Teacher Support Meeting

GCSE Geography A

Specimen Assessment Materials – Unit 1

Contents

The Restless Earth

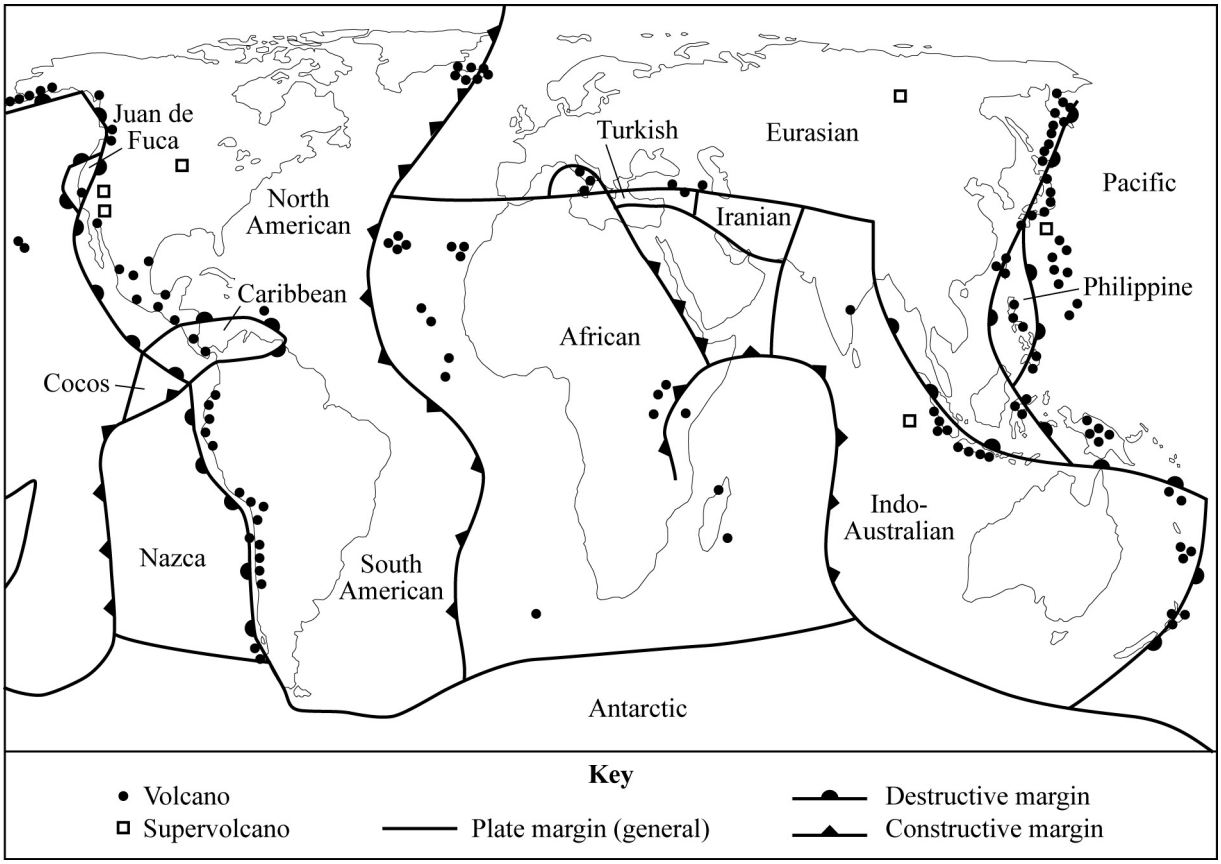
Specimen papers and Mark Schemes

Higher Tier

1The Restless Earth **Total for this question: 25 marks**

1 (a) Study **Figure 1** which shows the earth's tectonic plates and the distribution of volcanoes and supervolcanoes.

Figure 1



1 (a) (i) How is the distribution of supervolcanoes different from that of volcanoes?

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(2 marks)

1(a)(i) Any 2 ways
E.g. volcanoes occur in linear clusters (1), while supervolcanoes are much more scattered / occur individually (1); volcanoes occur on plate boundaries (1) while supervolcanoes occur some distance from them
e.g. in North America (1).
Volcanoes occur at both constructive and destructive plate boundaries (1) whilst supervolcanoes appear to be nearer to destructive only (1).
2 x 1 or 1 x (1 + 1). **2 marks**

1(a) (ii)Explain why volcanoes are found at destructive plate boundaries.

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(3 marks)

1(a)(ii) Oceanic and continental plates move towards each other (1); the denser oceanic crust goes below the lighter continental crust (1); as it is pushed into the mantle, it is melted and destroyed (1); a pool of magma and an increase in pressure results (1); this is released by an eruption at the surface where the magma escapes along a crack (1). **3 marks**
3 x 1

1(a) (iii)Describe the ways in which a supervolcano is different from a volcano.

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(4 marks)

(Extra space) .....

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1(a)(iii) May refer to shape / appearance, size of feature, scale of an eruption, impact of an eruption.
Shape – supervolcanoes are flat / surrounded by higher mountains in contrast to the gentle / steep sided mountain / presence of a crater of a volcano.
Size – they are much bigger than a volcano, but less easy to see on the ground e.g. Yellowstone National park is essentially a supervolcano.
Scale – supervolcano would be much more violent and dwarf eruptions such as Mt St Helens will have much wider effects – on a global scale; will emit much more material – either ash or magma.
Impact – will have devastating consequences within 200km – all life gone and serious impact on continents unlike volcano where effects more localised.

Level 1 (Basic) 1–2 marks
Describes the features of either a volcano and/or supervolcano separately.
Simple statements.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3–4 marks
Links statements.
Develops points.
Makes contrasts clear.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate **4 marks**
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

1(b)Study **Figure 2** which shows information about frequency and magnitude of earthquakes between 2000 and 2007.

Figure 2

Magnitude (Richter scale)	Frequency
8.0 – 8.9	12
7.0 – 7.9	103
6.0 – 6.9	1033
5.0 – 5.9	11694
4.0 – 4.9	82762
3.0 – 3.9	62013
2.0 – 2.9	40491
1.0 – 1.9	7039
0.0 – 0.9	32082

1 (b) (i) Describe the relationship between the magnitude of earthquakes and their frequency.

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(4 marks)

1(b)(i) The strongest earthquakes occur least frequently (1). As they become weaker, there is an increase until 3.0 – 3.9 magnitude (1). The number then falls, but it is still much higher than those at 8 or above (1). Surprisingly, the weakest earthquakes are not the highest frequency (1). However, there are far more of them than the strongest ones (1). Allow 1 mark for specific use of evidence from table where figures are used, not just copied. Any valid point - 4 x 1 **4 marks**

1(b) (ii)Describe a method, other than the Richter Scale, of measuring earthquakes.

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(4 marks)

(Extra space) .....

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1(b)(ii) Mercalli Scale will form the basis of the answer.
There should be an understanding that this uses observed effects to determine the position on the scale. These may be described as text or as pictures. The scale goes up to XII. The score is given to match the level of impact. E.g. V will mean that everyone will feel the earthquake and dishes and windows will be broken. In contrast, a level XII will mean total destruction.

Level 1 (Basic) 1–2 marks
Simple, listed points.
An idea that it relates to different levels of damage done.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3–4 marks
Points are developed and linked.
The name of the method will be known.
Examples of the types of damage will be linked to the score.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses

some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors. **4 marks**

1(c)Using case studies of earthquakes in rich and poor parts of the world, compare and describe the immediate responses.

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(8 marks)

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1(c) Actual content will depend on the case study being used.
Immediate – Rich parts – response will be rapid; often practice emergency drills; these will be put into effect / Emergency

services mobilised, including helicopters, emergency departments of hospitals, fire service etc. Contingency plans for ensuring supplies of clean water, medical supplies, blankets, shelters.
Poorer areas - There will be reference to the need to rescue people – may be done by relatives and basic equipment or just by hand initially, a need to put out fires, to provide medical help, to ensure there is clean water (and food). All of this may require international aid and teams of sniffer dogs, heavy equipment, medical staff, provision of water purifying tablets, blankets, setting up shelters, tents etc.

Level 1 (Basic) 1–4 marks
Describes responses to an earthquake in a richer or poorer part of the world.
Statements are general in a random order.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 5–6 marks
Immediate similarities or differences in responses are distinguished or contrasts between rich and poor.
Statements are linked.
There is reference to at least one of the case studies named.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

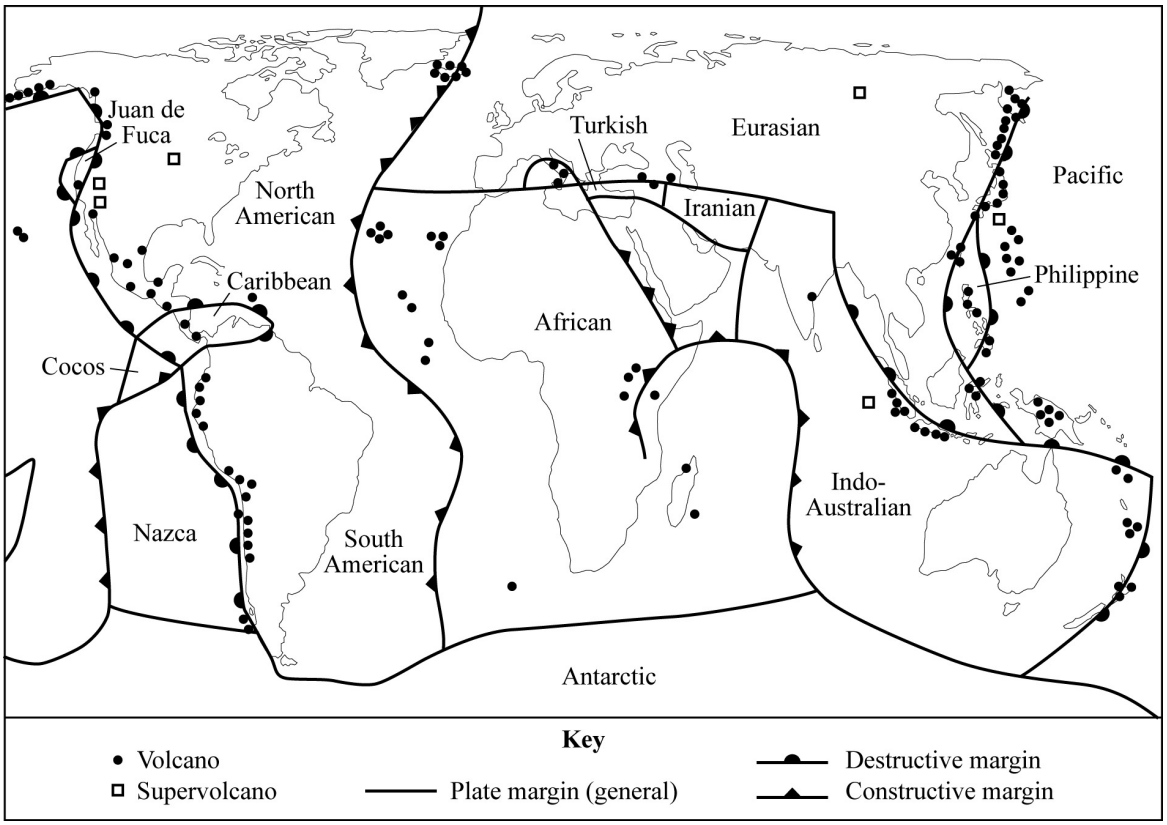
Level 3 (Detailed) 7–8 marks
Immediate similarities and differences in responses are distinguished.
Contrasts between rich and poor are clear.
Detailed reference to specific case studies.
Knowledge of accurate information appropriately contextualised and/or at correct scale
Detailed understanding, supported by relevant evidence and exemplars
Well organised, demonstrating detailed linkages and the inter-relationships between factors
Range of ideas in a logical form; uses a range of specialist terms where appropriate **8 marks**
Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors.
Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Foundation Tier

1The Restless Earth **Total for this question: 25 marks**

1 (a) Study **Figure 1** which shows the earth's tectonic plates and the distribution of volcanoes and supervolcanoes.

Figure 1



1(a) (i)Tick the correct box to show whether each of the following statements about the distribution of volcanoes and supervolcanoes is **True** or **False**.

	True	**False**
Volcanoes are only found on constructive plate boundaries.	☐	☐

There is a line of volcanoes on the west coast of North and South America.		
The majority of supervolcanoes are to be found near destructive plate boundaries.		
Both volcanoes and supervolcanoes are sometimes found away from plate boundaries.		

(4 marks)

1(a)(i) False, True, True, True **4 marks**

1(a) (ii)Complete the paragraph below to explain why volcanoes occur at constructive plate boundaries. Choose the correct words from the following list.

gentle **magma** **apart**

together **steep** **lava**

At constructive plate boundaries, the plates are moving …….. .

Hot, molten rock called …….. moves up from the mantle. This

builds up and a volcano with …….. sides is formed.

(3 marks)

1(a)(ii) together, magma, gentle **3 marks**

1(a) (iii)Give **one** difference between a volcano and a supervolcano for each of the following.

Shape .....

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Scale of eruption .....

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(4 marks)

1(a)(iii) Shape – supervolcanoes are generally flat / surrounded by higher mountains (1) in contrast to the gentle / steep sided mountain / presence of a crater of a volcano (1).
Scale – supervolcano would be much more violent (1) and dwarf eruptions such as Mt St Helens (1); will have much wider effects – on a global scale (1); will emit much more material – either ash or magma. **4**
2×(1+1). **marks**

1(b)Study **Figure 2** which shows information about the six earthquakes that have caused most deaths in the last 100 years.

Figure 2

Year	Location	Level on Richter Scale	Number of deaths
1976	Tangshan, China	7.5	255 000
2004	Sumatra	9.1	227 900
1920	Haiyuan, China	7.8	200 000
1923	Kanto, Japan	7.9	142 000
1948	Ashgabat, USSR	7.3	110 000
2005	Pakistan	7.6	86 000

1 (b) (i) Give evidence that is either for or against the statement that 'the higher the magnitude of the earthquake, the greater the number of deaths'.
Circle either **For** or **Against**.

For / Against .....

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(2 marks)

1(b)(i) Any valid item either for or against statement from Figure 2 e.g. Sumatra – 9.1 was stronger than Kanto, Japan – 7.9 (1) and there were 96 000 more deaths (1)

1 mark for correct earthquakes and 1 mark for using evidence. **2 marks**

1(b) (ii)Suggest possible reasons why most deaths occurred in Tangshan, China, even though this earthquake measured 7.5 on the Richter scale.

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(2 marks)

1(b)(ii) Population density may have been very high (1) and therefore more people were affected near the epicentre (1); the buildings may have been old and not earthquake proof (1); the foundations may not have been deep enough / poorly built / inappropriate building materials. (1) Lack of evacuation plans (1) poor medical facilities (1) **2 marks**
Either 2×1 or 1×(1+1).

1(c)Describe a method, other than the Richter Scale, of measuring earthquakes.

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(4 marks)

(Extra space) .....

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1(c) Mercalli Scale will form the basis of the answer.
There should be an understanding that this uses observed effects to determine the position on the scale. These may be described as text or as pictures. The scale goes up to XII. The score is given to match the level of impact. E.g. V will mean that everyone will feel the earthquake and dishes and windows will be broken. In contrast, a level XII will mean total destruction.

Level 1 (Basic) 1–2 marks
Simple, listed points.
An idea that it relates to different levels of damage done.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3–4 marks
Points are developed and linked.
The name of the method will be known.
Examples of the types of damage will be linked to the increasing score.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors. **4 marks**

1(d)Describe the immediate and long-term responses to an earthquake that you have studied in a poor part of the world.

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(6 marks)

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1(d) Actual content will depend on the case study being used.
Immediate – there will be reference to the need to rescue people – may be done by relatives and basic equipment or just by hand initially, a need to put out fires, to provide medical help, to ensure there is clean water (and food). All of this may require international aid and teams of sniffer dogs, heavy equipment, medical staff, provision of water purifying tablets, blankets, setting up shelters, tents etc.

Long-term – this will involve the need to rebuild houses – using different materials and designs – to make them earthquake proof; to provide the means to be able to do this and to rebuild public buildings; attempts to give advice regarding what to do in an earthquake; to ensure jobs are being created; to help people to come to terms with a traumatic event and loss of parents, children.

Level 1 (Basic) 1–4 marks
Describes responses to an earthquake in a poorer part of the world.
Statements are general in a random order.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 5–6 marks
Immediate and long-term responses are distinguished.
Statements are linked.
There is clear reference to the case study named.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate

6 marks

Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Water on the Land

Specimen papers and Mark schemes

Higher Tier

5Water on the Land **Total for this question: 25 marks**

5 (a) Study **Figure 13**, on the insert, a 1:50 000 Ordnance Survey map extract of Boscastle.

5 (a) (i) A 'waterfall' is found at **Y**. Give the map evidence for this landform, apart from the label.

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(2 marks)

5(a)(i) Symbol for steep slope / cliff present; contours close together; 100m contour down to 60m clear, but then sequence stops.

2 marks

2 x 1

5(a) (ii)Grid squares 1290 and 1291 are outlined on **Figure 13**.

Describe the valley of the River Valency in these grid squares.

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(2 marks)

5(a)(ii) Valley floor is very narrow (1). Sides are steeply sloping (1). V–shaped (1). Allow for detailed observations e.g. valley widens at Trafalgar. **2 marks**

3 x 1/ 1 +(1 + 1)

5(b)Describe and explain the formation of ox-bow lakes.

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(6 marks)

(Extra space) .....

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5(b) Reference to river beginning to meander. Fastest flow being towards developing outside bend and slower water on inside bend. Fastest flow on outside bend results in erosion on this side of the channel and slower water on inside bend causes deposition. This causes the meander to shift (migrate) and two outside bends get closer together as processes continue creating a small area of land separating the neck of meander. This is broken through, often in flood. River follows shortest course, leaving an ox bow lake without a water supply. Deposition completes separation over time.

Level 1 (Basic) 1–4 marks
Simple, listed points.
Order not correct – jumps about.

Sequence may be incomplete.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 5–6 marks
Points are developed and linked.
Appropriate terminology is used.
Sequence and formation of ox-bow lake is clear.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors. **6 marks**

5(c)Study **Figure 13**, the Ordnance Survey map extract of Boscastle.

5 (c) (i) Boscastle experienced a flash flood on 16 August 2004. Using **Figure 13**, describe how each of the following contributed to the flooding.

The tributary joining the River Valency at grid reference (099913).

The settlement of Boscastle in grid square 0990.

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(4 marks)

(Extra space)

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5(c)(i) The water from two drainage basins meets here (1) so the extra

input added to water already present in Valency. (1)
Boscastle is a built up area / area covered with buildings / tarmac / concrete (1) so land surface is impermeable and runs off quickly / drains put into take water away, so gets to river even faster than it would do naturally. (1)
(Part is common with F Tier so included F Tier mark scheme, but also levels as H Tier has 3 levelled questions)

Level 1 (Basic) 1–2 marks
Simple, listed points.
Describes what is visible on the map
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3–4 marks
Points are developed.
Makes the link between feature and impact of flood risk
2 x 1 + 1
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors. **4 marks**

5(c) (ii)Study **Figure 14** on the insert, which shows part of Boscastle on 17 August 2004. **Figure 15** is a black and white photocopy of **Figure 14.**

Label **Figure 15** to describe the different effects of flooding on Boscastle.

(3 marks)

5(c)(ii) Any valid effect – each label must focus on a different aspect. Labels must point to relevant feature and describe exactly what can be seen. **3 marks**
3 x 1

Figure 15

5(d)Describe the advantages and disadvantages of 'soft engineering' as a means of controlling flooding.

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(8 marks)

5(d) Actual content will depend on soft engineering methods selected. Likely to refer to flood warnings, preparation, flood plain zoning, 'do nothing' options.
Will need to show an awareness of what these are e.g. the different levels of flood warning available, the restriction of certain land uses on parts of the flood plain etc. However, need to make clear what advantages and disadvantages of these methods e.g. For warnings that people have time to move possessions upstairs, get sandbags to front in time, evacuate. However, the threat remains and people are likely to be worried by it, suffer stress, have to claim for possessions / struggle to get insurance; for flood plain zoning that restricting building means that impermeable surfaces are not being created, so flood risk is not being increased and houses are not flooding. However, limiting building may limit expansion / jobs if there are no other suitable sites.

Level 1 (Basic) 1–4 marks
Describes 1 or 2 soft engineering methods.
Statements may be in a random order.
Knowledge of basic information
Simple understanding

Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 5–6 marks
Begins to consider advantages or disadvantages.
Refers to two methods, but may be imbalance.
Statements are linked.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

Level 3 (Detailed) 7–8 marks
Advantages and disadvantages are both considered.
Statements are linked and detailed.
Refers to two methods – balance between them
Greater balance between components.
Knowledge of accurate information appropriately contextualised and/or at correct scale
Detailed understanding, supported by relevant evidence and exemplars
Well organised, demonstrating detailed linkages and the inter-relationships between factors
Range of ideas in a logical form; uses a range of specialist terms where appropriate
Well structured response with effective use of sentences. Few spelling, punctuation and grammatical errors. **8 marks**
Level 3 does not always equate to full marks, a perfect answer is not usually expected, even for full marks.

Foundation Tier

5Water on the Land **Total for this question: 25 marks**

5 (a) Study **Figure 12**, on the insert, a 1:50 000 Ordnance Survey map extract of Boscastle.

5 (a) (i) What happens at **X** along the course of the River Valency?

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(1 mark)

5(a)(i) Confluence; tributary / small river joins **1 mark**

5(a) (ii)A 'waterfall' is found at **Y**. Give the map evidence for this landform, apart from the label.

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(2 marks)

5(a)(ii) Symbol for steep slope / cliff present; contours close together;
100m contour down to 60m clear, but then sequence stops.
2×1 **2 marks**

5(a) (iii)Grid squares 1290 and 1291 are outlined on **Figure 12**.
Describe the channel and the valley of the River Valency in these grid squares.

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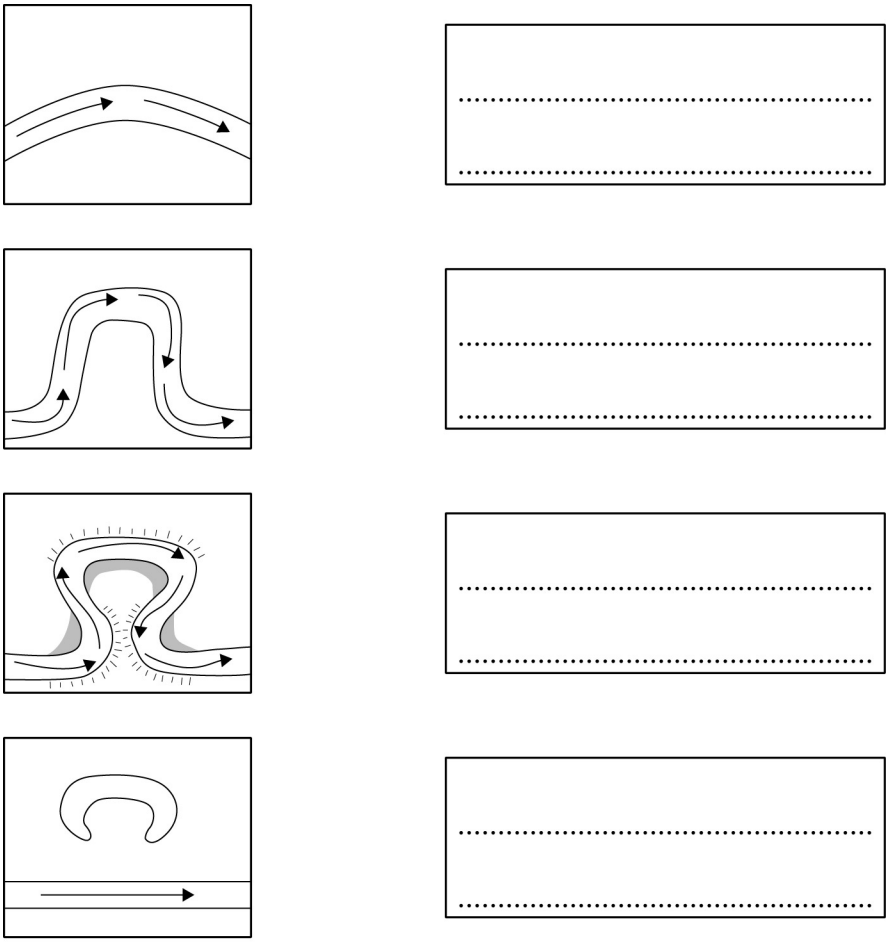
(3 marks)

5(a)(iii) Channel is narrow (1) and winding (1). Valley floor is very narrow (1). Sides are steeply sloping (1). V-shaped (1). Asymmetrical cross profile (1) Slopes (1). Allow for detailed observations, e.g. valley widens at Trafalgar.
3×1 / 1+(1+1) **3 marks**

5(b)**Figure 13** shows the stages in the formation of a river landform in its lower course.

Add a sentence in each box to explain the formation of the landform.

Figure 13



5(b) Any valid label that fits the diagram and shows the sequence in the development of an ox-bow lake.
First diagram – reference to river beginning to meander / fastest flow being towards developing outside bend.
Second diagram – fastest flow on outside bend / results in erosion on this side of the channel and slower water on inside bend causes deposition. Third diagram – points for diagram 2 are valid if not previously made. Also, meander shifts and two outside bends get closer together as processes continue.
Fourth diagram – Neck of meander is broken through, often in flood. River follows shortest course, leaving ox-bow lake without water. Deposition completes separation over time.

Level 1 (Basic) 1–2 marks
Simple, listed points.
Order not correct – jumps about.
Sequence may be incomplete.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 3-4 marks
Points are developed and linked.
Sequence and formation of ox-bow lake is clear.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors. **4 marks**

5(c)Study **Figure 12**, the Ordnance Survey map extract of Boscastle.

5 (c) (i) Boscastle experienced a flash flood on 16 August 2004.

Give the meaning of the term 'flash flood'.

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(2 marks)

5(c)(i) Flood occurs when a river bursts its banks (1) for this idea.
Flash flooding occurs without warning / rapid response of channel to rain (1) for this aspect.

2×1 **2 marks**

5(c) (ii)Using **Figure 12**, the Ordnance Survey map of Boscastle, describe how each of the following contributed to the flooding.

The relief (height and shape of the land) in the Valency valley in grid square (1091).

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The settlement of Boscastle in grid square (0990).

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(4 marks)

5(c)(ii) Relief is steep (1) so runoff will be rapid over the surface (1). Boscastle is a built-up area/area covered with buildings / tarmac / concrete (1) so land surface is impermeable and runs off quickly / drains put in to take water away, so gets to river even faster than it would do naturally (1). **4 marks**

2×1+1

5(c) (iii)Study **Figure 14**, on the insert, which shows part of Boscastle on 17 August 2004.
Three effects of flooding are arrowed and marked **X**, **Y** and **Z** on **Figure 14**.

Write labels for **X**, **Y** and **Z** to describe the effects of flooding in Boscastle.

X .....

Y .....

Z .....

(3 marks)

5(c)(iii) **X** – trees and debris piled up behind bridge.
Y – building has partly collapsed.
Z – road damaged.
3×1 **3 marks**

5(d)Describe how hard engineering methods are used to control flooding.

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(6 marks)

(Extra space) .....

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5(d) Actual content will depend on hard engineering methods selected.
Likely to refer to dams and reservoirs, straightening of rivers.
For dams and reservoirs, there should be recognition that this involves constructing a barrier behind which a lake is created. This will store water, especially during time of heavy rain and then water can be released during drier periods.
Straightening involves redirecting the river's flow, by cutting out meanders and creating a more direct course. This means that the water is taken out of the area more quickly as it does not have to travel so far.

Level 1 (Basic) 1–4 marks
Describes 1 or 2 hard engineering methods.
Statements may be in a random order.
Knowledge of basic information
Simple understanding
Few links; limited detail; uses a limited range of specialist terms
Limited evidence of sentence structure. Frequent spelling, punctuation and grammatical errors.

Level 2 (Clear) 5–6 marks
The description is followed by how the method controls flooding.
Refers to more than one method, but may be imbalance.
Statements are linked.
Knowledge of accurate information
Clear understanding
Answers have some linkages; occasional detail/exemplar; uses some specialist terms where appropriate
Clear evidence of sentence structure. Some spelling, punctuation and grammatical errors.

6 marks