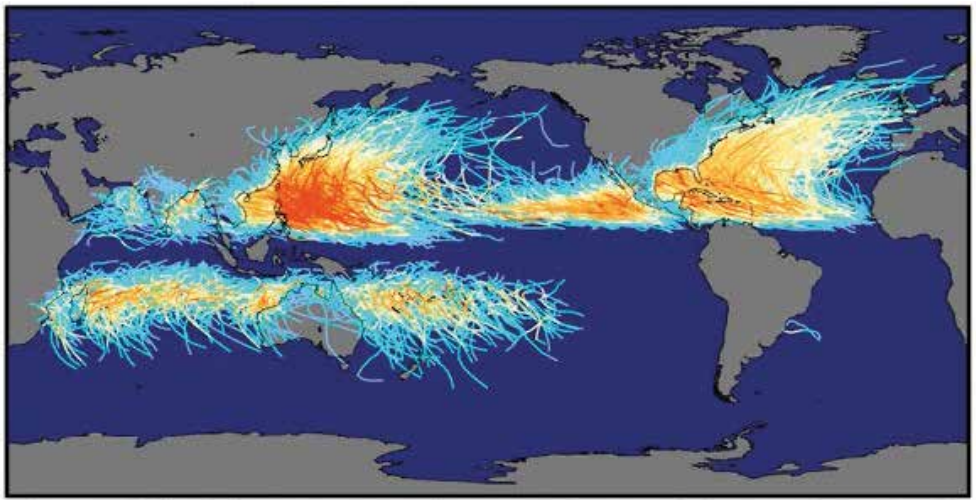
Figure 8

Global atmospheric circulation

(Source: © Neo Edmund/Shutterstock)

Figure 9a

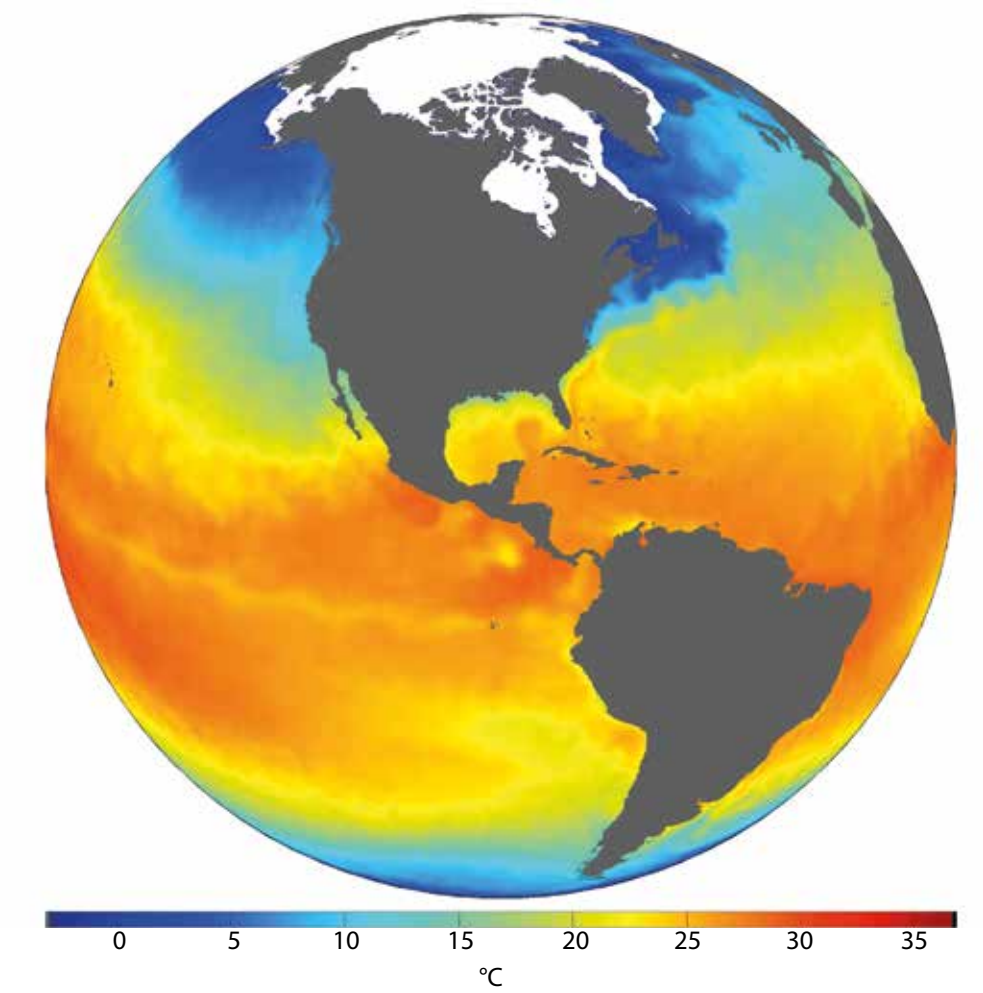
Satellite image of a cyclone



(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

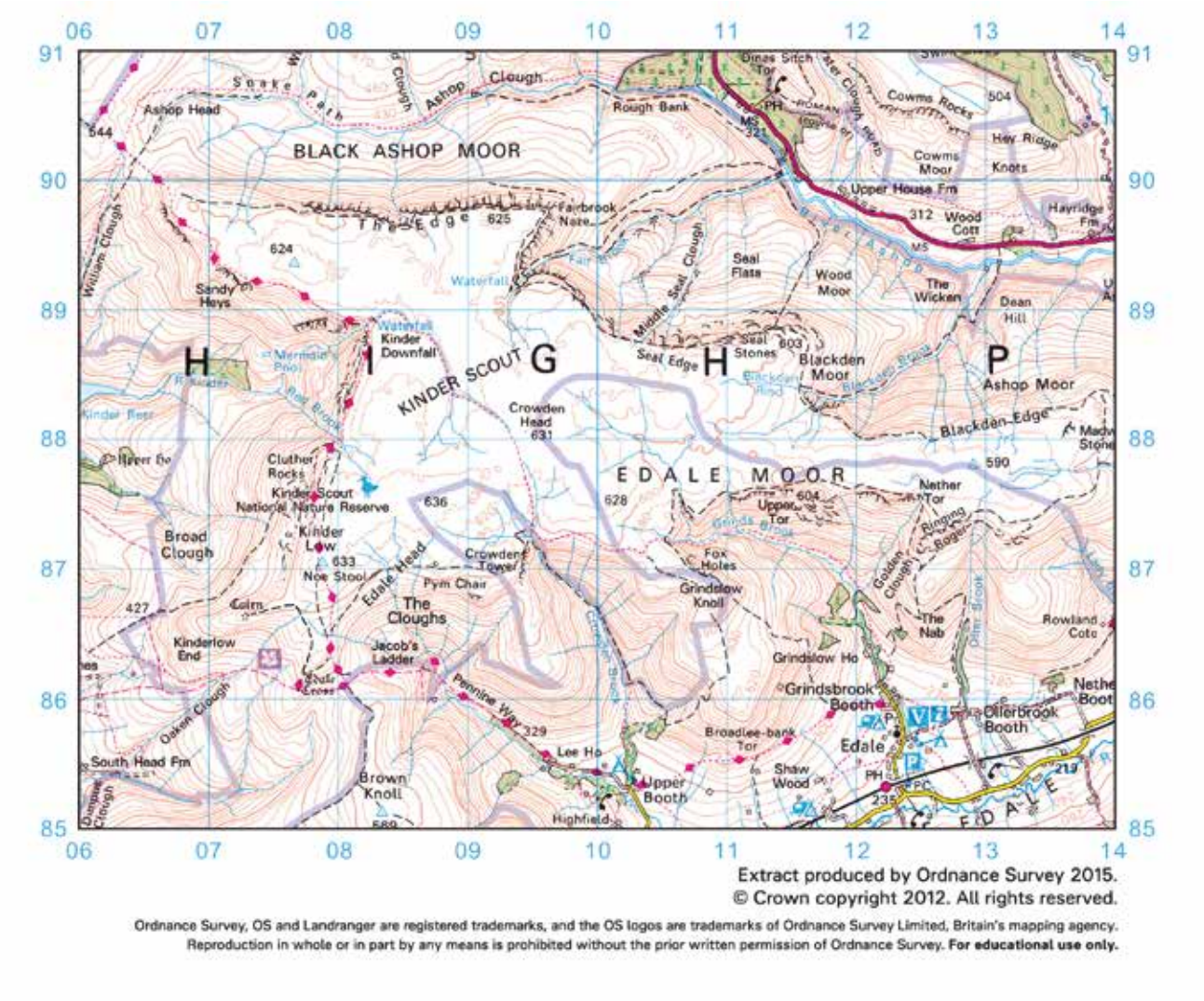
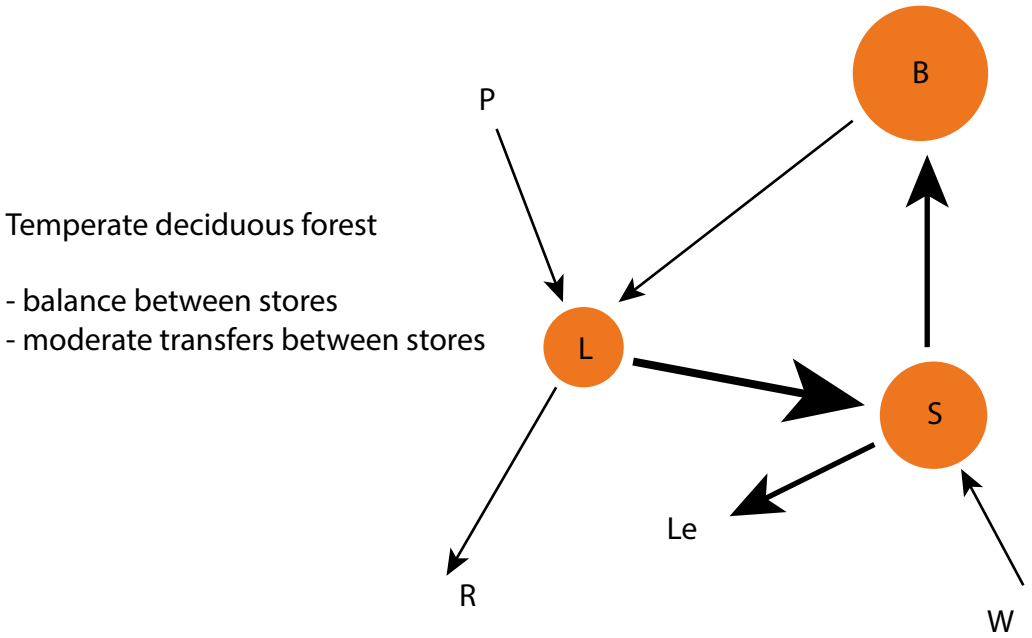


Figure 10

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



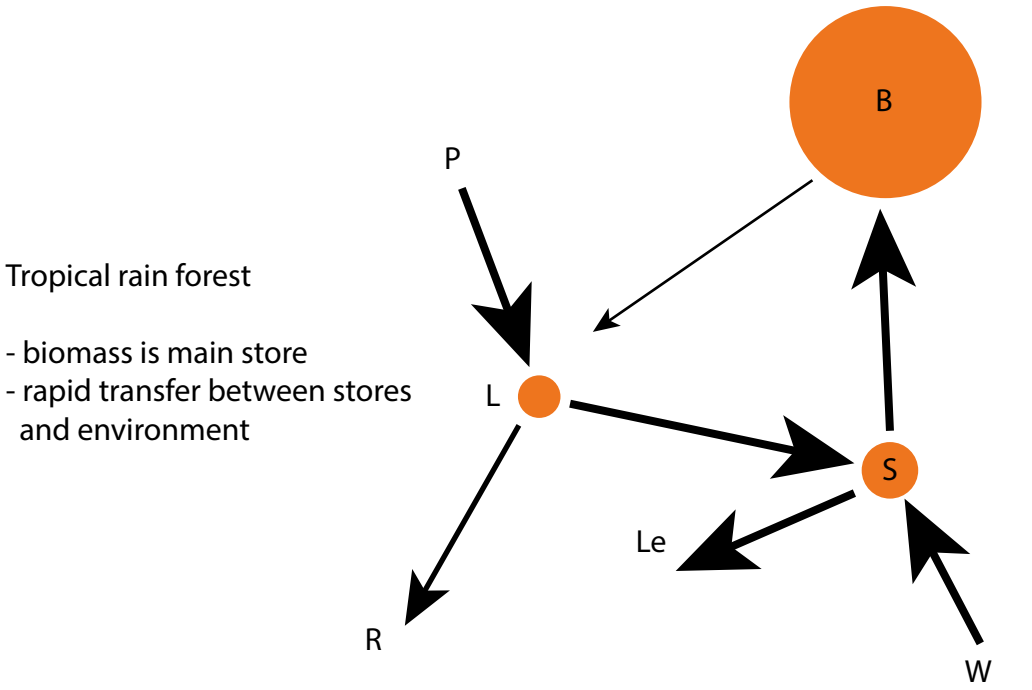


Figure 11

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: Rocks formed in layers (1) Idea of compaction/cementation (1) Oldest rocks are at the bottom/youngest at the top (1) May contain fossils of plants and/or animals (1) **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: Forestry (1) Urbanisation/settlement (1) Deforestation (1) Building of roads/rail (1) Reject farming/agriculture **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: Farming clears the natural surface vegetation/trees (1), which can result in a mono-culture and/or artificial landscape (1) Farming can plant the same crop over and over (1) which can give landscapes the same appearance (1) 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) Farming has led to sheep in upland landscapes (1) which has created a deforested and grazed/grassy landscape (1) **Accept any other appropriate response**	**(2)**

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

Question number	Answer	Mark
2(a)(ii)	Award 1 mark for one of the following, maximum 1 mark: Root action is where roots grow into the ground (1) Chelation/influence of soil acid (1) Action of animals such rabbit burrowing (1) Reject erosional processes **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: Large (manmade) boulders are placed along the cliff line (1) which protect the coast by acting as a sea wall (1) The gaps between the rocks allow water through (1), therefore slowly dissipating energy (1) **Accept any other appropriate response**	**(2)**

Question number	Indicative content
2(a)(iv)	**AO3 (4 marks)/AO4 (4 marks)** **A03** • Wave direction is determined by the prevailing wind resulting in the wash proceeds up the beach at an angle to the coast. • 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. • 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. • 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. • 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. • 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. • The estuary is important in the diagram as it limits the growth of the spit due to the deep water and the currents. • Transportation occurs until a change in direction of the coastline. **A04** • The prevailing wind is south-westerly. • The long shore drift is moving west to east. • There is evidence of a narrow strip of beach/sand in front of the mainland (before the headland). • There is fast water flowing out of the river mouth in a north south direction. • The landform is a recurved spit, which curves towards the north/mouth of river estuary. • 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) • 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) • 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) • 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: River cliff (1) Slip off slope/point bar (1) Meander (1) Flood plain (1) **Accept any other appropriate response**.	**(1)**

Question number	Answer	Mark
3(a)(ii)	Award 1 mark for one of the following, maximum 1 mark: Carbonation/acid rain (1) Dissolution/solution weathering (1) **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: Making the channel wider or deeper (1) increasing the capacity of the river to hold water (1) Where a channel is straightened/meanders are removed (1) so water can pass through the area more quickly (1) Concreting of beds and banks (1) reducing friction/increasing velocity/reducing flood risk to that area (1) **Accept any other appropriate response**	**(2)**

Question number	Indicative content
3(a)(iv)	**AO3 (4 marks)/AO4 (4 marks)** **AO3** • 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. • 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. • 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. • 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. **AO4** • The river flows from north to south. • There are alternate areas of erosion (river cliffs) and deposition (point bars). • The river meanders across the flood plain. • The flood plain is approximately 100 m wide. • The diagram indicates differential rates of erosion and deposition, with the greatest amount of erosion taking place on the outside of meanders, • There is a wide valley floor with hills/cliffs/steep valley sides on either side, • 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) • 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) • 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) • 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: Corrie/cirque/cwm (1) Glacial trough (u-shaped valley) (1) Arête (1) Tarn/glacial lake (1) Reject Truncated spurs, Roche Moutonnée **Accept any other appropriate response**	**(1)**

Question number	Answer	Mark
4(a)(ii)	Award 1 mark for one of the following, maximum 1 mark: Freeze thaw weathering (1) Exfoliation – extreme changes in temperature (1) Reject answers that describe chemical or biological weathering. **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: Climbers (1) can cause rock to become loose as they put supports on the cliffs (1) Walkers (1) can lead to soil erosion along upland footpaths with high footfall (1) Walkers leave waste in upland areas (1), which does not decompose in cold conditions (1) Reject answers that are about how the upland landscape affects human activity **Accept any other appropriate response**	**(2)**

Question number	Indicative content
4(a)(iv)	**AO3 (4 marks)/AO4 (4 marks)** **AO3** • An important process from the diagram is ice stagnating and melting. • This is due to a change in the glacial mass balance, ie differences inputs and outputs to the system. • The drumlin is made up of rock eroded by the glacier further upstream. • Ancient glaciers would have carried debris, which would have accumulated at the base. • Melting ice at the base of the glacier causes material to deposited, as there is too much to be carried. • Drumlins are formed underneath the glacier so are formed behind the terminal moraine. • Drumlins build up over time, layers of glacial till and rock. • Terminal moraines mark the maximum extent of the glacier at a given time. • The long axis of drumlins aligns with the flow of glacial ice. • As the glacial continues to flow, it reshapes the drumlin with a steep 'stoss end' and gradually-falling 'lee slope' in front. **AO4** • Ice moved from north to south. • At the end of the valley glacier is a terminal moraine. • At the base of the valley glacier is an area of rich debris rock. • 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) • 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) • 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) • 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: Orbital changes/Milankovitch cycles (1) Solar variation/sunspot activity or cycles (1) Volcanic eruption (1) Reject human causes such as the EGE/global warming. **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: Ice cores (1) Pollen records (1) Tree rings (1) An example of a historical sources (e.g. painting) (1) **Accept any other appropriate response**	**(2)**

Question number	Answer	Mark
5(a)(iii)	Award 1 mark for the calculation of the correct answer = 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. 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). 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. **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. 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). The high pressure conditions (1) lead to cloudless skies/warm temperatures (over 20°) (1) because of the lack of condensation (1). **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. De-forestation leads to a reduced tree cover (1) which means that there is less interception (1). Intensification of farming (1) may involve unsustainable use of irrigated water in crop production (1). Construction of large reservoirs (1) may cause drought downstream by reducing the flow of water (1). Reject natural causes of drought. **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. Domestic water supply shortages (1), leading to hosepipe bans/lack of water for swimming pools (1) as the need for water conservation increases (1). 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). 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). **Accept any other appropriate response.**	**(3)**

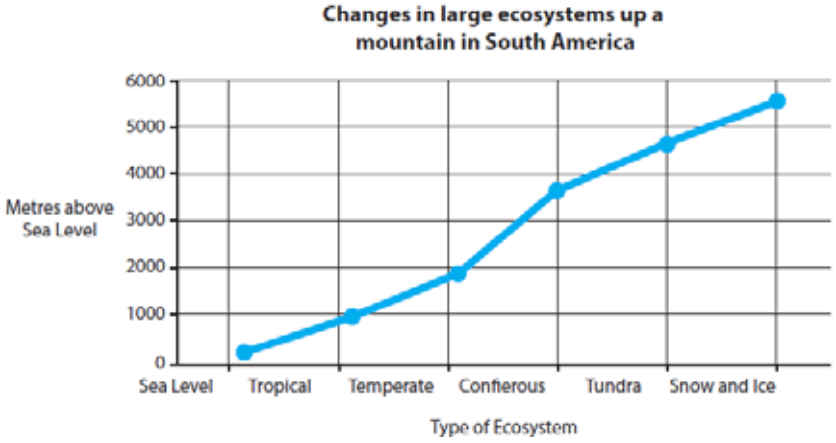
Question number	Answer	Mark
6(c)(i)	Eye/eye wall Reject centre, middle, hole.	**(1)**

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. 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). 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). 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). 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). **Accept any other appropriate response**	**(4)**

Question number	Indicative content
6(d)	**4 Marks for AO2 / 4 marks for AO3** **AO2** • Potential environmental impacts include flooding, damage to environment from industrial damage, contaminated ground water/water supplies, soil erosion leading to crop damage/failure. • Different groups of people respond to the environmental impacts, including individuals, organisations and local governments/the national government. • Individuals can construct makeshift flood defenses to prevent their land from being flooded (e.g. sandbags). • 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. • Organisations identify hazard-prone areas at risk of flooding/environmental damage. • The national government ensures that relevant monitoring bodies produce the necessary information in prediction/forecasting the weather. • The national government may mobilise military/emergency aid resources to prepare flood defenses/respond to contamination/protect crops and wildlife. **AO3** Evaluation will depend on specific case study but may include: • 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. • Individual responses have a relatively small impact on reducing environmental damage. They can protect their own land/environment but not much beyond that. • 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). • National governments can have the biggest impact because they have the resources, capacity and authority to respond to environmental effects on a large scale. • 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) • 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) • 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) • 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 Reject living components. **Accept any other appropriate response**	**(1)**

Question number	Answer	Mark
7(b)(i)	Award 1 mark for each correct plot (2 x 1) Award 1 mark for joining dots together (1)  	**(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. Tundra can exist only above 4000 m (1) because other trees cannot grow in the thin soil at the top of a mountain (1). 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). Tropical can exist only under 900 m above sea level (1) because it cannot survive in the colder temperatures associated with higher altitude (1). **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: Heathlands (1) Woodland (1) 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: Foodstuffs or specific examples (1) Medicines or chemical/genetic material for medicines (1) Timber/wood (1) Recreation or other cultural value (1) **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. Drip tips (1) to remove excess water in conditions of over 2000mm of precipitation (1). Buttress roots (1) to stabilise the trees as they increase in height (1). Waxy leaves (1) to stop water infiltrating into leaf and rotting it (1). Tall straight tree trunks (1) to grow straight up towards the light to out compete other species (1). Epiphytes sink roots into a host plant (1) so they do not need to sink roots to the ground (1). **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. **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). **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). **Litter store** – smaller in the TRF (1) as the rate of decomposition is much greater because of the high humidity (1). 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). 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)** **AO2** • 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. • Tropical rainforest structure will be threatened by rising sea levels caused by climate change. • Tropical rainforest biodiversity could be threatened by animals migrating because they cannot adapt to the changing climate of their current habitat. • Deciduous woodland structure could be threatened by nutrient and moisture depletion in soils, leading to reduced tree growth. • Deciduous woodland biodiversity could be threatened, as increased numbers of pests are introduced into ecosystems through migration. **AO3** • 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. • 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). • 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. • 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) • 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) • 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) • 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* • Learners write nothing. • Learner's response does not relate to the question. • 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* • Learners spell and punctuate with reasonable accuracy. • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate.

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

.....

.....

(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 .....

.....

.....

.....

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

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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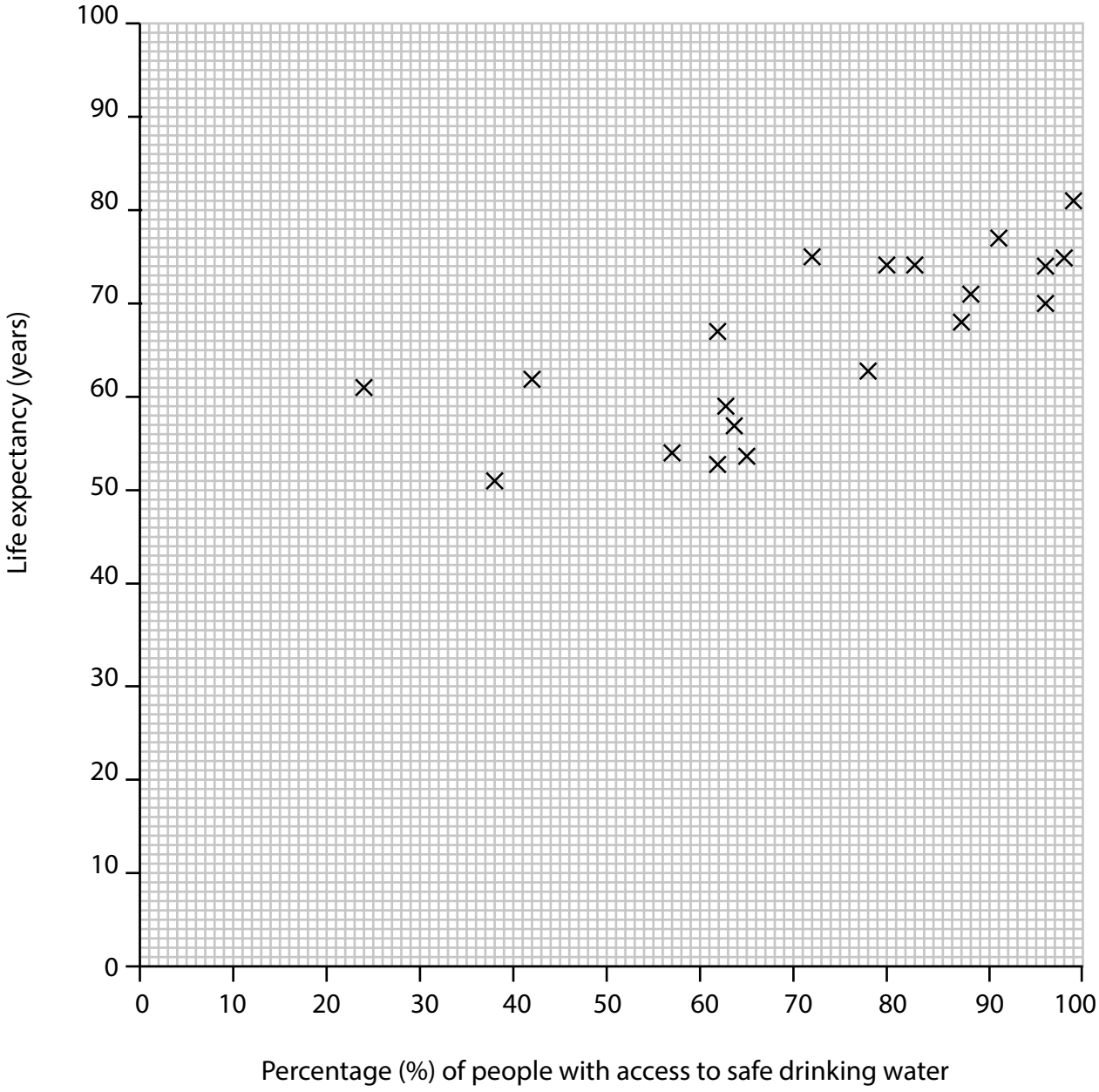
Disadvantage

(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 .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(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)

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)

(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

(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.

Turn over ▶

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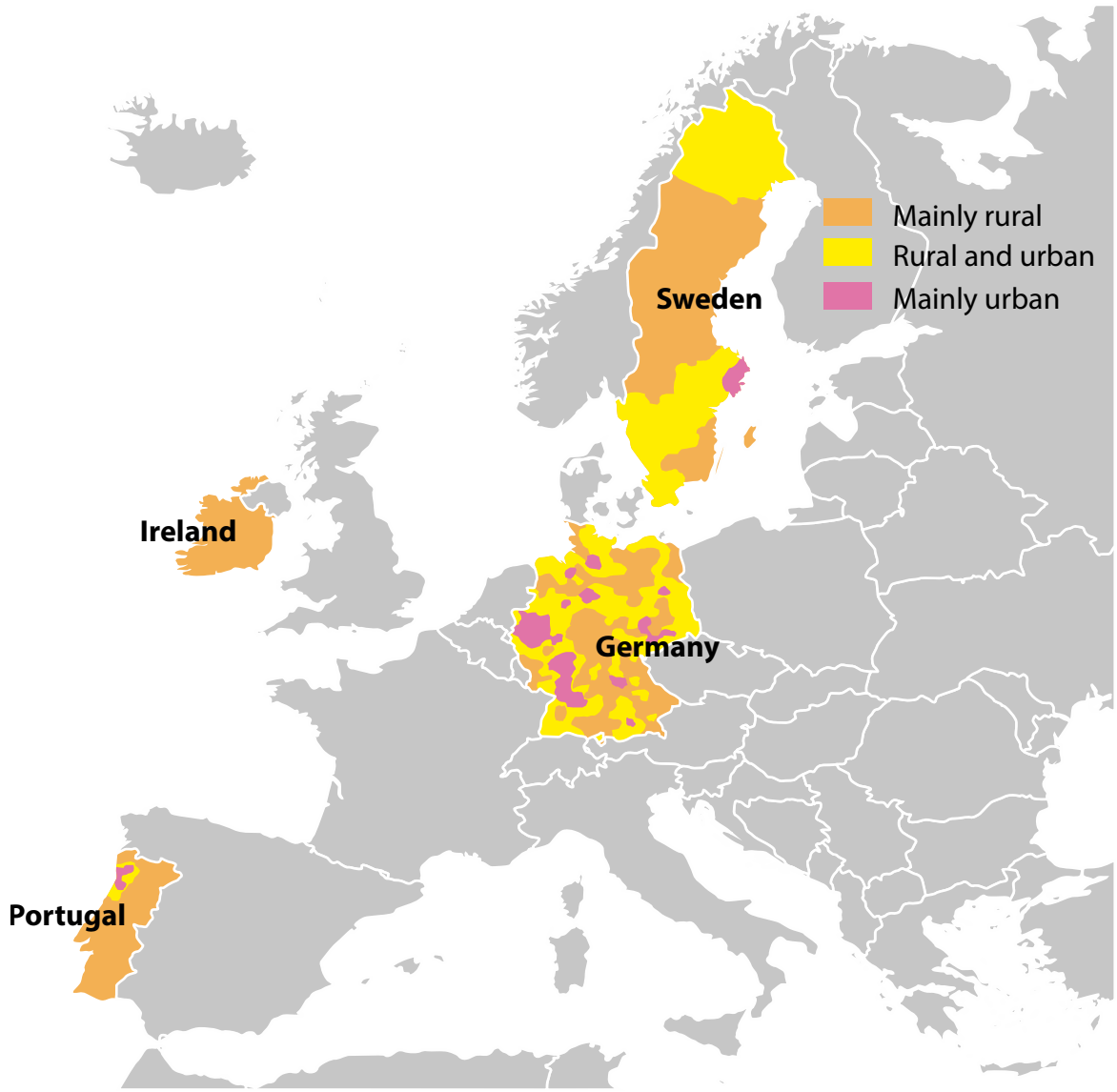
PEARSON



(Source: © Eurostat)

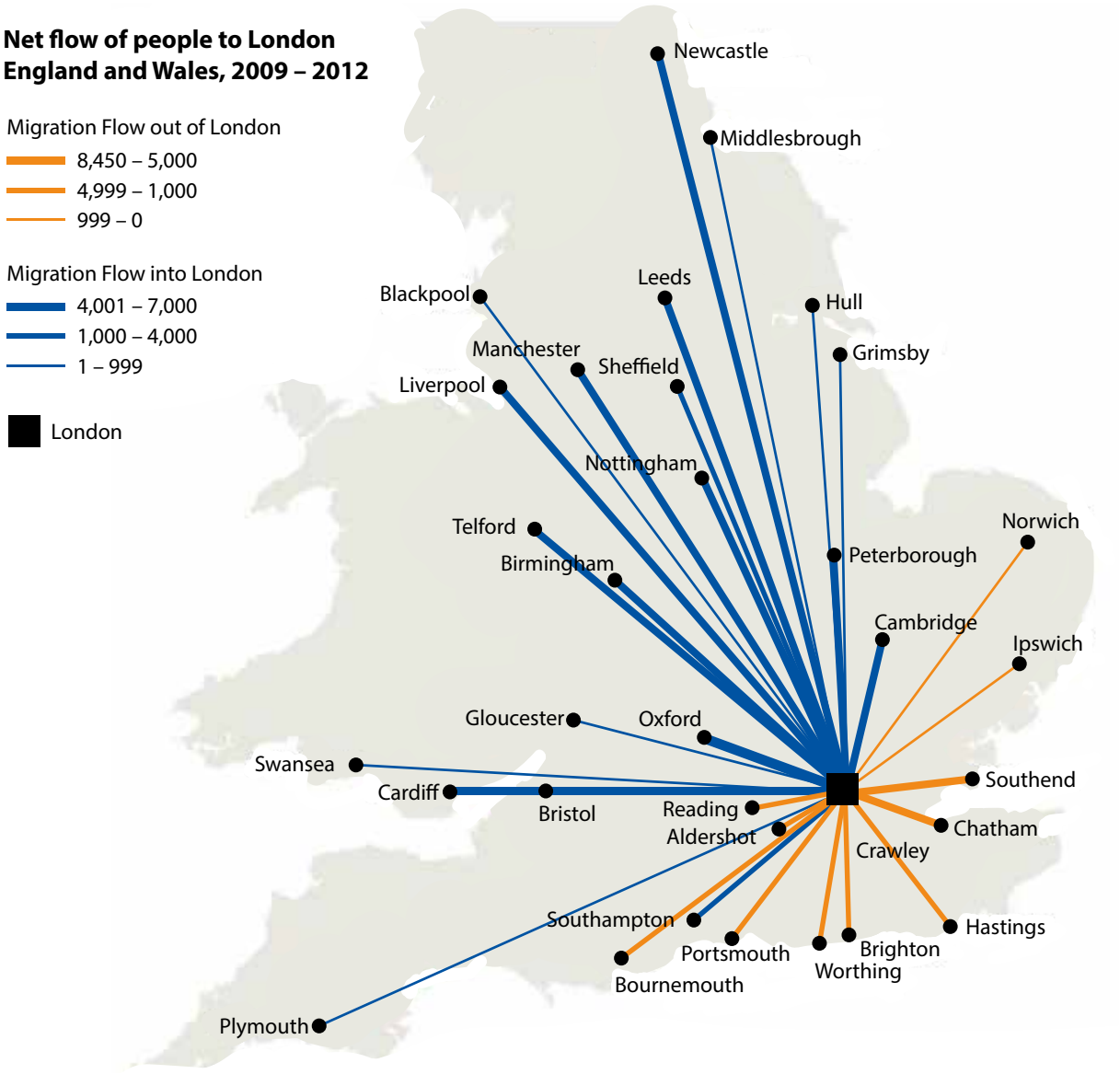
Figure 1a

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

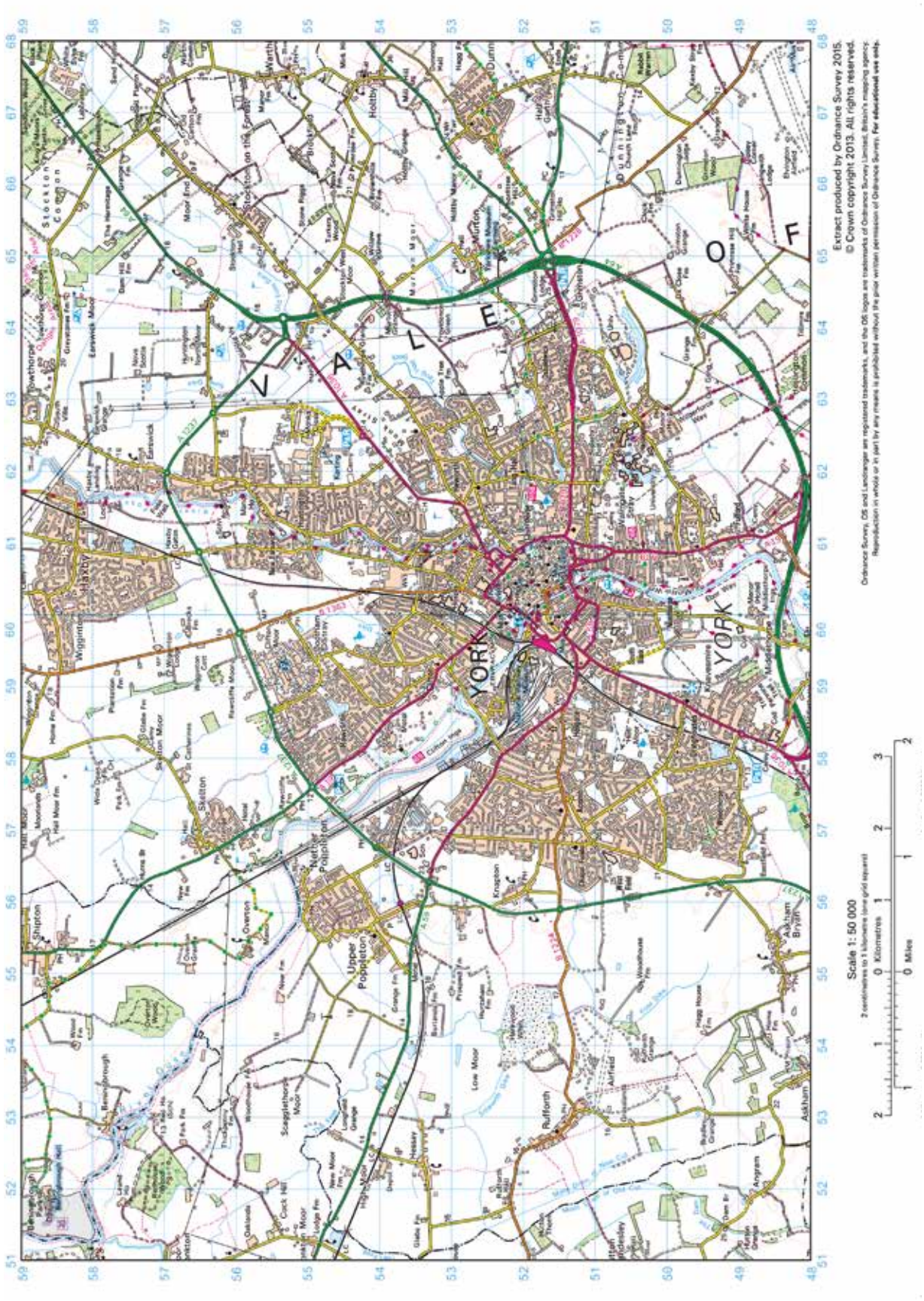


Figure 1d

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

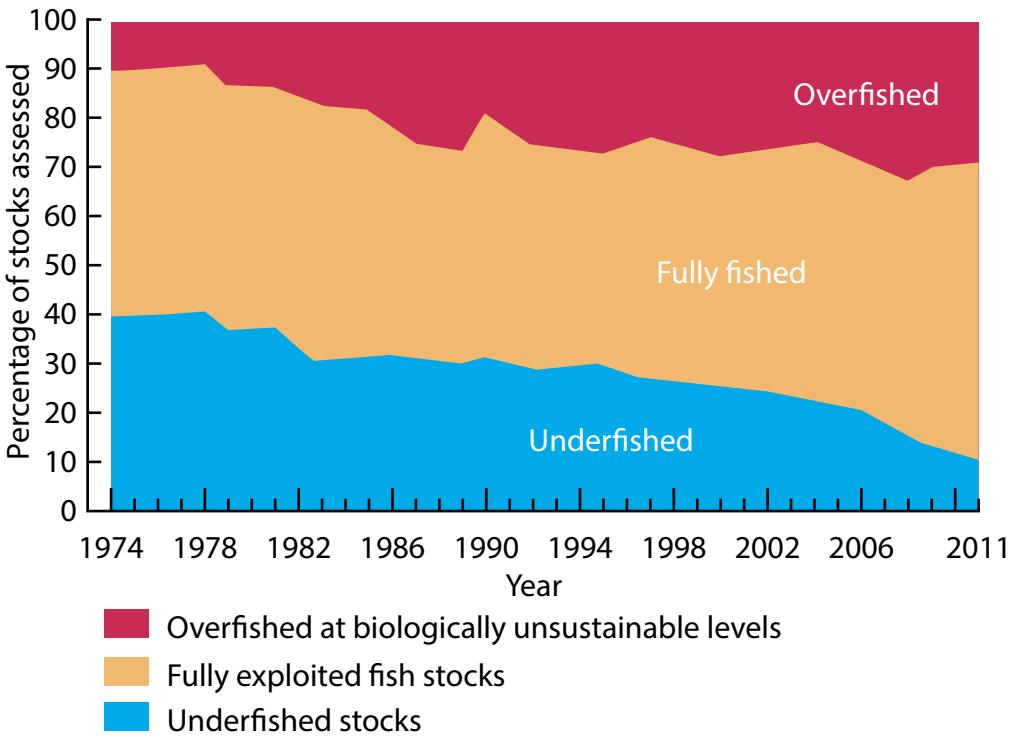
Figure 2a

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)

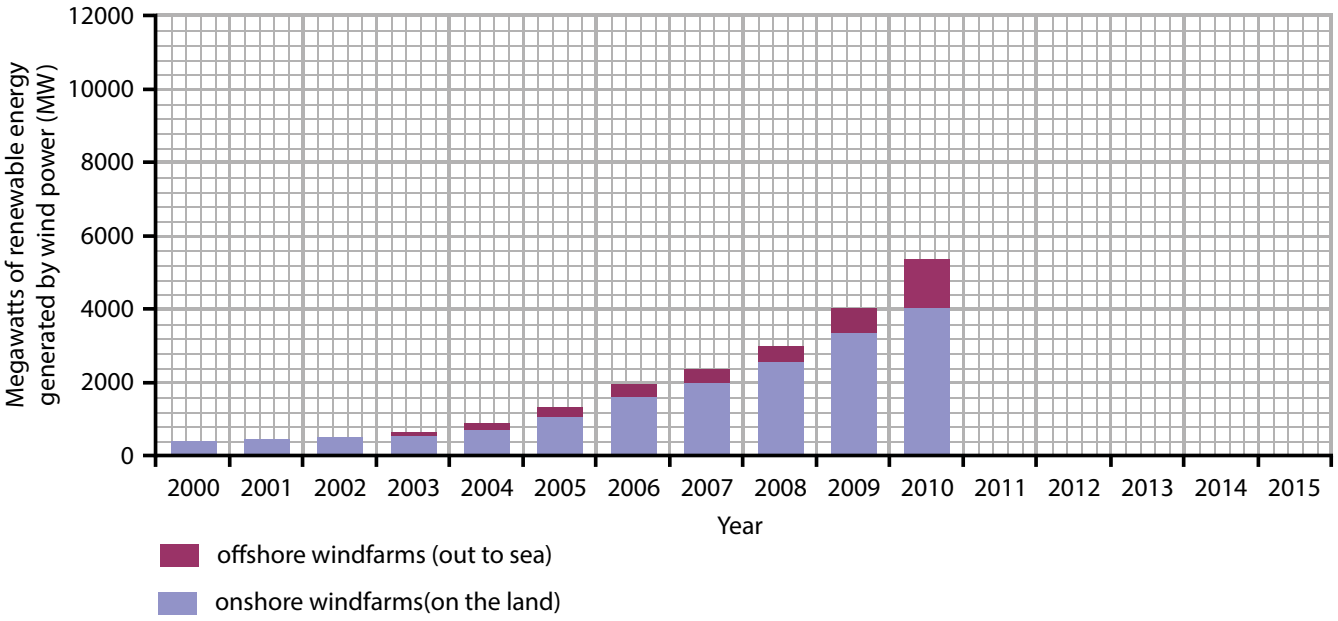


Figure 4

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

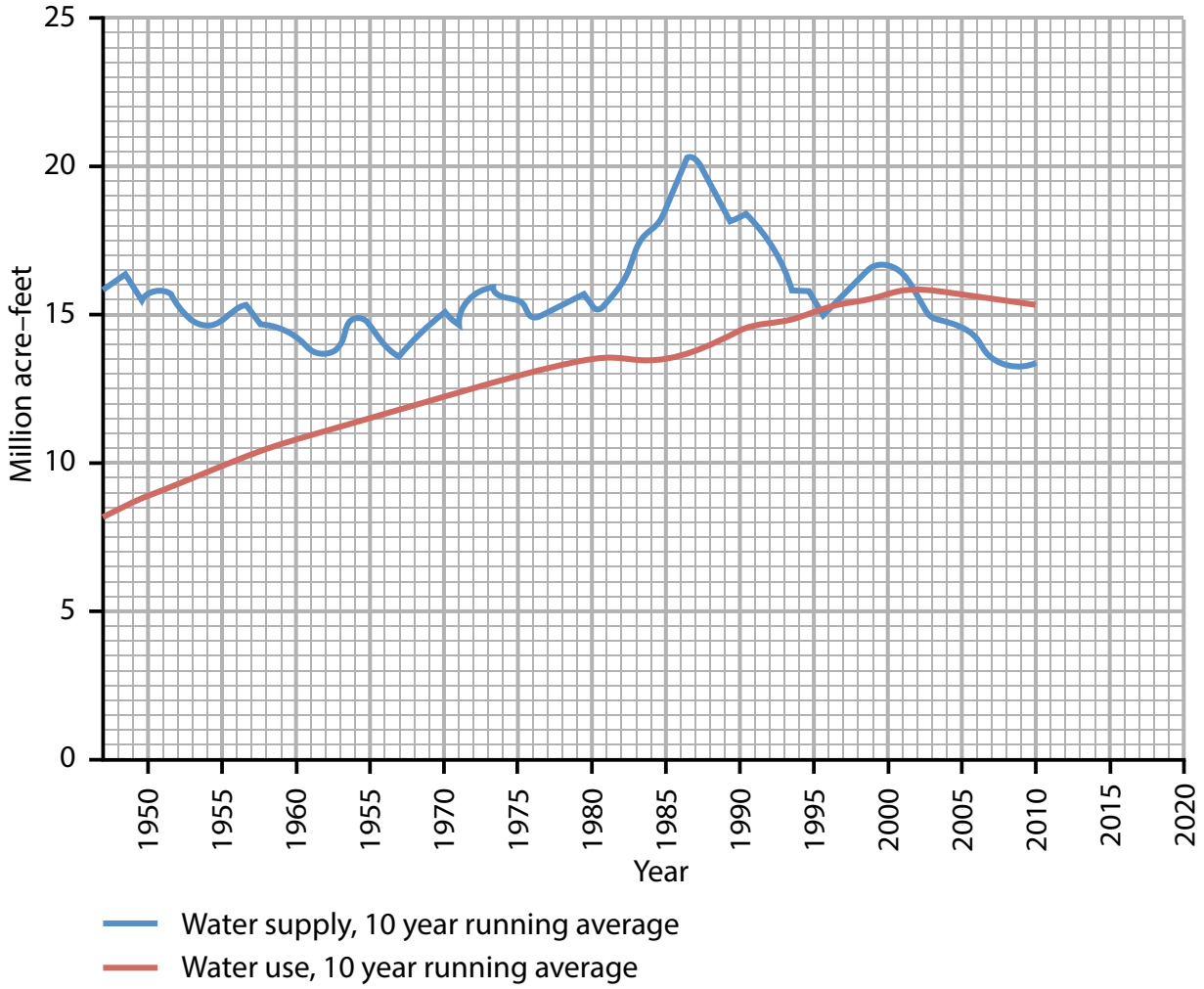


Figure 5

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). **Accept any other appropriate response**	(1)

Question number	Answer	Mark
1(b)(ii)	Award 1 mark for each of the following, maximum 1 mark: Urbanisation has been most rapid in LICs (1) Rate has slowed down in HICs since the 1960s (1) Global rates slowed in the 1990s (1) Today, Africa has the fastest rate of urbanisation (1) Today, developed countries have about 75:25 urban-rural split (1) Reject trends pre-1960 Projected trends, responses with no temporal element / idea of change. **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: Overgrown vegetation (1) Broken windows/boarded up (1) Deserted/no industrial activity (1) Derelict (1) Neglected (1) **Accept any other appropriate response**	(2)
Question	**Answer**	**Mark**

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

Question number	Answer	Mark
1(c)(iii)	Award 1 mark for each of the following, maximum 1 mark: Unemployment (1) Lower family incomes (1) Loss of community cohesion (1) De-population (1) **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: Using land use maps or satellite images (1) Using graphs of employment sector/unemployment (1) Using GIS (1) **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: Increased competition for jobs (1) Increased strain on services/schools/housing (1) Overcrowding (1) Changes the population structure of London (1) Reject impacts on rural areas or areas where the migrants have left (i.e. outside London). **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: 3.5 km (1) 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: Flat land (1), which is easy to build on (1) Near A/main roads (1), which provide good access to places (1) Located near the centre of York (1) so commuters do not have far to travel (1) Nature reserve/fields nearby (1), which provide a relaxing/quiet living environment (1) **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: Growth in out-of-town shopping centres (1), which offered cheaper prices (1) took customers away from the CBD (1) Many shops in the CBD lost customers (1), which meant that they were making less money (1) and some eventually closed down (1) Many CBDs have become pedestrianised (1), with improved street lighting (1) to make them more appealing to shoppers (1) **Accept any other appropriate response**	**(3)**

Question number	Indicative content
1(g)	**AO2 (4 marks)/AO3 (4 marks)** **AO2** • Quality of life is a combination of different factors such as health, sanitation, education, employment, wealth, access to clean drinking water. • 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. • 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. • Social and economic issues such as the spread of disease, crime, unemployment and education need to be managed. • The UK and developing/emerging countries manage the economic, environmental and social issues in different ways. • 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. • 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. **AO3** Evaluation will depend on the specific case studies, but may include: • 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. • 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. • 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. • 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. • 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) • 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) • 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) • 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. **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: The correct addition of total GDP ($billions), 37.3 (1) The division of this number by 7, the total number of countries, arriving at a mean of 5.3 – or a number that rounds to 5.3 – US$ billion (1) 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: Income per capita/GNI per capita (1) Life expectancy (at birth) (1) Education/mean years of school and expected years of schooling (1) **Accept any other appropriate response**	**(2)**

Question number	Answers	Mark
2(b)	C 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. Advantages Large-scale government investment and political support/will (1) has the potential to affect positively the lives of a large number of people (1). Political and government support provides conditions for a multiplier effect/'take off' (1) which could lead to rapid economic development (1). The local economy could be improved (1) so there are more funds available to spend on healthcare, education and training (1). Disadvantages High capital expenditure costs (1), which could lead to government debt/the diversion of spending from education/healthcare to pay off the debt (1). 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). 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). **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: 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). Text could be coded into positive and negative impacts (1) and then counted (1). 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. • People drinking safe water do not get diseases and live longer (1). • Development projects such as building wells or irrigation have improved overall basic living standards (1). **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: Birth rate has decreased (1) due to wider availability of contraception (1) Death rates have decreased (1) as there is better health care (1) Life expectancy is increasing (1) because there is a greater awareness of the causes of disease (1) There is a population of working age (1), infant mortality is reducing and people are surviving to adulthood (1) **Accept any other appropriate response.**	**(4)**

Question number	Indicative content
2(f)	**AO2 (4 marks)/AO3 (4 marks)** **AO2** • There has been a growth in private investment by TNCs into developing/emerging countries. • 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. • 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. • Negative social and economic impacts of this growth could include the idea of 'exploitation' workers. • Understanding the impacts of changes to economic sectors can benefit a country can have positive and negative impacts on people and the economy. • Social/economic positive impacts are likely to be linked to increased wages/standard of living and the growth of a consumer society. • Social/economic negative impacts are likely to be linked to workers being exploited – low pay – long working hours – poor working conditions. **AO3** • Growth in private investment by TNCs will often result in a combination of positive and negative impacts for people and the economy. • 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. • 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. • 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) • 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) • 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) • 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: humans (1) worms (1) dogs (1) cattle (1). **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: increase in overfishing creates stock reduction for the future (1), which leads to an unsustainable stock level for future generations (1) more overfishing leads to a decline in the percentage of stocks that are underfished (1) because of a reduction in juvenile fish (1) increase in marine pollution/impact of global warming on the oceans (1), leading to a general decline in the health of fish stocks (1). **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: fewer fish left in the sea/ocean (1) use of data from Figure 3 to support (1) reducing the amount of fish that predators eat (1), therefore having knock-on effects further up the food chain (1). increases the species further down the food chain that the fish would have consumed (1) a decline in fish stocks in one area (1) could lead to other un-tapped parts of the ocean might becoming exploited (1). **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 Accept 3500 to 3700 MW	**(1)**

Question number	Answer	Mark
4(b)(ii)	24.5% 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: government renewable energy targets (such as Kyoto Protocol) (1) because it incentivises investment in renewable energy sources (1) desire to increase the UK's energy mix (1), which will reduce reliance on fossil fuels (1) government subsidies for renewable energy (1), which makes investment in renewable energy sources more viable/cheaper (1) public dislike of onshore windfarms/'nimbyism' (1) has led to an increase in offshore wind farm construction (1). **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: increased incomes/personal wealth (1), leading to growth in consumerism of products that require electricity (1) growth in ownership of hi-tech products (1) that requires electricity/electrical products to function (1) rising car ownership/2 to 3-car families (1), which increases the demand for oil (1). **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: 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) 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) **Accept any other appropriate response**	**(4)**

Question number	Indicative content
4 (e)*	**AO2 (4 marks)/AO3 (4 marks)** **AO2** • 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. • 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. • The development of non-renewable energy resources can have **positive** impacts on people such as providing employment opportunities. • 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. • 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. **AO3** • 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. • 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. • 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. • 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) • 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) • 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) • 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* • Learners write nothing. • Learner' response does not relate to the question. • 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* • Learners spell and punctuate with reasonable accuracy. • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate.
SPGST 2	2–3	*Intermediate performance* • Learners spell and punctuate with considerable accuracy. • Learners use rules of grammar with general control of meaning overall. • Learners use a good range of specialist terms as appropriate.
SPGST 3	4	*High performance* • Learners spell and punctuate with consistent accuracy. • Learners use rules of grammar with effective control of meaning overall. • 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% 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: 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) the Government might have been trying to conserve water since 1988 (1) which has led to a fall in water supply (1) 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) increased amount of rainfall / wetter seasons (1) increased the water supply during the early-mid 1980s (1). **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: changes in levels of rainfall (1) such as periods of drought or above average rainfall (1) over-abstraction of ground water (1), leading to lower levels of discharge into the river basin (1) climate change (1) leading to long term decline in precipitation/river flow since 1987 (1) **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: to ensure/increases the availability of (clean) drinking water (1), which will improve the health of the population (1) to reduce flooding (1), allowing for the necessary infrastructure for industry to be established (1) to increase opportunities for leisure and recreation (1), which could bring jobs to an areas (1) to prevent water supply becoming polluted (1), which has a negative impact on the health of the local population (1) water resources are finite (1) but the global population/demand is growing (1). **Accept any other appropriate response**	**(4)**

Question number	Indicative content
5(e)*	**AO2 (4 marks)/AO3 (4 marks)** **AO2** • 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. • 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). • Annual rainfall varies globally – which has a direct impact on the amount of water available in a country for domestic, agricultural and industrial usage. • 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. • 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. **AO3** • 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. • 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. • 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. • 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) • 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) • 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) • 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* • Learners write nothing • Learner's response does not relate to the question. • 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* • Learners spell and punctuate with reasonable accuracy • Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. • Learners use a limited range of specialist terms as appropriate.
SPaG 2	2–3	*Intermediate performance* • Learners spell and punctuate with considerable accuracy • Learners use rules of grammar with general control of meaning overall. • Learners use a good range of specialist terms as appropriate.
SPaG 3	4	*High performance* • Learners spell and punctuate with consistent accuracy. • Learners use rules of grammar with effective control of meaning overall. • 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.

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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)

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

(1)

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(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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(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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(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)

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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)

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

(4)

1 .....

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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

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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

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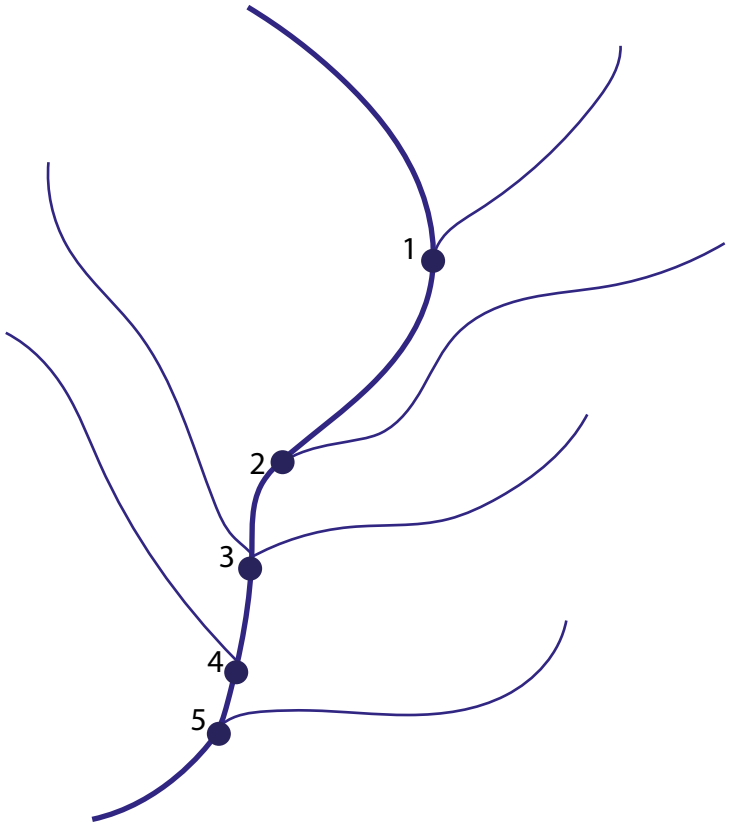


Figure 1a

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.

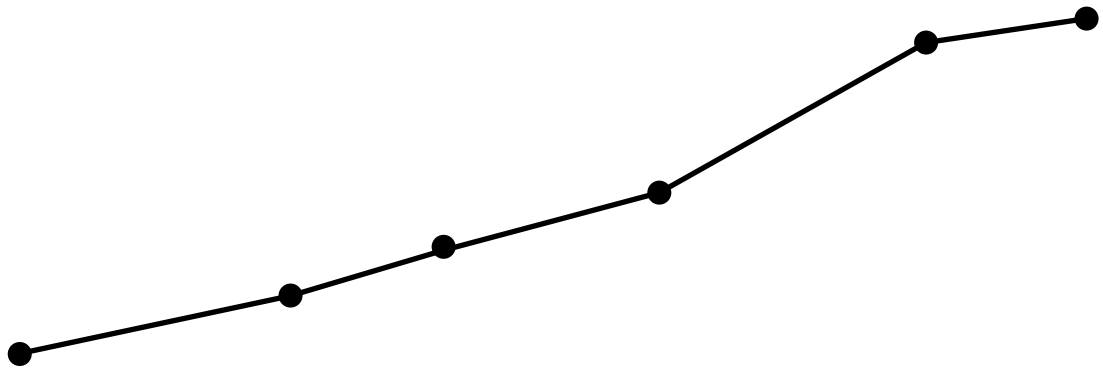


Figure 2a

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.

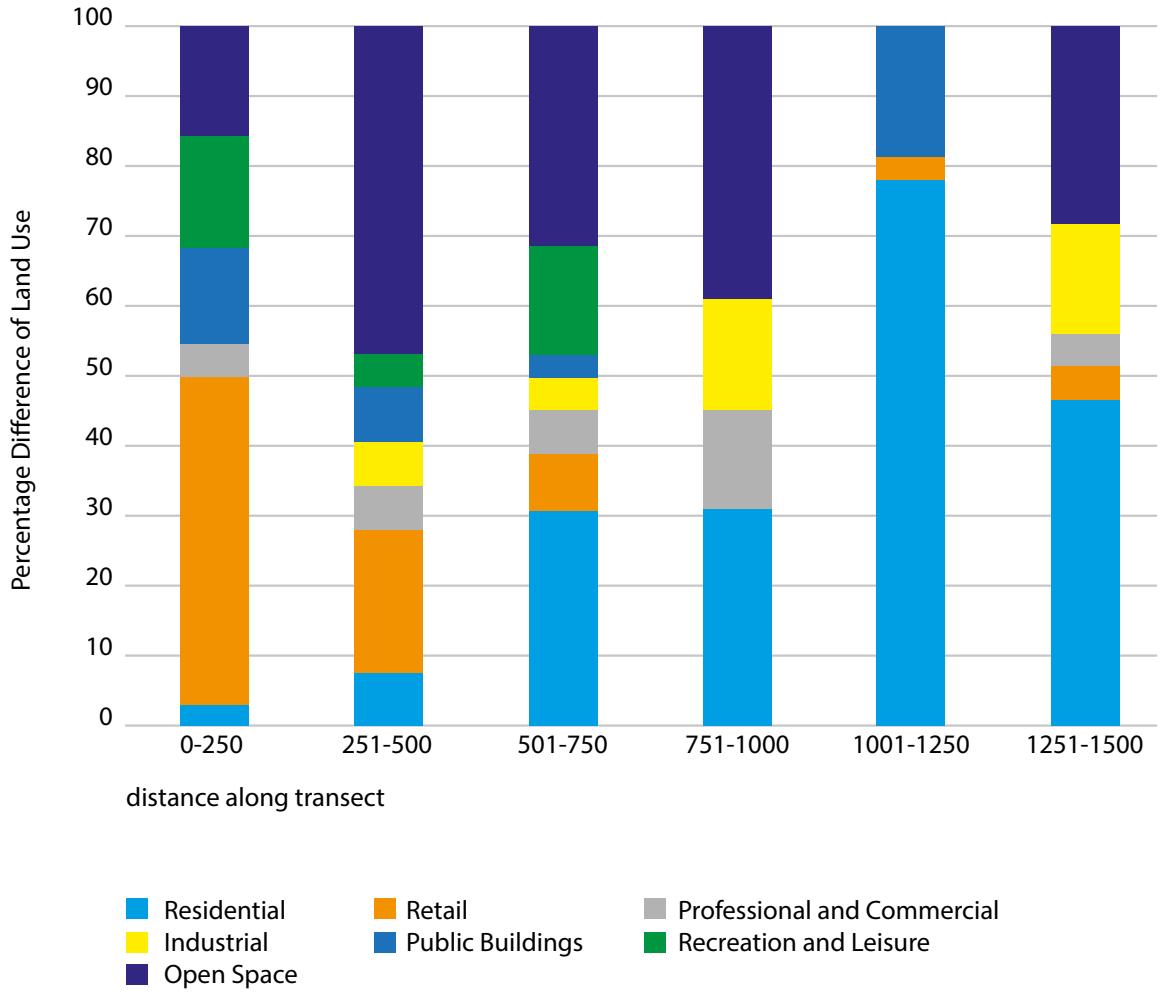


Figure 3

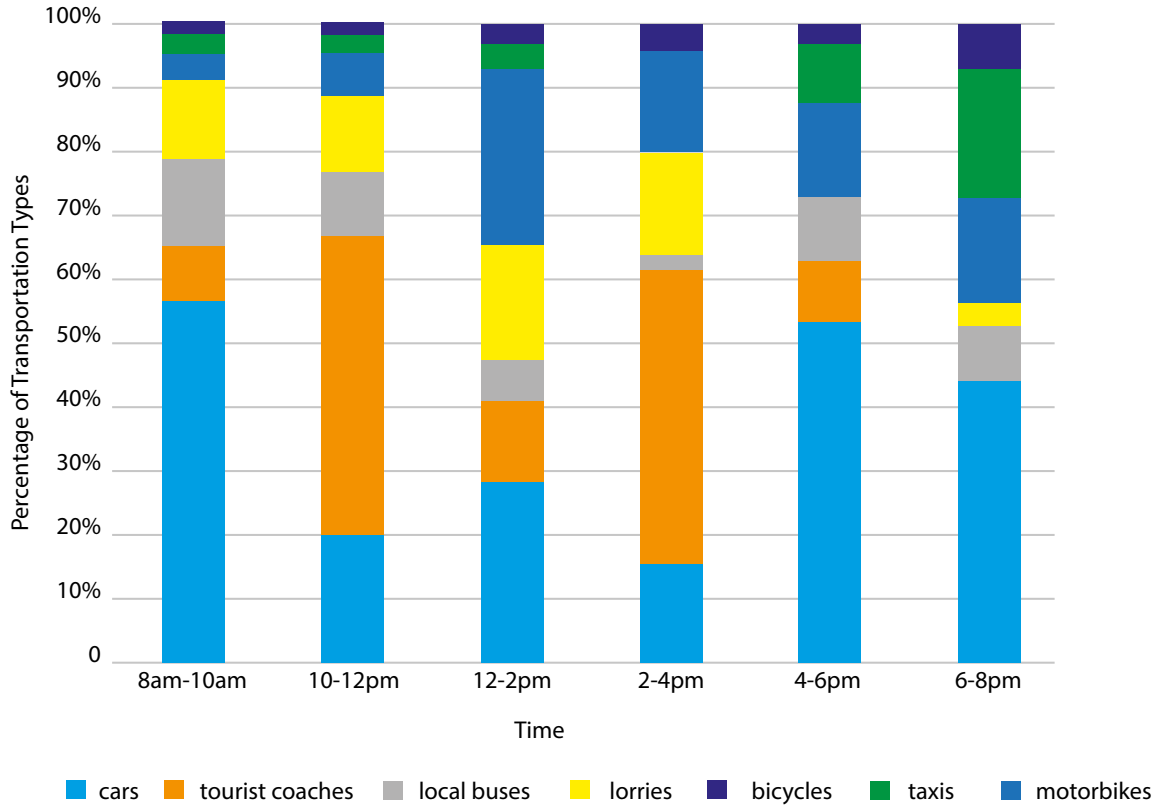
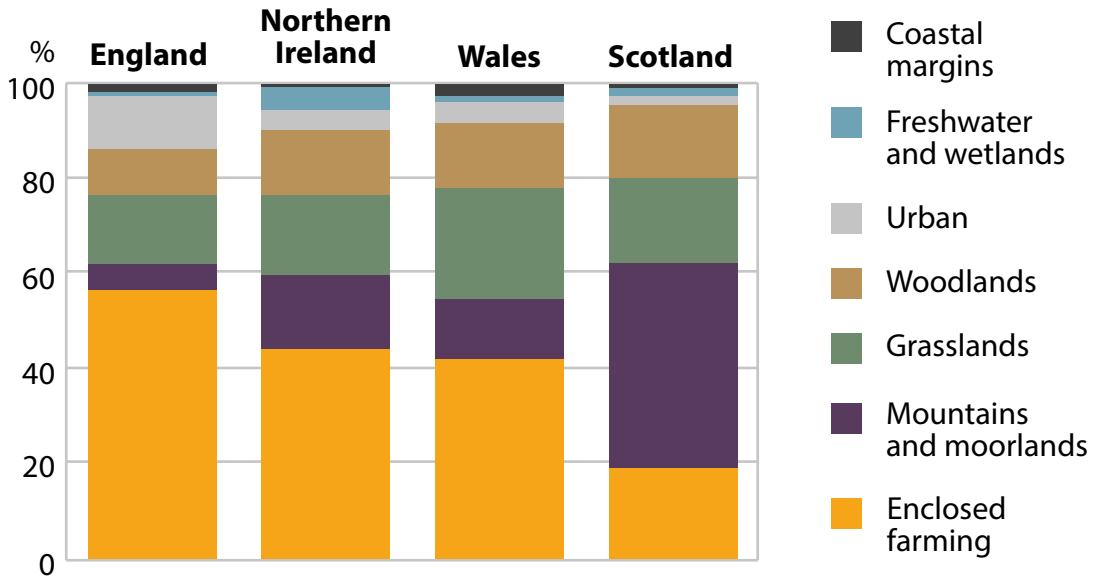


Figure 4

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

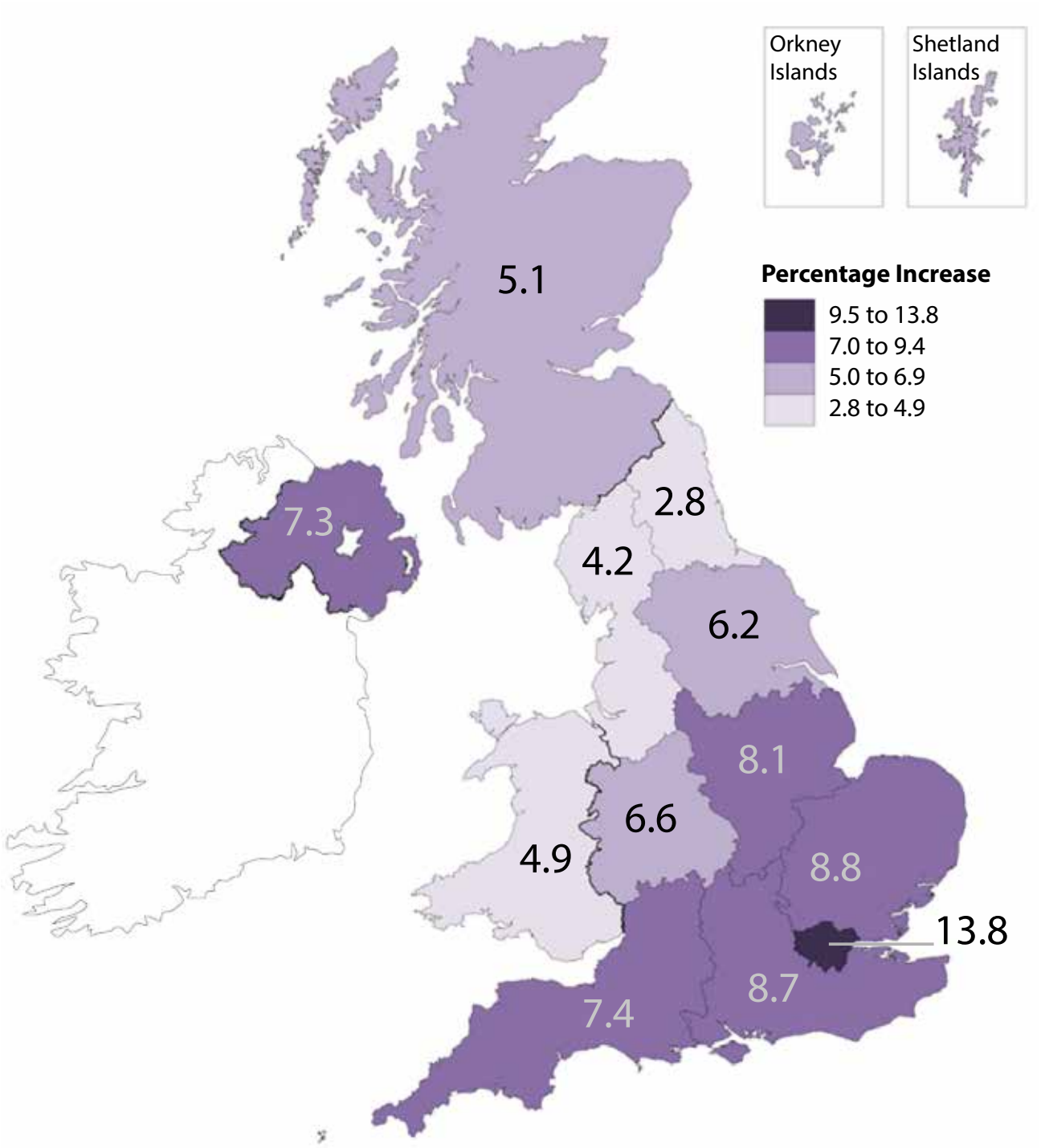
Land in each nation broken down by ecosystem



(Source: UK National Ecosystem Assessment)

Figure 5a

Proportions of different ecosystems within the UK.



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

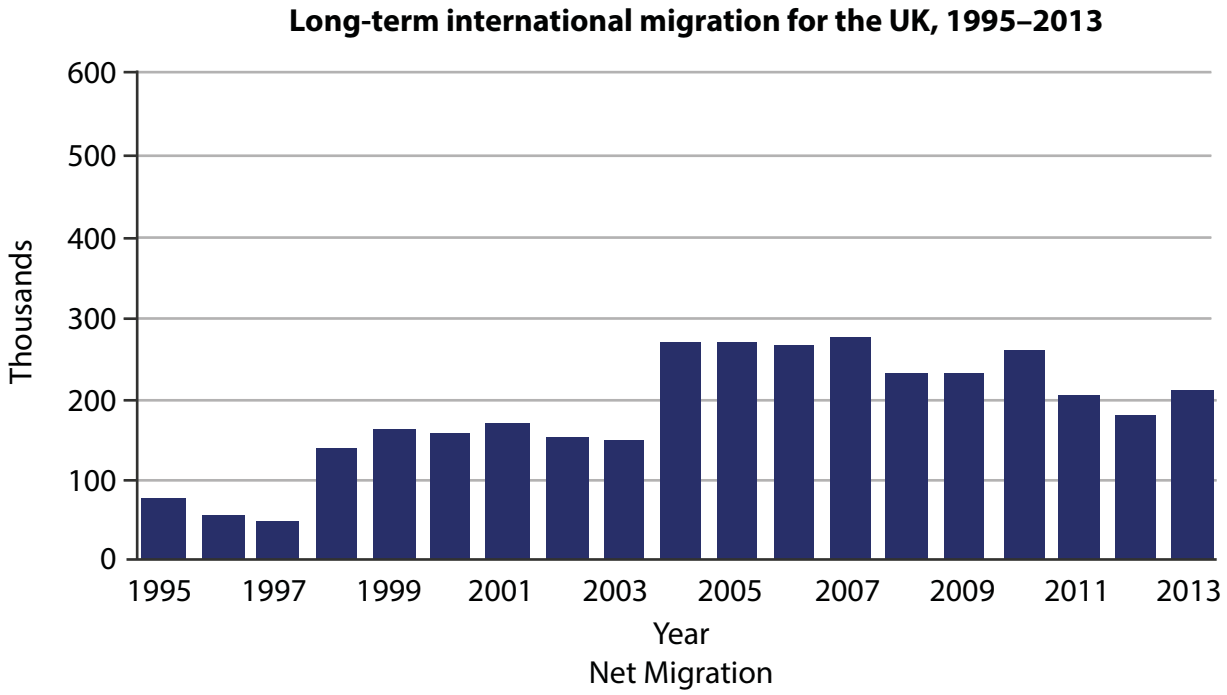
Figure 5b

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.

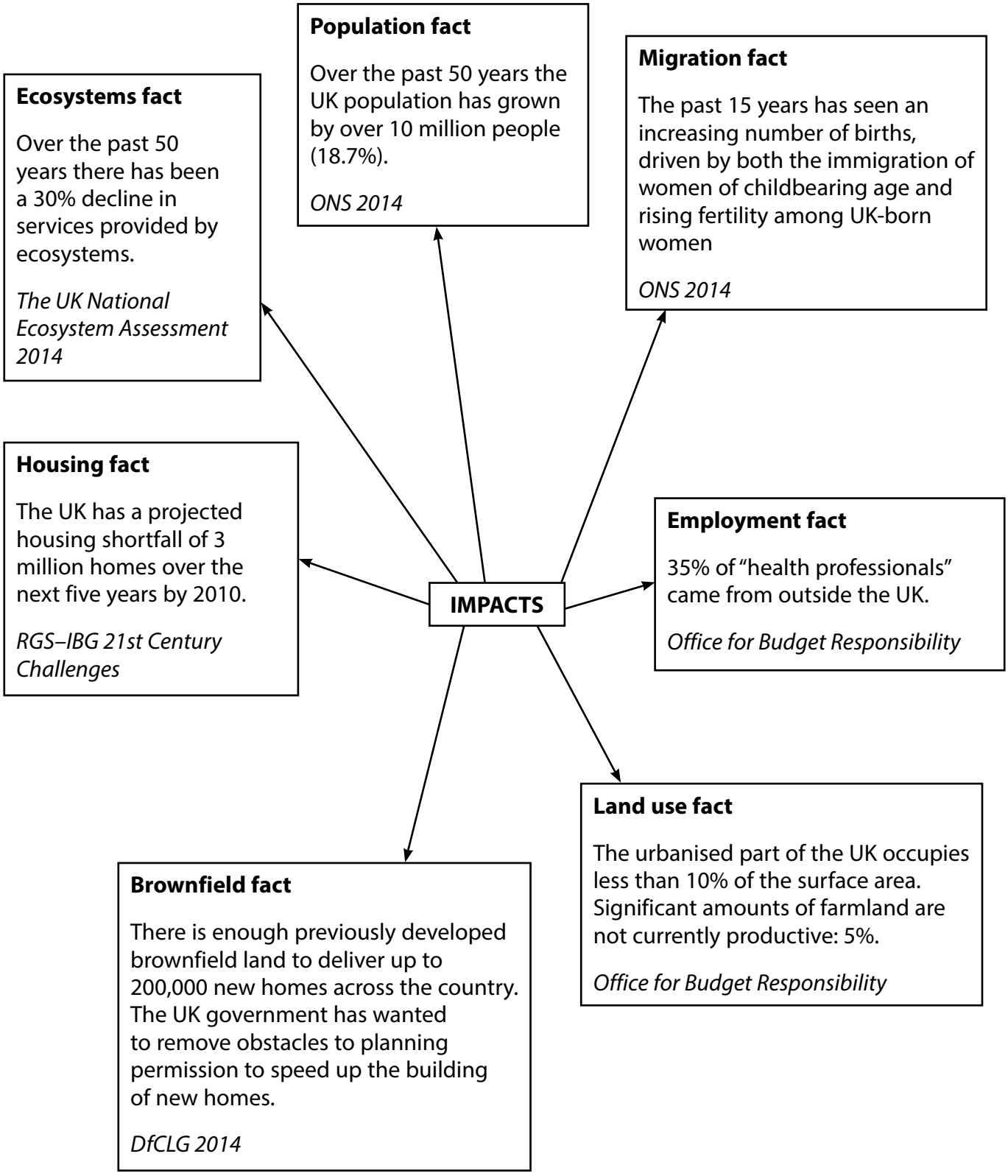


Figure 5e

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: use a float/ping pong ball/cork/orange/stick (1) use a flow meter with a smaller impellor (1). **Accept any other appropriate response.**	**(1)**

Question number	Answer	Mark
1(b)	Tape measure/ruler/chain/stopwatch **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: 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) 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). **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) 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: site 5 is an outlier (1), which means using median, rather than mean ignores the influence of the outlier (1) median uses a rank of data whereas mean is an arithmetic measure of central tendency (1), therefore influence of anomalies is ignored (1). **Accept any other appropriate response.**	**(2)**

Question number	Indicative content
1(e)	**AO3 (4 marks)/AO4 (4 marks)** **AO3** ● Reliability is about making judgements on how close conclusions are to the actual changes occurring in the river channel/catchment. ● Reliability will be most likely linked to results via methods – evaluation including equipment errors and operator errors. ● How far data-collection methods used produced reliable results. ● Judgement about limitations of equipment used/ operator error. ● Recognition of issue in design methodology/sampling methodology may be flawed in terms of number of sites (spatial) and time of year (temporal). ● A supported judgement is reached about the reliability of the results and conclusions. ● An evaluation of how far the outcomes can be trusted (or repeated to obtain the same results). **AO4** ● There is evidence of using different skills and techniques to identify river changes. ● There is evidence of using different skills and techniques to reach conclusions about river changes downstream. ● 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) • 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) • 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) • 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: they could use other students to help hold down the tape (1) place stones on the tape (1) use of a ruler/chain (1) measure and pace the distance (1). **Accept any other appropriate response.**	**(1)**

Question number	Answer	Mark
2(b)	Award 1 mark for one of the following, maximum 1 mark: clinometer (1) smartphone app (1) pantometer (1) **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: 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) 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). **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) 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: site 4 is an outlier (1), which means using median, rather than mean ignores the influence of the outlier (1) median uses a rank of data, whereas mean is an arithmetic measure of central tendency (1), therefore influence of anomalies are ignored (1). **Accept any other appropriate response.**	(2)

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

Question number	Indicative content
3(d)	**AO3 (4 marks)/AO4 (4 marks)** **AO3** ● 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. ● 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. ● The student has not surveyed between the roads and land use along the roads may be different to the land use between the roads. ● The student used only seven categories of land use, which meant some land uses may not fit within the categories selected. ● 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. **AO4** ● Residential was the dominant land use along the transect. ● Industry is found at four of the six transect distances (251-500, 501-750, 751-1000, 1251-1500). ● The amount of open space varies moving away from the CBD at the modal class 251-500. ● 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) • 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) • 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) • 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. There are a number of different contexts, e.g.: 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) 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) 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). **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: 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) 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) 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). **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: 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) 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) 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). **Accept any other appropriate response.**	**(4)**

Question number	Indicative content
4(d)	**AO3 (4 marks)/AO4 (4 marks)** **AO3** ● The student presented data within only six broad time categories, therefore patterns of variation may be hidden within the time 8 am to 8pm. ● 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. ● 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. ● The student used only seven categories of vehicle, which meant some transport types may not fit within the categories used. ● 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. **AO4** ● 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. ● Buses could run a consistent service, but their proportion of total traffic could vary, depending on the volume of traffic on the road. ● Motorbikes always have a small proportion but taxis have no representation from 2 to 4 and lorries have no representation from 4 to 6 ● 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) • 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) • 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) • 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: dominance of mountains and moorlands in Scotland (1) lowland areas tend to be more enclosed (1) England grows more arable crops (1). **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: some areas have fewer job opportunities (1) some areas have fewer transport connections than others (1) an elderly population may not want to move from the area in which it has lived for a long time (1) some areas have high house prices that are too expensive for incoming population to afford (1) **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: many short-term migrants decide to extend their stay (1) but may not extend their visa (1) the IPS survey is not judged to be robust (1) as it was initially designed to examine trends in tourism (1) hard to collate accurate data for some groups of people (1) such as asylum seekers/refugees/those who enter illegally (1). **Accept any other appropriate response.**	**(4)**

Question number	Indicative content
5(d)	**AO2** • The UK's population has been increasing over the past 50 years and particularly in the last 15 years. • 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). • Population growth will lead to social, political, economic and environmental challenges. • The term 'environmental' can be defined to include aspects of both natural and man-made features. • 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. • Development can threaten ecosystems by disrupting the cycling of nutrient and interdependence of biotic and abiotic conditions they need to function. • Other factors, such as climate change, can also contribute to the increased pressure on the UK's ecosystems. • Distribution and characteristics of the UK's main terrestrial ecosystems means that they are not all in suitable locations/land for development. **AO3** • 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. • 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. • 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. • 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. • 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. **AO4** • 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%). • 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. • 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. • 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. • 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) • 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) • 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) • 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) • 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) • 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) • 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:* ● Learners write nothing. ● Learner's response does not relate to the question. ● 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:* ● Learners spell and punctuate with reasonable accuracy. ● Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall. ● Learners use a limited range of specialist terms as appropriate.
SPaG 2	2–3	*Intermediate performance:* ● Learners spell and punctuate with considerable accuracy. ● Learners use rules of grammar with general control of meaning overall. ● Learners use a good range of specialist terms as appropriate.
SPaG 3	4	*High performance:* ● Learners spell and punctuate with consistent accuracy. ● Learners use rules of grammar with effective control of meaning overall. ● Learners use a wide range of specialist terms as appropriate.

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