



**General Certificate of Secondary Education
2025**

Geography

Unit 1

Understanding Our Natural World

[GGY11]

WEDNESDAY 14 MAY, MORNING

**MARK
SCHEME**

General Marking Instructions

Where one response is required to gain a mark, candidates will not gain credit if a correct response is given alongside one or more incorrect responses. This is referred to as listing.

Introduction

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for GCSE Geography.

Candidates must show they are able to:

AO1 Demonstrate geographical knowledge and understanding of:

- Places, environments, processes and concepts; and
- The inter-relationships between places, environments and processes;

AO2 Apply knowledge and understanding to analyse, interpret and evaluate geographical information and issues and to make judgements; and

AO3 Select, adapt and use a variety of skills and techniques to investigate questions and issues and communicate findings.

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If the answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range of any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Marking calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

Threshold performance: Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

Intermediate performance: Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

High performance: Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is basic.

Level 2: Quality of written communication is good.

Level 3: Quality of written communication is excellent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below.

Level 1

Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. A limited range of specialist terms is used appropriately.

Level 2

Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. A good range of specialist terms is used appropriately.

Level 3

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present, and organise effectively, relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision.

1 Theme A: River Environments

AVAILABLE
MARKS

- (a) (i) Complete **Table 1** below by Identifying one input and one store shown in **Fig. 1**. A transfer has been completed for you.

Input	Precipitation [1] / Rainfall [1]
Store	Interception/ soil store/ groundwater store or anything else appropriate [1] Accept - surface store/river/trees/soil/ groundwater
Transfer	Infiltration [GIVEN]

[2]

- (ii) Describe and explain the differences in water storage and transfer as shown in **Fig. 1**.

Award [0] for an answer not worthy of credit

Level 1 ([1]–[2])

A basic description of how water can be stored or transferred in the countryside or city,

e.g. More water is stored in the countryside [1]

e.g. More water is transferred in the city [1]

e.g. 95% of water is transferred in the countryside and 5% of water is transferred in the city. [2]

Level 2 ([3]–[4])

A limited description and explanation of how water can be stored and/or transferred in the countryside and/or city.

e.g. More water is stored in the countryside because there are more trees and soil stores there. This means only 5% of water is transferred by surface run-off in the countryside. [3]

The opposite is true in the city where 95% of water is transferred by surface run-off. [4]

Level 3 ([5])

A detailed description and explanation of how water can be stored and transferred in the countryside and city.

e.g. More water is stored in the countryside. This is because there are more trees and soil stores available. This means only 5% of water is transferred via surface runoff in the countryside. However, 95% of water is transferred as surface runoff in the city because impermeable surfaces such as roads and artificial drains offer a fast route to the river. [5]

[5]

- (b) Explain how a meander and its features are formed. [6]

Award [0] for an answer not worthy of credit.

Level 1 ([1]–[2])

A basic statement: e.g. A meander is a bend [1] in the river [1] formed by erosion. [2]

Level 2 ([3]–[4])

A limited explanation that acknowledges the role of erosion and/or deposition in the formation of a meander. At this level the answer may be unbalanced with one process covered in more detail than the other. Both erosion and

deposition are needed to access top Level 2. If explanation is limited, but two features (river cliff and slip off slope) are named, answer stays in L2, e.g. Water flows fastest on the outside of the bend/meander where the channel is deeper and there is less friction. This causes greater erosion which deepens the channel. [3] On the inside of the bend (meander) the water is shallower, therefore there is more friction so the water is slow-flowing and deposition occurs. [4]

Level 3 ([5]–[6])

A detailed explanation detailing how a meander forms, making reference to both erosion and deposition and which includes reference to a river cliff and slip-off slope,

e.g. Water flows fastest on the outside of the river bend (meander) where the channel is deeper and there is less friction. This is due to water being directed towards the outside of the bend as it flows around the meander. This causes erosion which deepens the channel. This erosion results in the formation of a steep-sided river cliff. In contrast, on the inside of the bend (meander), water is shallower and is slow-flowing due to greater friction. This causes deposition to occur. [5] Over time material builds up on the inside of the bend (meander); this is called a slip-off slope. [6]

- (c) (i) Complete **Table 2** by drawing arrows to sort the causes of river flooding into physical or human. One has been completed for you.

Physical	Cause of flooding	Human
	← Snowmelt (GIVEN)	
←	Heavy rainfall	
	Urbanisation →	

[2]

- (ii) Describe what washlands are and how they help to manage the risk of river flooding. [3]

Award [0] for an answer not worthy of credit

Award [1] for a brief statement, e.g. Washlands store floodwater [1] or washlands are natural green spaces beside a river. [1]

Award [2] for a fuller statement, which describes how washlands help manage the risk of flooding, e.g. Washlands are green spaces such as playing fields alongside a river, when a river floods it naturally stores floodwater. [2]

Award [3] for a detailed statement with elaboration which describes how washlands help manage the risk of flooding, e.g. Washlands are green spaces such as playing fields alongside a river, when a river floods it naturally stores floodwater. This helps to prevent flooding downstream. [3]

[3]

- (d) For a named river **outside the British Isles** which you have studied, evaluate the sustainability of the river management strategy used to manage its floods. [7]

Award [0] for an answer not worthy of credit, e.g. a coastal strategy.

Note: no mark for name of river.

Max Level 1 if UK river/ or no named river.

Level 1 ([1]–[2])

Candidates provide a basic description of the strategy used on a river, e.g. Levees were built along stretches of the river [1] and meanders were straightened [2].

Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. A limited range of specialist terms is used appropriately.

Level 2 ([3]–[5])

Candidates provide a limited description of the strategy used or may refer to only one method used on a named river outside the British Isles with limited evaluation of the extent to which the strategy can be considered sustainable, e.g. They have tried to control the Mississippi by building or strengthening levees and straightening meanders. Major flooding in the past shows this strategy has not worked [3]. Both methods required continual maintenance and are considerably expensive to construct [4]. To achieve [5] need additional detail, e.g. 15 m levees or meanders have been straightened over a 1750km stretch.

Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. A good range of specialist terms is used appropriately.

Level 3 ([6]–[7])

More than one engineering method is needed for Level 3. Candidates provide a detailed description of the river management strategy used on a river outside the British Isles. There is clear evaluation of the sustainability of the strategy in managing the floods. An overall conclusion/judgement is required for top Level 3, e.g. The Mississippi River in the USA has been managed for over 100 years to improve navigation and prevent flooding. The levees were raised to 15 metres along 3000 km of the river and meanders were straightened over a 1750 km stretch allowing much of the Mississippi floodplain to be developed for farming, trade and the growth of urban areas such as New Orleans. 106 dams have also been constructed on the Mississippi to hold back floodwaters. However, these methods are not sustainable as they are very expensive and require regular maintenance. [6] Dams can prevent silt deposits reaching further downstream, upsetting the ecology of the river and the growth of the Mississippi Delta. Additionally, levees can prevent the return of floodwater and therefore extend the flooding period. [6] Overall hard engineering methods are more suitable/better at controlling river floods in the short term [7].

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present, and organise effectively, relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision. [7]

2 Theme B: Coastal Environments

AVAILABLE
MARKS

Study the Ordnance Survey extract showing part of the coast of Yorkshire, England and answer the questions which follow.

- (a) (i) State the height of the land shown by the triangulation pillar at Black Brow, Sleights Moor, GR 855049.

289 m [1]

- (ii) State the straight line distance from the viewpoint on the A169 Main Road GR 867059 to the viewpoint at Robin Hood's Bay GR 957058.

8.8 to 9.0 km [2]
8.71 to 8.79 or 9.01 to 9.1km [1] [2]

- (iii) State the direction of Robin Hood's Bay GR 9505 from the East Pier in Whitby GR 9011.

South East [1]

- (iv) Whitby has a sandy beach. Underline the correct answer in the statements below about sandy beaches. One has been completed for you.

- Sandy beaches are usually found at sheltered bays / **exposed headlands**.
- The **finest** / coarsest particles of sand will be found at the wave limit further up the beach. **GIVEN**
- Sandy beaches form where constructive / **destructive** waves operate.
- Sandy beaches have a **steeper** / gentler slope than shingle beaches.

(3 × [1]) [3]

- (v) Robin Hood's Bay extends from GR 9505 to GR 9702. State **three** pieces of evidence from the map which show that this area is attractive to tourists.

Any **three** from:

- Visitors Centre
- Museum
- Viewpoint
- Camping and caravan site
- Camp site
- Cleveland Way/National Trail/European Long distance path
- Parking/Car park
- National Trust Area (always open)
- Stoupe Beck Sands/(sandy) beach or cliffs
- Boggle Hole Youth Hostel
- Cycle route
- Raven Hall Hotel

(3 × [1]) [3]

- (b) A wave cut platform is found at Robin Hood's Bay GR 9505.

Explain how a wave cut platform is formed.

Award [0] for a response not worthy of credit.

Level 1 ([1]–[2])

A basic statement relating to the process or some of the stages in the formation of a wave cut platform.

e.g. A wave cut platform forms due to erosion of a cliff. [1]

e.g. A wave cut platform is formed when waves attack a cliff creating a crack [2]

Level 2 ([3]–[4])

A limited explanation which refers both to the stages and the process of erosion.

e.g. A wave cut platform is formed when waves attack the base of a cliff and erosion (by hydraulic pressures of the waves) creates a notch (or crack) at the bottom of the cliff [3] and the cliff collapses leaving the wave cut platform at the foot of the cliff. [4]

Level 3 ([5])

A detailed explanation which refers both to the stages and the process of erosion of a cliff which retreats as it collapses. The answer should make clear that the wave cut platform is the rocky shore at the foot of the cliff.

e.g. A wave cut platform is formed when waves attack the base of a cliff and erosion by abrasion (or hydraulic pressure of the waves creates a notch at the bottom of the cliff; this notch is widened so the cliff is undercut by erosion and eventually the cliff collapses and retreats leaving a rocky platform or shore at the foot of the cliff (which is only visible at low tide). [5] [5]

- (c) Many coastal areas are under threat. Explain one possible impact of climate change on a coast which could lead to coastal defences being required.

Award [0] for a response not worthy of credit.

Award [1] for a basic statement:

e.g. Climate change will lead to a rise in sea levels.

e.g. Coastal areas will be flooded.

Award [2] for a statement with a consequence:

e.g. It is believed that climate change will lead to a rise in sea levels. This would result in flooding of low-lying coastal areas, so defences need to be put in place to protect the coastline.

Award [3] for a statement and consequence with elaboration on the possible impact of climate change on the coastline/or elaboration on the causes of rising sea levels.

e.g. Climate change due to global warming will lead to melting ice caps and a rise in sea levels causing flooding of many low-lying coastal areas. [3]

e.g. It is believed that climate change will lead to a rise in sea levels, e.g. the average predicted rise in sea levels due to the thermal expansion of water is about 48cm. This would result in flooding of low-lying coastal areas/cities. [3]

e.g. Climate change due to global warming will lead to rising sea levels and potential flooding of low-lying coastal areas. For example, the World Bank estimates that a 1 m rise in sea levels would flood half of Bangladesh's rice fields and force the migration of millions of people. [3] [3]

- (d) Evaluate a coastal management strategy used to protect a named area of coast in the British Isles with reference to its sustainability.

Award [0] for an answer not worthy of credit, e.g. a river strategy

Max Level 1 if there is no named coastline.

Max Level 2 if there is only one method of coastal management fully described with factual detail and good evaluation [4]

Level 1 ([1]–[2])

A basic response referring to a coastal management strategy. The answer may not refer to a specific named coastline in the British Isles. There is no evaluation or reference to sustainability,

e.g. Gabions were placed near the river mouth to reduce erosion [1]; groynes and a sea wall were also built. [2]

Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. A limited range of specialist terms is used appropriately.

Level 2 ([3]–[5])

A limited account of a coastal management strategy for a named coastline in the British Isles. The answer evaluates the strategy so both positive and negative aspects are referred to in the methods discussed.

Some example answers include:

- detail on the strategy with good evaluation but no discussion of sustainability Max L 2 [5]
- good depth on the strategy with a basic attempt to evaluate in terms of sustainability but only the positive or negative aspects are referred to [4]
- some evaluation of the sustainability of the strategy but lacking in accurate factual detail [4]
- an answer with accurate detail but only focused on the positive OR the negative aspects of the strategy and sustainability [5]

e.g. At Newcastle there have been several methods used to manage the coast in a sustainable way; a major method was the new sea wall which was built in 2007 as part of the promenade development. The sea wall was built 1 metre higher than the old sea wall. It was designed to stop the sea from flooding the town but was expensive. [4] Also, gabions and groynes were used to protect the land. [5]

Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. A good range of specialist terms is used appropriately.

Level 3 ([6]–[7])

A detailed answer on a management strategy for a named coastline in the British Isles. The answer has an evaluation which clearly discusses varied positive and negative aspects of the methods and their sustainability. The answer also includes a full evaluative comment in the conclusion for [7].

e.g. At Newcastle there have been several methods used to manage the

coast in a sustainable way; a major method was the new sea wall which was built in 2007 as part of the promenade development. The sea wall was built 1 metre higher than the old sea wall and has a recurved top [wave return design] so that the force of the waves is deflected back to sea; this is sustainable as, despite the cost of the whole development being £4 million, it does not require much maintenance and was designed to stop the sea from flooding the town for at least 50 years. Also gabions, rock armour and groynes were used to reduce wave impact and help build up sand on the beach. Gabions are wire cages of local stone and were used to protect the land at the mouth of the river Shimna. Although the wire can rust and debris collect in the cages, there were a less expensive and so more sustainable method of defence as the fit in with the character of the local area. However the groynes that were used to stop longshore drift cost £1250 per 20 metres, have decayed and are no longer effective and also they are not sustainable as they prevent sand from reaching further along the coast at Murlough Bay. Overall the strategy is successful at protecting the town from flooding which makes it sustainable but overall it was very expensive. Some local people are concerned about the changes at the coast reducing access to the beach where there are gabions and that the sea wall actually increases erosion of the sand from the beach in front of it, which may not be sustainable in the longer term at Newcastle. [7]

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present, and organise effectively, relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision. [7]

3 Our Changing Weather and Climate

AVAILABLE
MARKS

- (a) Describe how a digital thermometer measures air temperature.

Level 1 ([1]–[2])

A basic description of a digital thermometer,

e.g. A digital thermometer contains a thermistor/sensor [1]

e.g. A digital thermometer measures air temperature in Degrees Celsius [1]

e.g. A digital thermometer displays the highest and lowest temperature over a 24 hour period [1] and is measured in Degrees Celsius. [2]

Level 2 ([3]–[4])

A limited description of a digital thermometer.

e.g. A digital thermometer is placed in a Stevenson's Screen (to avoid direct sunlight) and it measures air temperature in degrees C and displays it on a (LCD) screen. [3]

e.g. A digital thermometer contains a thermistor or Sensor. This becomes more conductive when temperature rises. The temperature is then displayed on the (LCD) screen [3]/in Degrees Celsius. [4]

Level 3 ([5])

A detailed description of a digital thermometer which references the conductivity of the thermistor or Sensor and its ability to display the temperature,

e.g. A digital thermometer contains a thermistor. This becomes more conductive when temperature rises. A microcomputer, pinpoints the temperature (by measuring the conductivity). The temperature is then displayed on the LCD screen in Degrees Celsius. [5]

[5]

- (b) (i) State the meaning of the term **weather forecast**.

Award [1] for a basic definition,

e.g. A prediction in the weather [1]

Award [2] for a detailed definition, which may refer to analysing previous data or named data sources.

e.g. a statement of what the weather is likely to be for the next day or few days, usually broadcast on television or radio or viewed on an app. [2]

[2]

- (ii) Complete **Table 3** below by naming sources of data which can be used for a weather forecast. One has been completed for you.

Source of Data type:	Example
Land	Land based weather station (GIVEN)
Air	Weather balloon/satellite or anything else appropriate e.g. drone
Sea	Weather Buoy or anything else appropriate e.g. (weather) ship

[2]

- (c) (i) Underline the correct words in the following statements relating to an anticyclone weather system. One has been completed for you.
- An anticyclone is also known as a high/low pressure weather system. (GIVEN)
 - During an anticyclone in summer, mist/freezing fog can be seen in the mornings.
 - Winds move clockwise/anticlockwise within an anticyclone.
 - The air in an anticyclone is rising/sinking.
 - Anticyclones which last several weeks in the summer can cause a heatwave/heatsurge. [4]
- (ii) A depression is expected to arrive over the UK from the west in the next few days. Describe and explain **two** possible changes which could occur to the UK's weather
Alternative answers can be credited.

Level 1 ([1]–[2])

A basic statement,

e.g. The UK will experience rainfall [1]

e.g. The UK will experience a depression which will bring rain and windy conditions. [2]

Level 2 ([3]–[4])

A limited description and explanation of how the weather will change over the next few days,

e.g. The UK will experience a depression which will bring rain and windy conditions. This is due to air rising and condensing. [3]

e.g. The UK will experience a depression which will bring rain and windy conditions. This is due to air rising and condensing, forming clouds which can be seen in the Atlantic Ocean. A steeper pressure gradient will cause wind speeds to strengthen. [4]

Level 3 ([5]–[6])

A detailed description and explanation of how the weather will change over the next few days, two changes are clearly noted.

e.g. The UK will experience a depression which will replace dry, calm conditions associated with a summer anticyclone, with rain and windy conditions. This is due to air rising, cooling and condensing, forming clouds which can be seen in the Atlantic Ocean. A steeper pressure gradient will cause wind speeds to strengthen. [5] As winds will quickly move from an area of high pressure to an area of low pressure. [6] [6]

- (d) With reference to an extreme weather event outside the British Isles which you have studied [tornado, drought or hurricane], describe the impacts this event had on property.

Award [0] for a response not worthy of credit.

Do not credit answers which refer to an extreme flood or earthquake event.

Max Level 1 if no place is named or answer refers to impacts on people only.

Level 1 ([1]–[2])

A basic description of the impacts of a relevant extreme weather event, e.g. hurricanes have strong winds which destroy homes [1] This results in whole cities being destroyed such as Tacloban in the Philippines. [2]

Spelling, punctuation and the rules of grammar are used with some accuracy so that meaning is reasonably clear. Candidates present some relevant information in a form and using a style of writing which suits its purpose. The text is reasonably legible. A limited range of specialist terms is used appropriately.

Level 2 ([3]–[4])

A limited description which covers several impacts on property, e.g. Typhoon Haiyan had strong winds up to 313 km/hour which destroyed homes such as in Tacloban in the Philippines; crops were destroyed and power lines brought down [3]/uprooting thousands of trees/high waves caused widespread floods and coastal fishing fleets were destroyed/a sports stadium used for evacuation kept its roof, but a huge surge of water flooded the building. [4]

Spelling, punctuation and the rules of grammar are used with considerable accuracy so that meaning is clear. Candidates present relevant information in a form and using a style of writing which suits its purpose. The text is legible. A good range of specialist terms is used appropriately.

Level 3 ([5]–[6])

A detailed description of the impact of a specific extreme weather event on property in a named place, e.g. Typhoon Haiyan hit the Philippines in 2013 bringing strong winds of up to 313 km/hour which destroyed homes in Tacloban; crops were destroyed with \$225 million damage to agriculture with rice, maize and sugar cane crops being flattened. Around 30 000 fishing boats and their equipment were destroyed by the high winds [5]. Waves over 7m high caused widespread floods e.g. in the city of Bogo homes were badly damaged or totally destroyed with 80% of the power lines brought down. [6]

Spelling, punctuation and the rules of grammar are used with almost faultless accuracy so that meaning is clear. Candidates present, and organise effectively, relevant information in a form and using a style of writing which suits its purpose. The text is fluent and legible. A wide range of specialist terms is used skilfully and with precision.

[6]

AVAILABLE
MARKS

25

4 The Restless Earth

AVAILABLE
MARKS

- (a) (i) Using **Fig. 3** to help you, complete **Table 4** by inserting TRUE or FALSE beside the statement. One has been completed for you.
One mark for each correct answer.

Table 4

STATEMENT	TRUE / FALSE
Earthquakes and volcanoes are found around the Pacific Ocean	(GIVEN)
There are 12 named plates on Fig. 3 .	TRUE
Earthquakes are found on the east coast of North America	FALSE
Volcanoes are found in Africa.	TRUE
The Nazca and the Pacific Plate are moving towards each other.	FALSE

[4]

- (ii) State the meaning of the term **earthquake**.

Award [0] for a response not worthy of credit

Award [1] for a partial definition,

e.g. The shaking of the ground. [1]

e.g. The release of pressure from the movement of plates. [1]

Award [2] for a full definition,

e.g. The release of pressure from the movement of plates (or at a

Faultline). It causes the ground to shake violently. [2]

[2]

- (iii) Underline one potential consequence of an earthquake from the words below

Tornado

Tsunami

Weathering

[1]

- (b) (i) Underline which of the following volcanoes on Fig. 4 has the greatest potential for eruption.

Merapi

Krakatoa

Agung

[1]

- (ii) Underline the correct number of volcanoes on the island of Sumatra as shown in **Fig. 4**.

5

8

11

[1]

- (iii) Indonesia is on a destructive plate margin. Explain why volcanoes occur at a destructive plate margin.

Award [0] for a response not worthy of credit. Credit answers relating to any destructive plate boundary.

Level 1 ([1]) A basic statement relating to the location of volcanoes, e.g. Volcanoes are found where plates move towards each other. [1]

e.g. Volcanoes are found where magma rises. [1]

Level 2 ([2]–[3]) A limited explanation which shows some understanding of why volcanoes are found at a destructive plate boundary,

e.g. Volcanoes are found where one plate collides with another, and magma rises from the melting plate. [2]
e.g. Volcanoes are found where one plate collides with another, and magma rises from the melting plate [zone of subduction] and rising magma escapes as lava building up as a volcano. [3]

Level 3 [(4)] A detailed explanation which shows understanding of why volcanoes occur at destructive plate boundaries,
e.g. Volcanoes are found where convectional currents in the mantle causes one plate to sink (subduct) under another (and slab pull is encouraged by gravity). This causes the plate to melt and forces magma to rise through the crust creating a volcano. [4] [4]

- (c) (i) Complete **Table 5** by naming the rock type beside the correct description of its formation. Choose your answer from the list below.

IGNEOUS

METAMORPHIC

SEDIMENTARY

[1] for each correct rock type

Table 5

DESCRIPTION OF ROCK FORMATION	ROCK TYPE
These are rocks which have undergone change through heat and pressure within the Earth's crust.	METAMORPHIC
These rocks have been laid down in layers and compacted on the seabed.	SEDIMENTARY
These rocks are formed when lava cools down.	IGNEOUS

[3]

- (ii) Name **one** sedimentary rock
Limestone / Sandstone [1]
Accept any valid alternative [1] [1]

- (iii) Describe and explain the difference in the size of crystals between basalt and granite.

Level 1 [(1)] A basic statement relating to the size of crystals of either basalt or granite.

e.g. Basalt crystals are small [1]
e.g. Granite crystals are large [1]

Level 2 [(2–3)] A full description and/or explanation relating to the size of the crystals of either basalt or granite.

e.g. Basalt crystals are small and granite crystals are large. [2]
e.g. Basalt crystals are small due to the magma cooling down very quickly. [2]
e.g. Basalt crystals are small, but granite crystals are large due to the magma cooling down very slowly. [3]

Level 3 [(4)] A detailed explanation relating to both basalt and granite crystals.

e.g. Basalt crystals are small because the magma cools very quickly but granite crystals are large due to the magma cooling down very slowly. (This allows the crystals to grow). [4] [4]

- (d) Name an earthquake in a MEDC **or** LEDC which you have studied. Describe impacts of this earthquake on people.
Do not credit answers which outline impacts of a volcanic eruption, flooding or other natural disasters.
Max Level 1 if no earthquake is named.

Award [0] for a response not worthy of credit.

Level 1 ([1]) A basic description of the impact of a relevant earthquake event which they have studied,
e.g. Many people died. [1]
e.g. Many buildings were destroyed. [1]

Level 2 ([2]–[3]) A limited description of the impacts of a named earthquake event on people. A fact/figure needed to access Top L2,
e.g. The Great Tohoku Earthquake occurred in 2011 and killed many people and destroyed many buildings. [2]
e.g. The Great Tohoku Earthquake occurred in 2011 and killed many people and buildings. This caused widespread grief across the country. It also triggered a tsunami which destroyed 7 reactors in a nuclear power plant (Fukushima). [3]

Level 3 ([4]) A detailed description of the impacts of a named earthquake, at least 2 impacts on people are noted with good case study detail evident,
e.g. The Great Tohoku Earthquake occurred in 2011 and killed 20,352 people. This caused widespread grief across the country. It also triggered a tsunami which destroyed 7 reactors in a nuclear power plant (Fukushima) which released over 4000 times more radiation than normal. This led to long term health concerns for the people as radioactive leaks had contaminated local areas. [4]

Total

**AVAILABLE
MARKS**

25

100