Oxford Cambridge and RSA

GCSE (9–1) Geography B (Geography for Enquiring Minds)

J384/01 Our Natural World

Sample Resource Booklet

Time allowed: 1 hour 15 minutes

INSTRUCTIONS FOR CANDIDATES

- The questions tell you which resources you need to use.
- This document consists of **12** pages. Any blank pages are indicated.

INSTRUCTION TO EXAMS OFFICER/INVIGILATOR

- Do not send this Resource Booklet for marking, it should be retained in the centre or recycled. Please contact OCR Copyright should you wish to re-use this document.

CONTENTS OF THE RESOURCE BOOKLET

- Fig.1 – A GIS map showing plate boundaries and earthquake hazard distribution
- Fig. 2 – Change in surface (land and sea) temperature between 1901 and 2012
- Fig. 3 – Global average surface temperature anomaly between 1850 and 2010
- Fig. 4 – An OS map extract showing part of the South coast of England
- Fig. 5 – A photograph of an arch along the South coast of England called Durdle Door
- Fig. 6 – Climate graphs A and B
- Fig. 7 – A photograph a student has taken on a fieldtrip
- Fig. 8 – Photograph of groyne at Sheringham
- Fig. 9 – A diagram showing how to measure of the depth from the top of the groyne to the beach sediment
- Fig. 10 – A graph of the depth from the top of the groyne to the beach sediment

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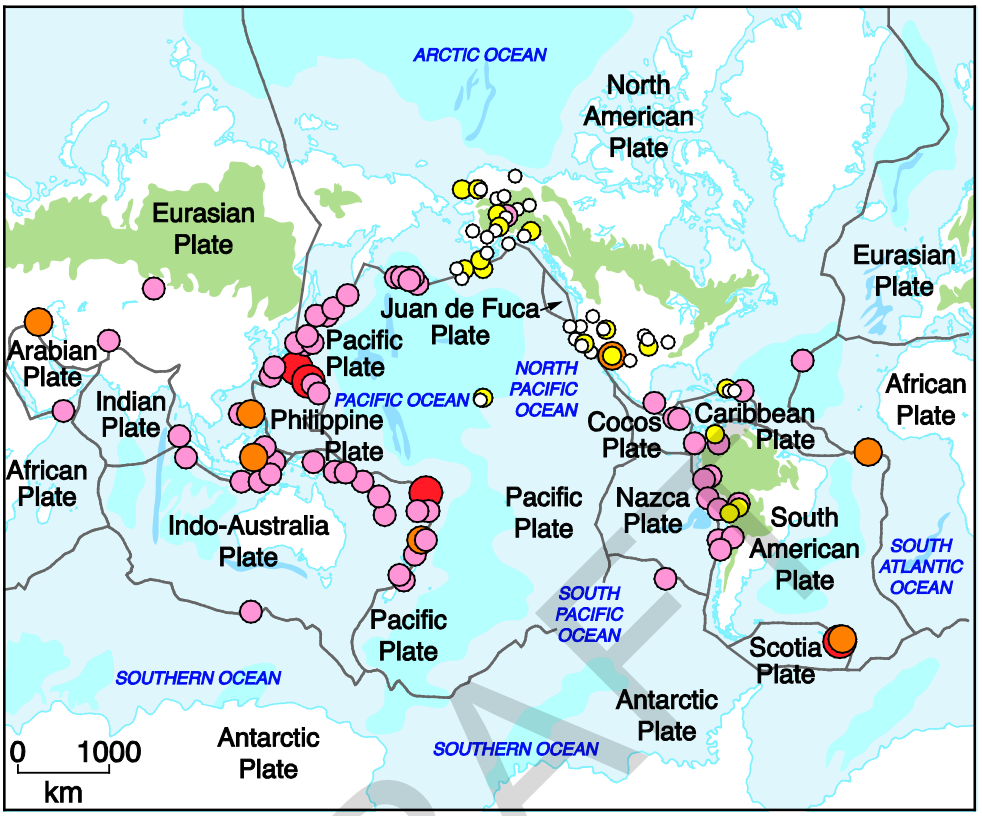
Fig.1 – A Geographical Information System (GIS) map showing plate boundaries and earthquake hazard distribution



Key

Earthquake magnitude

- 2.50 – 3.37
- 3.38 – 4.25
- 4.26 – 5.13
- 5.14 – 6.01
- 6.02 – 6.90

Earth's Tectonic Plates

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Fig. 2 – Change in surface (land and sea) temperature between 1901 and 2012

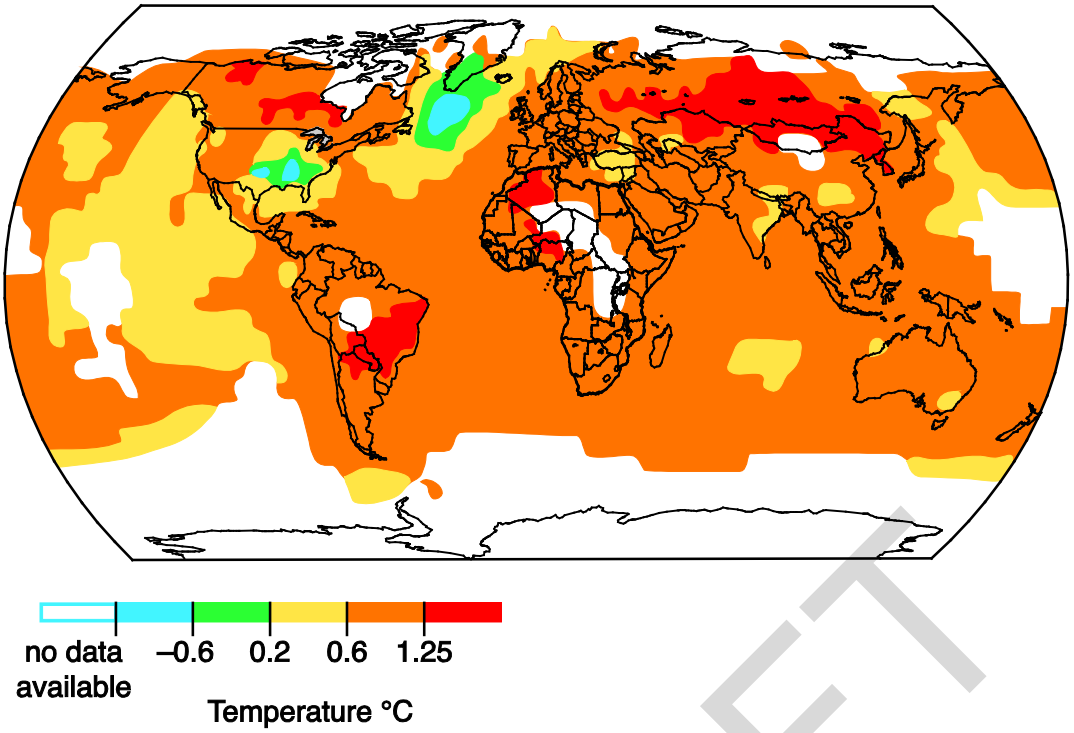

Fig. 3 – Global average surface temperature anomaly between 1850 and 2010

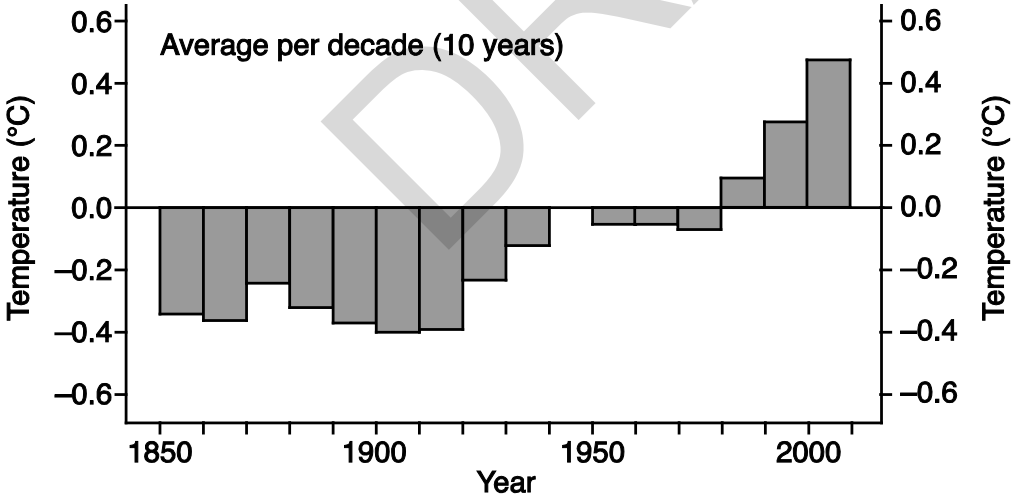

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Fig. 4 – An OS map extract showing part of the South coast of England.

Communications

ROADS AND PATHS | VOIES DE COMMUNICATION | STRASSEN UND WEGE

Service area
M1
Elevated
Junction number 1
En Viaduc
Erhöht

Not necessarily rights of way

Motorway (dual carriageway)
Autoroute (chaussées séparées) avec aire de service et échangeur numéroté
Autobahn (zweibahnig) mit Servicestation und Anschlussstelle sowie Nummer der Anschlussstelle

Unfenced
Dual carriageway
A 470
Chaussées séparées
Zweibahnige Strasse

Primary Route
Itinéraire principal
Fernstrasse

Primary routes form a network of recommended through routes which complement the motorway system

Sans clôture
Footbridge
A 493
Passerelle
Fussgängerbrücke

Main road
Route principale
Hauptstrasse

Road under construction
Route en construction
Strasse im Bau

Nicht eingezäunt
B 4518

Secondary road
Route secondaire
Nebenstrasse

A 855
B 885

Narrow road with passing places
Route étroite avec voies de dépassement
Enge Strasse mit Ausweichstellen

Bridge
Pont
Brücke

Road generally more than 4m wide
Route généralement de plus de 4m de largeur
Strasse, im allg.über 4m breit

Road generally less than 4m wide
Route généralement de moins de 4m de largeur
Strasse, im allg.unter 4m breit

Other road, drive or track
Autre route, allée ou sentier
Sonstige Strasse, Zufahrt oder Feldweg

Path Sentier Fussweg

Gradient: steeper than 20% (1 in 5), 14% to 20% (1 in 7 to 1 in 5)
Pente: Supérieure à 20% (1 pour 5), 14% à 20% (1 pour 7 à 1 pour 5)
Steigung über 20%, 14% bis 20%

Gates
Barrières
Schranken

Road tunnel
Tunnel routier
Strassentunnel

Ferry P
Ferry V

Ferry (passenger)
Bac pour piétons
Personenfähre

Ferry (vehicle)
Bac pour véhicules
Autofähre

General Information

LAND FEATURES

Cutting, embankment
Electricity transmission line (pylons shown at standard spacing)
Pipe line (arrow indicates direction of flow)
ruin
Buildings
Important building (selected)
Bus or coach station
Glass Structure
Heliport
Current or former place of worship; with tower with spire, minaret or dome
Place of worship
Triangulation pillar
Mast
Wind pump, wind turbine
Windmill with or without sails
Graticule intersection at 5' intervals

Landfill site or slag/spoil heap
Coniferous wood
Non-coniferous wood
Mixed wood
Orchard
Park or ornamental ground
Forestry Commission land
National Trust-always open
National Trust-limited access, observe local signs
National Trust for Scotland - always open
National Trust for Scotland - limited access, observe local signs

WATER FEATURES Contour values in lakes are in metres

Marsh or salting
Towpath
Lock
Slopes
Cliff
Rat rock
High water mark
Low water mark
Lighthouse (in use)
Aqueduct
Canal
Ford
Weir
Normal tidal limit
Sand Dunes
Beacon
Lake
Footbridge
Bridge
Lighthouse (disused)
Shingle
Mud
Canal (dry)

HEIGHTS

50 Contours are at 10 metres vertical interval
·144 Heights are to the nearest metre above mean sea level

Surface heights are to the nearest metre above mean sea level. Where two heights are shown, the first is the height of the natural ground in the location of the triangulation pillar, and the second (in brackets) to a separate point which is the highest natural summit.

ABBREVIATIONS See our website for full list

CH	Clubhouse	CG	Cattle grid
PH	Public house	P	Post office
PC	Public convenience (in rural area)	MP	Milepost
TH	Town hall, Guildhall or equivalent	MS	Milestone

ARCHAEOLOGICAL AND HISTORICAL INFORMATION

Site of antiquity
Visible earthwork
VILLA Roman
Castle Non-Roman
Battlefield (with date)

Information provided by English Heritage for England and the Royal Commissions on the Ancient and Historical Monuments for Scotland and Wales

ROCK FEATURES

Outcrop
Cliff
Scree

Tourist Information

TOURIST INFORMATION | RENSEIGNEMENTS TOURISTIQUES | TOURISTENINFORMATION

Viewpoint
Point de vue
Aussichtspunkt

Visitor centre
Centre pour visiteurs
Besucherzentrum

Walks / Trails
Promenades
Wanderwege

Nature reserve
Réserve naturelle
Naturschutzgebiet

Parking
Parking
Parkplatz

Youth hostel
Auberge de jeunesse
Jugendherberge

Golf course or links
Terrain de golf
Golfplatz

Garden
Jardin
Garten

Camp site/caravan site
Terrain de camping/Terrain pour caravanes
Campingplatz/Wohnwagenplatz

Selected places of tourist interest
Endroits d'un intérêt touristique particulier
Ausgewählter Platz von touristischem Interesse

Information centre, all year / seasonal
Office de tourisme, ouvert toute l'année / en saison
Informationsbüro, ganzjährig / saisonal

Picnic site
Emplacement de pique-nique
Picknickplatz

P&R
Park & Ride, all year / seasonal
Parking et navette, ouvert toute l'année / en saison
Park & Ride, ganzjährig / saisonal

Telephone, public / roadside assistance
Téléphone, public/ borne d'appel d'urgence
Telefon, öffentlich / Notrufsäule

Recreation / leisure / sports centre
Centre de détente / loisirs / sports
Erholungs- / Freizeit- / Sportzentrum

World Heritage site/area
Site du Patrimoine Mondial
Welterbestätte

DRAFT

Fig. 5 – A photograph of an arch along the South coast of England called Durdle Door

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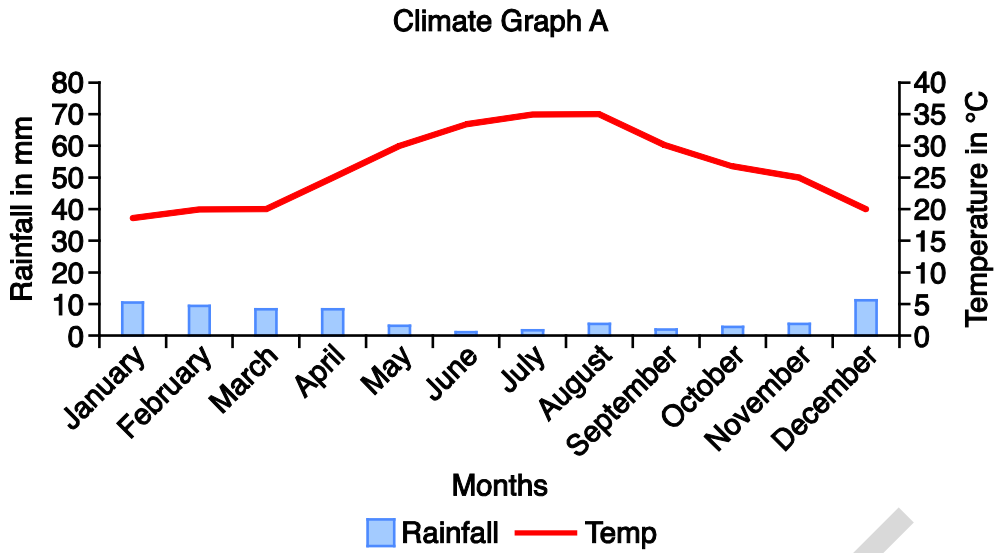
Fig. 6 – Climate graphs A and B.



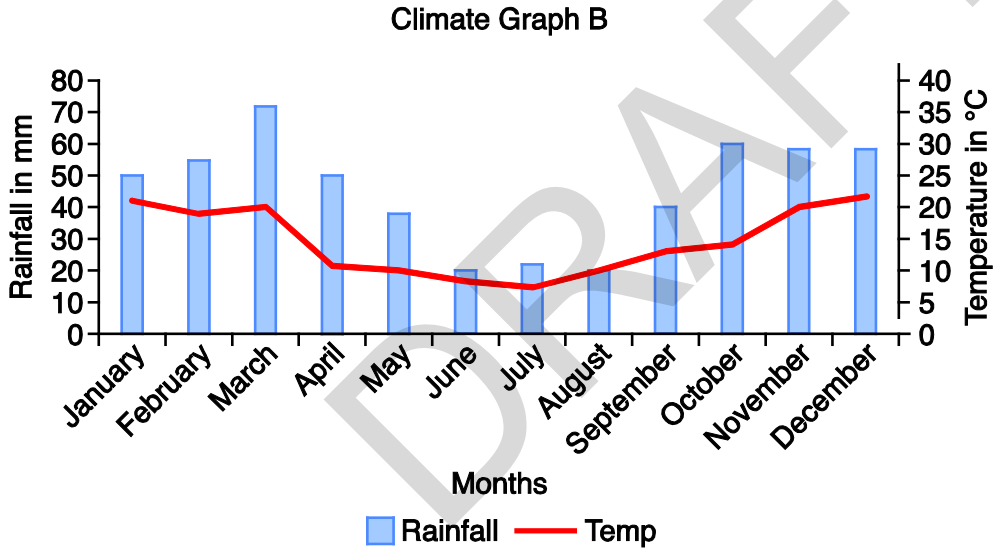


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Fig. 7 – A photograph a student has taken on a fieldtrip

DRAFT

Fig. 8 – Photograph of groyne at Sheringham

Fig. 9 – A diagram showing how to measure of the depth from the top of the groyne to the beach sediment

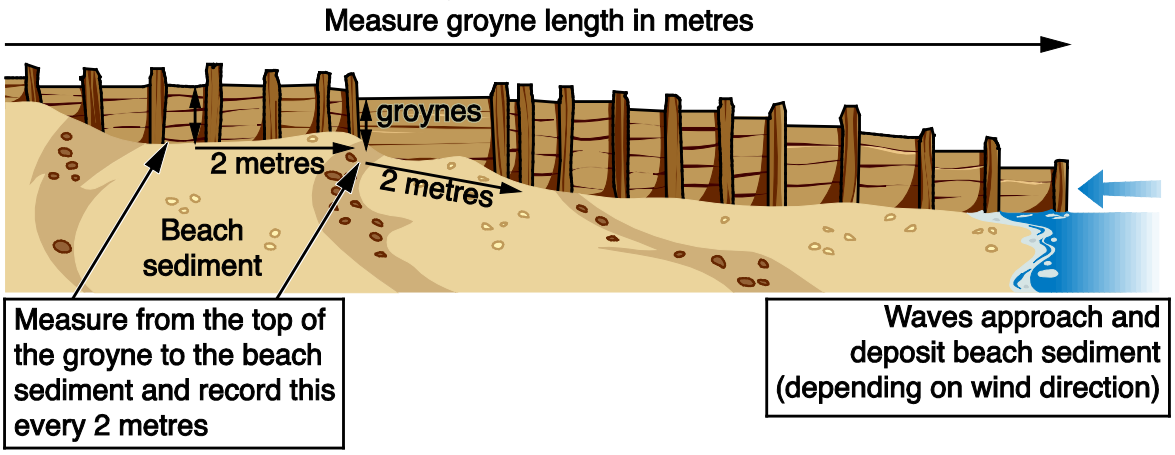
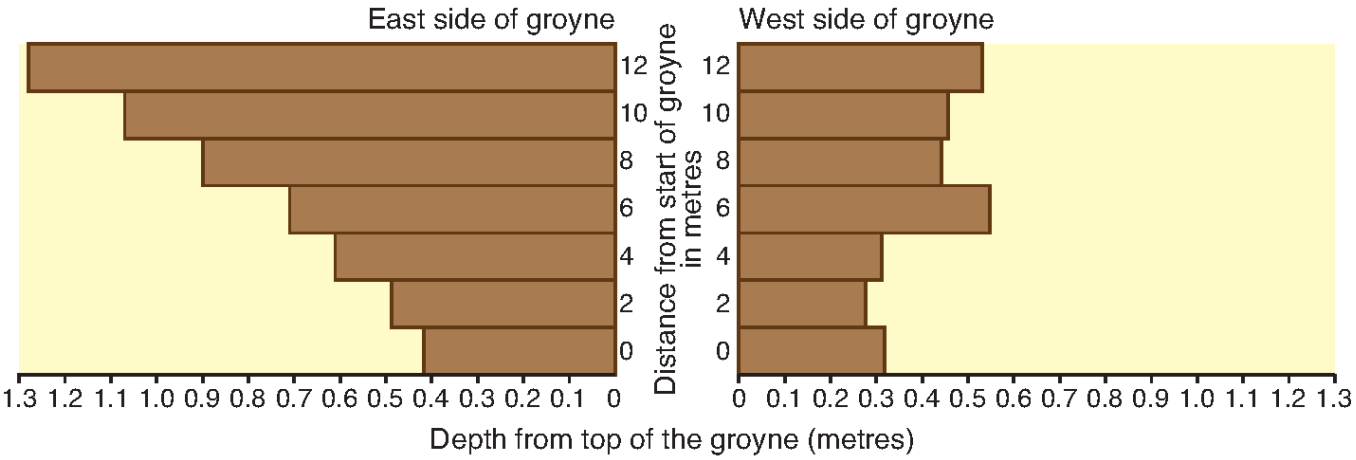


Fig. 10 – A graph of the depth from the top of the groyne to the beach sediment



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Copyright Information:

Fig.2: IPCC, 2013: Climate Change 2013: The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Figure SPM.1(a) and Figure SPM.1(b) [Stocker,T.F., D.Qin, G.-K. Plattner, M.Tignor, S.K.Allen, J.Boschung, A.Nauels, Y.Xia, V.Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK and New York, USA.

Fig. 3: IPCC, 2013: Climate Change 2013: The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, Figure SPM.1(a) and Figure SPM.1(b) [Stocker,T.F., D.Qin, G.-K. Plattner, M.Tignor, S.K.Allen, J.Boschung, A.Nauels, Y.Xia, V.Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK and New York, USA.

Fig. 4: OS map extract showing part of the South coast of England © Crown copyright (2015) Ordnance Survey (100043707)

Fig. 7: Image from BBC Bitesize, Ecosystems in Antarctica, www.bbc.co.uk, accessed March 2015

Fig. 8: Photo of Pennard Pill, S Wales © ARGO Images / Alamy

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Oxford Cambridge and RSA

GCSE (9–1) Geography B (Geography for Enquiring Minds)

J384/01 Our Natural World

Sample Question Paper

Date – Morning/Afternoon

Time allowed: 1 hour 15 minutes

You must have:
- the Resource Booklet

You may use:
- a ruler (cm/mm)
- a piece of string
- a calculator

First name	
Last name	

Centre number						Candidate number				

DRAFT

INSTRUCTIONS
- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Write your answer to each question in the space provided. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- The separate Resource Booklet will be found inside this document.

INFORMATION
- The total mark for this paper is **70**.
- The marks for each question are shown in brackets **[ ]**.
- Quality of extended responses will be assessed in questions marked with an asterisk (*****).
- Spelling, punctuation and grammar will be assessed in questions marked with a pencil (✎).
- This document consists of **12** pages.

Section A

Answer **all** the questions.

Global Hazards

Study the table below, showing the total and average number of tropical storms in the USA (1851–2013).

Month	Total number of tropical storms	Average number of tropical storms
January	2	-
February	1	-
March	1	-
April	1	-
May	20	0.1
June	86	0.5
July	116	0.7
August	373	2.3
September	564	3.5
October	332	2.0
November	88	0.5
December	17	0.1

1.

(a) Which month has the highest number of tropical storms?

A August
B November
C October
D September

Write the correct letter in the box. ☐

[1]

(b) On average how many tropical storms does the USA experience during July?

A 0.5
B 0.7
C 2.0
D 2.3

Write the correct letter in the box. ☐

[1]

(c) Select the most suitable graphical technique for presenting the total number of tropical storms column.

A Bar graph
B Climate graph
C Cross-section
D Rose chart

Write the correct letter in the box. ☐

[1]

DRAFT

(d) Describe what a hot spot is.

[Insert 4 answer lines]

[2]

(e) Study **Fig. 1** in the separate Resource Booklet**,** a Geographical Information System (GIS) map showing plate boundaries and earthquake hazard distribution.

Describe the relationship shown between earthquake hazards and plate boundaries.

[Insert 4 answer lines]

[2]

(f) Describe and explain how technology can help people to reduce the impacts of tectonic hazards?

[Insert 12 answer lines]

[6]

DRAFT

Changing Climate

2.

(a) Study **Fig. 2** in the separate Resource Booklet, a map showing the change in surface (land and sea) temperature between 1901 and 2012.

The greatest increase in surface temperatures between 1901 and 2012 is:

A in the higher latitudes
B in the oceans
C on land masses
D on land masses and oceans

Write the correct letter in the box. ☐

[1]

(b) Which of the following is an example of a possible natural cause of climate change?

A Burning fossil fuels
B Deforestation
C Sea level rise
D Sunspots

Write the correct letter in the box. ☐

[1]

(c) Study **Fig. 3** in the separate Resource Booklet, a graph showing the global average surface temperature anomaly between 1850 and 2010**.**

Using evidence from **Fig. 3** describe the changes in surface temperatures between 1850 and 2010?

[Insert 4 answer lines]

[2]

(d) Ice cores are one source of evidence of climate change in the past. Name **one** other source of evidence relating to climate change and assess how reliable this source of evidence is.

Source:

[Insert 1 answer line]

[Insert 4 answer lines]

[3]

(e) Discuss the social impacts of climate change within the UK in the 21st century.

[Insert 12 answer lines]

[6]

DRAFT

Distinctive Landscapes

3. Study **Fig. 4** in the separate Resource Booklet, an OS map extract showing part of the South coast of England.

(a)

(i) The straight line distance between Mupe Rocks (8479) and Worbarrow Tout (8679) is:

A 1600m
B 2000m
C 2400m
D 2800m

Write the correct letter in the box. ☐

[1]

(ii) The four-figure grid reference for the museum in Tyneham is:

A 8582
B 8781
C 8880
D 8979

Write the correct letter in the box. ☐

[1]

(iii) State the six-figure grid reference for the viewpoint near Povington Hill.

[Insert 1 answer line]

[1]

(b) Geographical Information Systems (GIS) can show many different kinds of data on one map, with each kind of data representing a new 'layer' of the map.

Suggest **one** extra layer which could be added to the OS map extract in **Fig. 4** making it more informative for a group of geography students using the area for a coastal study. Give a reason for your answer.

[Insert 4 answer lines]

[2]

DRAFT

(c) Study **Fig. 5** in the separate Resource Booklet, a photograph of 'Durdle Door', an arch along the South coast of England.

Describe how one geomorphic process has formed the arch shown in **Fig. 5**.

[Insert 4 answer lines]

[2]

(d) **CASE STUDY – a distinctive landscape in the UK not a coastal landscape.**

Name of distinctive landscape in the UK, **not** a coastal landscape:

[Insert 1 answer line]

Explain how human activity has influenced the geomorphic processes in this landscape.

[Insert 12 answer lines]

[6]

DRAFT

Sustaining Ecosystems

4. Study **Fig. 6** in the separate Resource Booklet, showing climate graphs A and B.

(a)

(i) Climate graph A shows the climate of a:

A hot desert
B polar region
C temperate forest
D tropical rainforest

Write the correct letter in the box. ☐

[1]

(ii) The average temperature pattern on climate graph B:

A is constant throughout the year
B shows more than one season
C shows no seasons
D shows a wet season

Write the correct letter in the box. ☐

[1]

(b) Which of the following is an **input** of the nutrient cycle in the tropical rainforest?

A Leaching
B Litter
C Rainfall
D Soil

Write the correct letter in the box. ☐

[1]

(c) Tropical rainforests provide valuable goods and services.

Name **one** of these goods or services and describe why it is valuable.

[Insert 2 answer lines] **[2]**

DRAFT

(d*) CASE STUDY – a small scale example of sustainable management in either the Arctic or Antarctic.

Examine how successful **one** small scale example of sustainable management in either the Arctic or Antarctic has been.

[Insert 16 answer lines]

[8]

DRAFT

Section B

Answer **all** the questions

Physical Geography Fieldwork

5.

(a) Study **Fig. 7** in the separate Resource Booklet, a photograph a student has taken on a fieldtrip.

State **two** ways this photograph could be used effectively in the data presentation section of the student's fieldwork investigation.

1. [Insert 2 blank line spaces]

2. [Insert 2 blank line spaces]

[2]

(b) The table below shows part of a data collection sheet from a fieldwork investigation.

Site Number:	Seven										
Stream width:	13.7 metres										
Stream depth (recorded every metre):											
0.16m	0.17m	0.18m	0.23m	0.29m	0.31m	0.28m	0.26m	0.23m	0.23m	0.19m	0.18m
Pebble size (sample of six pebbles):											
90mm	45mm	40mm	38mm	45mm	36mm						

(i) Using the table above, calculate the range of the pebble size.

[Insert 1 answer line]

[1]

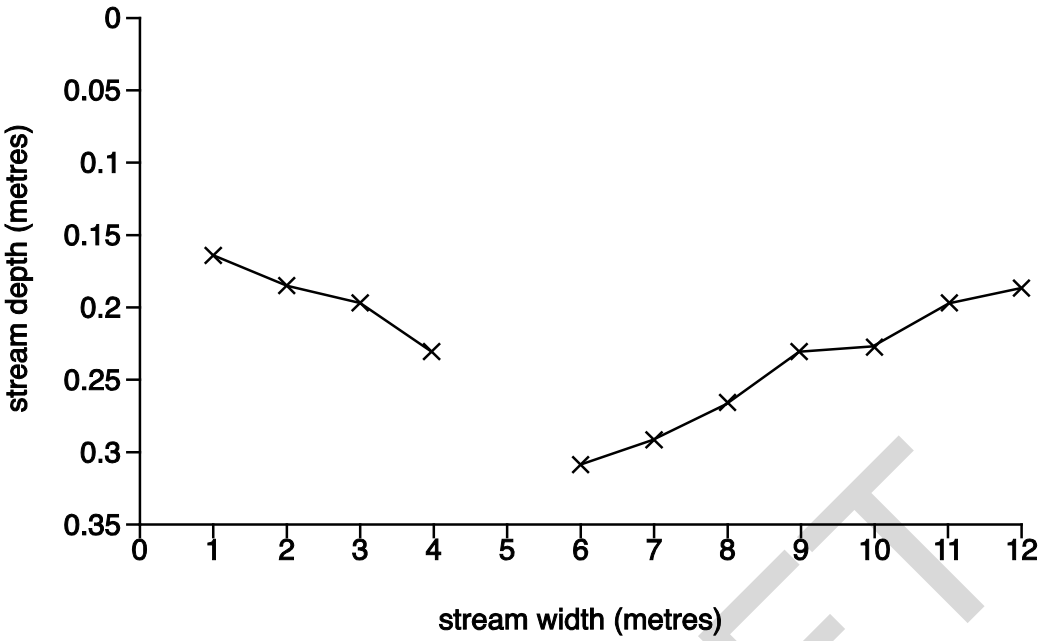
(ii) Using the table above, calculate the mode of the stream depth.

[Insert 1 answer line]

[1]

DRAFT

(iii) Complete the cross section below using information from the data collection sheet.



[1]

(c) For a physical geography fieldwork investigation which you have completed, evaluate **one** technique you used to collect data.

Technique used: [Insert 1 answer line]

[Insert 4 answer lines]

[2]

5.

(d*) **Figs 8, 9 and 10** in the separate Resource Booklet show information from a GCSE geography student's fieldwork investigation.

Using evidence from **Figs 8, 9 and 10,** write a conclusion to the question for investigation *"Does the process of longshore drift occur at Sheringham?"* Develop your answer.

[Insert 16 answer lines]

[8]

Spelling, punctuation and grammar **[3]**

DRAFT

ADDITIONAL ANSWER SPACE

If you use this lined space to complete the answer to any question(s), the question number(s) **must** be clearly shown.

[insert page of lines]

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Oxford Cambridge and RSA

…day June 20XX – Morning/Afternoon

GCSE (9–1) Geography B (Geography for Enquiring Minds)

J384/01 Our Natural World

SAMPLE MARK SCHEME

Duration: 1 hour 15 minutes

MAXIMUM MARK 70

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This document consists of 24 pages

MARKING INSTRUCTIONS

PREPARATION FOR MARKING

SCORIS

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *scoris assessor Online Training*; *OCR Essential Guide to Marking*.

2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are posted on the RM Cambridge Assessment Support Portal http://www.rm.com/support/ca

3. Log-in to scoris and mark the **required number** of practice responses ("scripts") and the **required number** of standardisation responses.

   YOU MUST MARK 10 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

TRADITIONAL

Before the Standardisation meeting you must mark at least 10 scripts from several centres. For this preliminary marking you should use **pencil** and follow the **mark scheme**. Bring these **marked scripts** to the meeting.

MARKING

1. Mark strictly to the mark scheme.

2. Marks awarded must relate directly to the marking criteria.

3. The schedule of dates is very important. It is essential that you meet the scoris 50% and 100% (traditional 50% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.

4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone, email or via the scoris messaging system.

DRAFT

5. Work crossed out:
   a. where a candidate crosses out an answer and provides an alternative response, the crossed out response is not marked and gains no marks
   b. if a candidate crosses out an answer to a whole question and makes no second attempt, and if the inclusion of the answer does not cause a rubric infringement, the assessor should attempt to mark the crossed out answer and award marks appropriately.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there then add a tick to confirm that the work has been seen.

7. There is a NR (No Response) option. Award NR (No Response)
   - if there is nothing written at all in the answer space
   - OR if there is a comment which does not in any way relate to the question (e.g. 'can't do', 'don't know')
   - OR if there is a mark (e.g. a dash, a question mark) which isn't an attempt at the question.

   Note: Award 0 marks – for an attempt that earns no credit (including copying out the question).

8. The scoris **comments box** is used by your Team Leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**
   If you have any questions or comments for your Team Leader, use telephone, email or the scoris messaging system.

9. Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.

DRAFT

10. **Annotations**

Annotation	Meaning

DRAFT

11. Subject-specific Marking Instructions

INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper and its rubrics
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

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USING THE MARK SCHEME

Please study this Mark Scheme carefully. The Mark Scheme is an integral part of the process that begins with the setting of the question paper and ends with the awarding of grades. Question papers and Mark Schemes are developed in association with each other so that issues of differentiation and positive achievement can be addressed from the very start.

This Mark Scheme is a working document; it is not exhaustive; it does not provide ‘correct’ answers. The Mark Scheme can only provide ‘best guesses’ about how the question will work out, and it is subject to revision after we have looked at a wide range of scripts.

The Examiners’ Standardisation Meeting will ensure that the Mark Scheme covers the range of candidates’ responses to the questions, and that all Examiners understand and apply the Mark Scheme in the same way. The Mark Scheme will be discussed and amended at the meeting, and administrative procedures will be confirmed. Co-ordination scripts will be issued at the meeting to exemplify aspects of candidates’ responses and achievements; the co-ordination scripts then become part of this Mark Scheme.

Before the Standardisation Meeting, you should read and mark in pencil a number of scripts, in order to gain an impression of the range of responses and achievement that may be expected.

In your marking, you will encounter valid responses which are not covered by the Mark Scheme: these responses must be credited. You will encounter answers which fall outside the ‘target range’ of Bands for the paper which you are marking. Please mark these answers according to the marking criteria.

Please read carefully all the scripts in your allocation and make every effort to look positively for achievement throughout the ability range. Always be prepared to use the full range of marks.

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LEVELS OF RESPONSE QUESTIONS:

The indicative content indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance.

Using 'best-fit', decide first which set of level descriptors best describes the overall quality of the answer. Once the level is located, adjust the mark concentrating on features of the answer which make it stronger or weaker following the guidelines for refinement.

Highest mark: If clear evidence of all the qualities in the level descriptors is shown, the HIGHEST Mark should be awarded.

Lowest mark: If the answer shows the candidate to be borderline (i.e. they have achieved all the qualities of the levels below and show limited evidence of meeting the criteria of the level in question) the LOWEST mark should be awarded.

Middle mark: This mark should be used for candidates who are secure in the level. They are not 'borderline' but they have only achieved some of the qualities in the level descriptors.

Be prepared to use the full range of marks. Do not reserve (e.g.) highest level marks 'in case' something turns up of a quality you have not yet seen. If an answer gives clear evidence of the qualities described in the level descriptors, reward appropriately.

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	AO1	AO2	AO3
Comprehensive	A range of detailed and accurate knowledge that is fully relevant to the question.	A range of detailed and accurate understanding that is fully relevant to the question.	Detailed and accurate interpretation through the application of relevant knowledge and understanding. Detailed and accurate analysis through the application of relevant knowledge and understanding. Detailed and substantiated evaluation through the application of relevant knowledge and understanding. Detailed and substantiated judgement through the application of relevant knowledge and understanding.
Thorough	A range of accurate knowledge that is relevant to the question.	A range of accurate understanding that is relevant to the question.	Accurate interpretation through the application of relevant knowledge and understanding. Accurate analysis through the application of relevant knowledge and understanding. Supported evaluation through the application of relevant knowledge and understanding. Supported judgement through the application of relevant knowledge and understanding.
Reasonable	Some knowledge that is relevant to the question.	Some understanding that is relevant to the question.	Some accuracy in interpretation through the application of some relevant knowledge and understanding. Some accuracy in analysis through the application of some relevant knowledge and understanding. Partially supported evaluation through the application of some relevant knowledge and understanding. Partially supported judgement through the application of some relevant knowledge and understanding.
Basic	Limited knowledge that is relevant to the topic or question.	Limited understanding that is relevant to the topic or question.	Limited accuracy in interpretation through lack of application of relevant knowledge and understanding. Limited accuracy in analysis through lack of application of relevant knowledge and understanding. Un-supported evaluation through lack of application of knowledge and understanding. Un-supported judgement through lack of application of knowledge and understanding.

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Question			Answer	Marks	Guidance
1.	**(a)**		D: September (✓)	**1**	(✓)
	(b)		B: 0.7 (✓)	**1**	(✓)
	(c)		A: bar graph (✓)	**1**	(✓)
	(d)		A small area of the earth's crust where unusually high heat flow (✓) is linked to volcanic activity (✓)	**2**	2 x 1 (✓)
	(e)		The majority of earthquakes occur at plate boundaries (✓) Some earthquakes occur mid plate e.g. Pacific or North American Plate (✓)	**2**	2 x 1 (✓)
	(f)		**Level 3 (5–6 marks)** An answer at this level demonstrates **thorough** knowledge of technological methods (AO1) and **thorough** understanding of how this technology reduces the impacts of tectonic hazards (AO2). This will be shown by including **well-developed** ideas **both** about technological methods **and** how technology reduces impacts of tectonic hazards. **Level 2 (3–4 marks)** An answer at this level demonstrates **reasonable** knowledge of technological methods (AO1) and **reasonable** understanding of how technology reduces the impacts of tectonic hazards (AO2). This will be shown by including **developed** ideas about **either** technological methods **or** how technology reduces impacts of tectonic hazards.	**6**	**Indicative content – must be suitable for a tectonic hazard** **Building design** – seismic retrofitting, *shock absorbers in foundations, deep foundations in rock, steel frame with interlocking girders, counterbalance weights, cross bracing extra support, emergency staircases* **Prediction strategies** – *remotely operated materials, monitoring stations, GPS satellites – shape of volcanoes, laser beams, tilt meters* **Early warning systems**- *siren system, community communication, sulphur dioxide levels monitored* **Emergency service prepared** – *rescue teams specially trained doctors/medics, trained dogs* , post hazard tents/emergency services Education strategies – *Earthquake drills, 'Shake Out' California* *Short term and long term strategies acceptable*

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Question			Answer	Marks	Guidance
			Level 1 (1–2 marks) An answer at this level demonstrates **basic** knowledge of technological methods (AO1) and **basic** understanding of how technology reduces the impacts of tectonic hazards (AO2). This will be shown by including **simple** ideas about technological methods or how technology reduces impacts of tectonic hazards. No developed points are made. **0 marks** No response or no response worthy of credit.		Examples of **well-developed** ideas: Cross bracing is a technology feature which is used to support the structure of buildings which encourages flexibility and allows the building to bend and twist during earthquakes but remain intact. The support trusses provide additional support to tall buildings. This interlocking system can be used in office blocks and tall flats which protects the population of large cities particularly in advanced countries. Examples of **developed** ideas: Buildings can have criss cross frames which allows the building to move during earthquakes. The buildings sway but the frames hold the building together during the shock waves. They are mostly found in cities. Examples of **simple** ideas: People can protect themselves from earthquakes by building special frames within their tall buildings.

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Question			Answer	Marks	Guidance
2.	**(a)**		C: on land masses (✓)	**1**	(✓)
	(b)		D: sunspots (✓)	**1**	(✓)
	(c)		The decadal trend fluctuates (✓) Gradual increase over time (✓) 1910 – temperature decreases compared to 1961-1990 (✓) Steep increase from 2000–2010 (✓)	**2**	2 x 1 (✓) 1 mark for description of overall trend (✓) 1 mark for use of graph (✓)
	(d)		Historical records (✓) These may be less reliable as they are handwritten or drawn based on one person's interpretation (DEV) without the use of modern thermometers (DEV) Other possible data/evidence: Sea ice positions (✓) Global temperature change (✓) Paintings (✓) Diaries (✓)	**3**	3 x 1 Answer given will depend on type of data/evidence for climate change chosen 1 mark reserved for a type of data/evidence for climate change (✓) 2 marks for reliability of data i.e. glacial/interglacial cycles = natural process, need a range of data to support, level of glacial retreat, ice sheet depletion, global temperature variances (DEV) Must be related to reliability
	(e)		**Level 3 (5–6 marks)** An answer at this level demonstrates **thorough** understanding of the social impacts of climate change in the UK in the 21st century (AO2) and their positive and negative effects on people. This will be shown by including **well-developed** ideas about how people within the UK are affected by climate change in the 21st century. **Level 2 (3–4 marks)** An answer at this level demonstrates **reasonable** understanding of the social impacts of climate change in the UK in the 21st century (AO2) and their positive and/or negative effects on people.	**6**	**Indicative content** Impacts on people *At least two valid impacts need for full marks. No specific place required.* *Max L2 (4 marks) for 1 fully developed impact* Increased flooding = homelessness, deaths, loss of communications Extreme weather events= storms – damage to homes, droughts - water shortages, dehydration, hose pipe bans Effects on farming = livelihoods, price of goods, availability of products Effects on fishing – livelihoods, price of goods Pressure on resources – development of new strains

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Question			Answer	Marks	Guidance
			This will be shown by including **developed** ideas about how people of the UK within the UK are affected by climate change in the 21st century. **Level 1 (1–2 marks)** An answer at this level demonstrates **basic** understanding of the social impacts of climate change in the UK in the 21st century (AO2) and their effects on people. This will be shown by including **simple** ideas about how people within the UK are affected by climate change in the 21st century. No developed points are made. **0 marks** No response or no response worthy of credit.		Increased pests/diseases on crops – increased/decreased availability Examples of **well-developed** ideas: Social impacts of climate change for people in the UK could be as a result of more frequent extreme weather events. These large amounts of rainfall for sustained periods would cause flooding to lowland areas of the UK, for example in Somerset levels. This would force people to have to leave their homes or have to be rescued. They would also be isolated from amenities and unable to get food supplies or to their work place as transport routes would be cut off. Examples of **developed** ideas: A social impact of climate change in the UK would be when people would be made homeless due to increased flooding from more storms occurring. Another impact would be a hose pipe ban as the climate is also becoming drier and hotter. Examples of **simple** ideas: People would not be able to travel to work or go shopping because of more floods.

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Question			Answer	Marks	Guidance
3.	**(a)**	**(i)**	C: 2400	**1**	(✓)
		(ii)	C: 8880	**1**	(✓)
		(iii)	888812	**1**	(✓) Accept 887812, 888811, 888813, 889812
	(b)		Possible suggestions: Geology (✓) so they can plan which sites to visit depending on their fieldwork title (DEV) Youth hostels/accommodation (✓) so they can plan a route for fieldwork investigations starting from their accommodation (DEV) Public transport information (✓) so they can plan travel to and from the area (DEV) Coastal management zones/techniques (✓) so they can decide which section of the coastline to sample (DEV)	**2**	1 x 2 (✓) 1 mark for layer suggested (✓) 1 mark for reason (DEV) Do not accept symbols already used on the map
	(c)		Describe processes: Hydraulic action – water and air at high pressure is forced into cracks and joints (✓). This creates weakness in the rocks which makes them collapse (✓) Abrasion – when pebbles and sediment is thrown against the cliff face and causes erosion into a notch (✓) – usually concentrated at the high water mark (✓) Weathering – breaking down of the cliff face or roof of arch by natural processes (✓) without any moving forces (✓)	**2**	1 x 2 (✓) Process must be described not just named No credit for naming the landform – arch

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Question	Answer	Marks	Guidance
(d)	**Case study: distinctive landscape in the UK, not a coastal area** **Level 3 (5–6 marks)** An answer at this level demonstrates a **thorough** knowledge of geomorphic processes (AO1) and a **thorough** understanding of how human activity has influenced the geomorphic processes (AO2). This will be shown by including **well-developed** ideas **both** about the geomorphic processes **and** how human activity has influenced the geomorphic processes. The answer must also include **place-specific** details for the landscape. Amount of relevant place-specific detail determines credit within level. **Level 2 (3–4 marks)** An answer at this level demonstrates **reasonable** knowledge of geomorphic processes (AO1) and **reasonable** understanding of how human activity has influenced the geomorphic processes (AO2). This will be shown by including **developed** ideas **either** about the geomorphic processes **or** how human activity has influenced the geomorphic processes. Developed ideas but no place-specific detail credited up to **bottom** of level. Valid named example needed for top of level.	6	Case study will be marked using 3 levels: Case study: responses will depend on candidate's area of study. **Indicative content** Distinctive landscape may be from any landscape, except a coastal landscape Examples for a river basin: Management strategies could include: Flood barriers/dams –silting up, restriction of sediment replenishment (dev) River realigning/straightening – resctriction of meanders/horizontal) lateral erosion Channelisation- impact of erosion, decreased bedload, deposition, throughflow. Building on flood plains – increased surface runoff, Afforestation/deforestation Artificial Levees/Embankments Examples of **well-developed** ideas: Humans have straightened rivers and introduced channelisation to increase the discharge of the River Nene in Northampton. These changes alter the velocity of the river and reduce friction. These human activities reduce the amount of lateral and vertical erosion causing the river to not form a meander which would be the natural landscape. Examples of **developed** ideas: Channel straightening is one way that humans have altered the river Nene landscape in Northampton. They

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Question			Answer	Marks	Guidance
			Level 1 (1–2 marks) An answer at this level demonstrates **basic** knowledge of geomorphic processes (AO1) and **basic** understanding of how human activity has influenced the geomorphic processes (AO2). This will be shown by including **simple** ideas about the geomorphic processes or how human activity has influenced the geomorphic processes. No developed points are made. Simple ideas or appropriate named example only credited at **bottom** of level. **0 marks** No response or no response worthy of credit.		have used concrete to change the route of the river which has caused less erosion and flooding. Examples of **simple** ideas: One way humans have affected the river is by taking away the bends and making the river straighter.

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Question			Answer	Marks	Guidance
4.	**(a)**	**(i)**	A: hot desert (✓)	**1**	(✓)
		(ii)	B: shows more than one season (✓)	**1**	(✓)
	(b)		C: rainfall (✓)	**1**	(✓)
	(c)		**Goods** Food (✓) for commercial export (fruit, coffee, cocoa) providing an income to the country of origin (DEV) Medicines (✓) as millions of plant and animal species contain genetic material vital for fighting diseases such as leukaemia (DEV) **Services** Reduction of flood risk (✓) trees intercept and slow down rainwater as it moves through the drainage basin, lowering the flood risk (DEV) Atmospheric gas balance (✓) the rainforest is a natural store of carbon dioxide. If it were to disappear then carbon levels would rise contributing to climate change (DEV)	**2**	1 x 2 (✓) 1 mark for good or service named (✓) 1 mark for describing it's value (DEV)
	(d*)		**Case study: a small scale example of sustainable management in either the Arctic or Antarctic** **Level 3 (6–8 marks)** An answer at this level demonstrates **thorough** knowledge of a small scale sustainable management scheme (AO1) and **thorough** understanding of the concept of sustainability (AO2). There is a **comprehensive** evaluation of the success of the sustainable management (AO3). This will be shown by including **developed** ideas about the small scale sustainable management scheme, sustainability **and well-developed** ideas about the success of the sustainable management.	**8**	**Indicative content** Case study: either Arctic or Antarctic example Max level 1 = large scale e.g. Earth Summit or Treaty's Examples could include sustainable tourism, conservation, whaling Example of **well-developed** ideas: The scheme where litter has to be removed, as part of the sustainable tourism management plan, has had a positive impact on both the waste management and the habitats of birds and sea life in Antarctica. The scheme has many positive points but also the tours potentially have a number of impacts on ecosystems, such as interrupting

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Question			Answer	Marks	Guidance
			The answer must also include **place-specific** details for the named management scheme. Amount of relevant place-specific detail determines credit within level. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. **Level 2 (3–5 marks)** An answer at this level demonstrates **reasonable** knowledge of a small scale sustainable management scheme (AO1) and **reasonable** understanding of the concept of sustainable management (AO2). There is **reasonable** evaluation of the success of the sustainable management (AO3). This will be shown by including **developed** ideas about **either** the small scale sustainable management scheme, sustainability **or** the success of the sustainable management. Developed ideas but no place-specific detail credited up to **middle** of level. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 1 (1–2 marks)** An answer at this level demonstrates **basic** knowledge of a small scale sustainable management scheme (AO1) **or basic** understanding of the concept of sustainable management (AO2). There is a **basic**		species breeding routines. However, most tours try to advise tourists on where to position themselves when viewing birds and animals to cause least impact. Example of **developed** ideas: The Antarctic is a fragile ecosystem which is protected from visitors and scientists by only allowing a certain number of people to go there. People have to take their rubbish home with them. This has meant less people are destroying the ecosystem for the penguins. Example of **simple** ideas: People have been stopped from going on large ships to holiday in the Antarctic.

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Question			Answer	Marks	Guidance
			evaluation of the success of the sustainable management (AO3). This will be shown by including **simple** ideas about either the small scale sustainable management scheme, sustainability or the success of the sustainable management. No developed points are made. Simple ideas or appropriate named example only credited at **bottom** of level. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. **0 marks** No evidence submitted or the response does not address the question.		

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Question			Answer	Marks	Guidance
5.	**(a)**		Examples may include: To identify sample sites (✓) To use in conjunction with a GIS map showing sample sites (✓) With annotated labels of the landform (✓) Geolocated to show its position on a map (✓)	**2**	1 x 2 (✓)
	(b)	**(i)**	54mm (✓)	**1**	(✓)
		(ii)	0.23m (✓)	**1**	(✓)
		(iii)	1 mark for correctly completing the graph with 0.29 point and joining the points on the graph	**1**	(✓)
	(c)		Expect a wide range of data collection techniques Measuring river depth this technique was limited due to health and safety (✓) where high bankfull discharge meant that we could not sample enough sites (✓) Measuring river depth, this technique was useful in helping us answer our question 'how do rivers change along their course' (✓) where we were able to sample six sites which gave us a good range of sites along the rivers course (✓)	**2**	2 x 1 (✓) Technique must be related to physical geography No mark awarded for just stating the technique Evaluation may refer to: Limitations and merits of the technique in helping to answer the question for investigation How easy the data collected was to analyse and present Level of ease carrying out the technique at the time/day of collection
	(d*)		**Level 3 (6–8 marks)** The answer must include a **thorough** analysis of the fieldwork data (AO3) to come to a **thorough** conclusion that answers the question (AO3). This will be shown by including **well-developed** ideas. There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.	**8**	Conclusion: LSD occurs from west to east – supporting evidence from **Figs 9, 10** and **11** large fetch = movement of sediment More sediment on the west than east Example of **well-developed** ideas: From the figures it can be concluded that longshore drift does occur at Sheringham. The raw data in the table illustrates the differences in the sediment levels either side of the groyne which shows more sediment build up

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Question			Answer	Marks	Guidance
			Level 2 (3–5 marks) The answer must include **reasonable** analysis of the fieldwork data (AO3) with **reasonable** conclusion to help answer the question “Does the process of longshore drift occur at Sheringham?”(AO3)**.** This will be shown by including **developed** ideas. There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence. **Level 1 (1–2 marks)** The answer will include **basic** analysis of the fieldwork data (AO3) to come to a **basic** conclusion answering the question “Does the process of longshore drift occur at Sheringham (AO3). This will be shown by including **simple** ideas. The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. **0 marks** No response or no response worthy of credit.		on the west side than on the east side. There is a difference of 2.62m of sand built up between the east and west side of the groyne. This indicates longshore drift is occurring and the groyne is working effectively to trap sand and slow the process of longshore drift. Example of **developed** ideas: The table shows a difference in the amount of sediment on the east and west side of the groyne therefore longshore drift does occur. For example at 12m there is a 0.53m of sand on the east compared to 1.28m on the west. The graph shows an overall greater amount of sand on the west hand side of the groyne, indicating that longshore drift does occur. Example of **simple** ideas: Longshore drift does occur at Sheringham, you can se this from the graph where there is more sand on one side of the groyne.
		✎	Spelling, punctuation and grammar (SPaG) are assessed using the separate marking grid in Appendix 1.	**3**	

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APPENDIX 1

Spelling, punctuation and grammar (SPaG) assessment grid*

High performance 3 marks
Candidates spell, punctuate and use rules of grammar with consistent accuracy and effective control of meaning in the context of the demands of the question. Where required, they use a wide range of specialist terms adeptly and with precision.
Intermediate performance 2 marks
Candidates spell, punctuate and use rules of grammar with considerable accuracy and general control of meaning in the context of the demands of the question. Where required, they use a good range of specialist terms with facility.
Threshold performance 1 mark
Candidates spell, punctuate and use rules of grammar with reasonable accuracy in the context of the demands of the question. Any errors do not hinder meaning in the response. Where required, they use a limited range of specialist terms appropriately.
0 marks
0 marks should be awarded when: The candidate writes nothing. The candidate's response bears no relation to the question. The candidate's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.

**The exam boards and Ofqual are working together to determine the marking expectations for spelling, punctuation and grammar (SPaG) which will apply to all GCSE specifications in History, Geography and Religious Studies. The agreed wording will be included in the mark schemes for accredited sample assessment materials.*

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Assessment Objectives (AO) grid

Question	AO1	AO2	AO3	AO4	Marks	SPaG
1a				1	1	
1b				1	1	
1c				1	1	
1d	2				2	
1e				2	2	
1f	3	3			6	
2a			1		1	
2b	1				1	
2c				2	2	
2d	1		2		3	
2e		6			6	
3ai				1	1	
3aii				1	1	
3aiii				1	1	
3b				2	2	
3c		2			2	
3d	3	3			6	
4ai			1		1	
4aii			1		1	
4b	1				1	
4c	1	1			2	
4d	2	2	4		8	
5a				2	2	
5bi				1	1	
5bii				1	1	
5biii				1	1	
5c			2		2	
5d			8		8	3
Total	14	17	19	17	67	3

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