



General Certificate of Secondary Education
2018

Centre Number

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Candidate Number

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Geography

Unit 1

Understanding Our
Natural World

MV18

[GGY11]

TUESDAY 22 MAY, AFTERNOON

Time

1 hour 30 minutes, plus your additional time allowance.

Instructions to Candidates

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write on blank pages.

Complete in black ink only.

Answer **all four** questions.

You are provided with an O.S. map for use with **Questions 1 and 2.**

Do **not** write your answers on this map.

Information for Candidates

The total mark for this paper is 100.

Figures in brackets printed at the end of each question indicate the marks awarded to each question or part question.

Quality of written communication will be assessed in questions **1(e), 2(d)(ii) and 3(e).**

Theme A: River Environments

- 1 (a) Study the Ordnance Survey extract of part of the coast of Cornwall, England and answer the question which follows. Complete **Table 1** by naming a river feature found at the grid references given. [2 marks]

Table 1

Grid Reference	River Feature
GR 2092	
GR 0888	

- (b) A drainage basin has inputs, stores, transfers and outputs. Complete **Table 2** by drawing arrows to show which components of a drainage basin are stores and which are transfers. One has been completed for you. [4 marks]

Table 2

Stores	Drainage Basin Component	Transfers
	Surface runoff	
	Infiltration	
	Interception by vegetation	
	Groundwater flow 	
	Percolation	

(c) Study **Fig. 1** opposite which presents data collected by geography students on a field trip at three different sites on a river. Answer the question which follows.

Site Number	Location	Discharge (cumecs)
1	Close to source	0.06
2	Middle course	1.10
3	Near the mouth	3.95

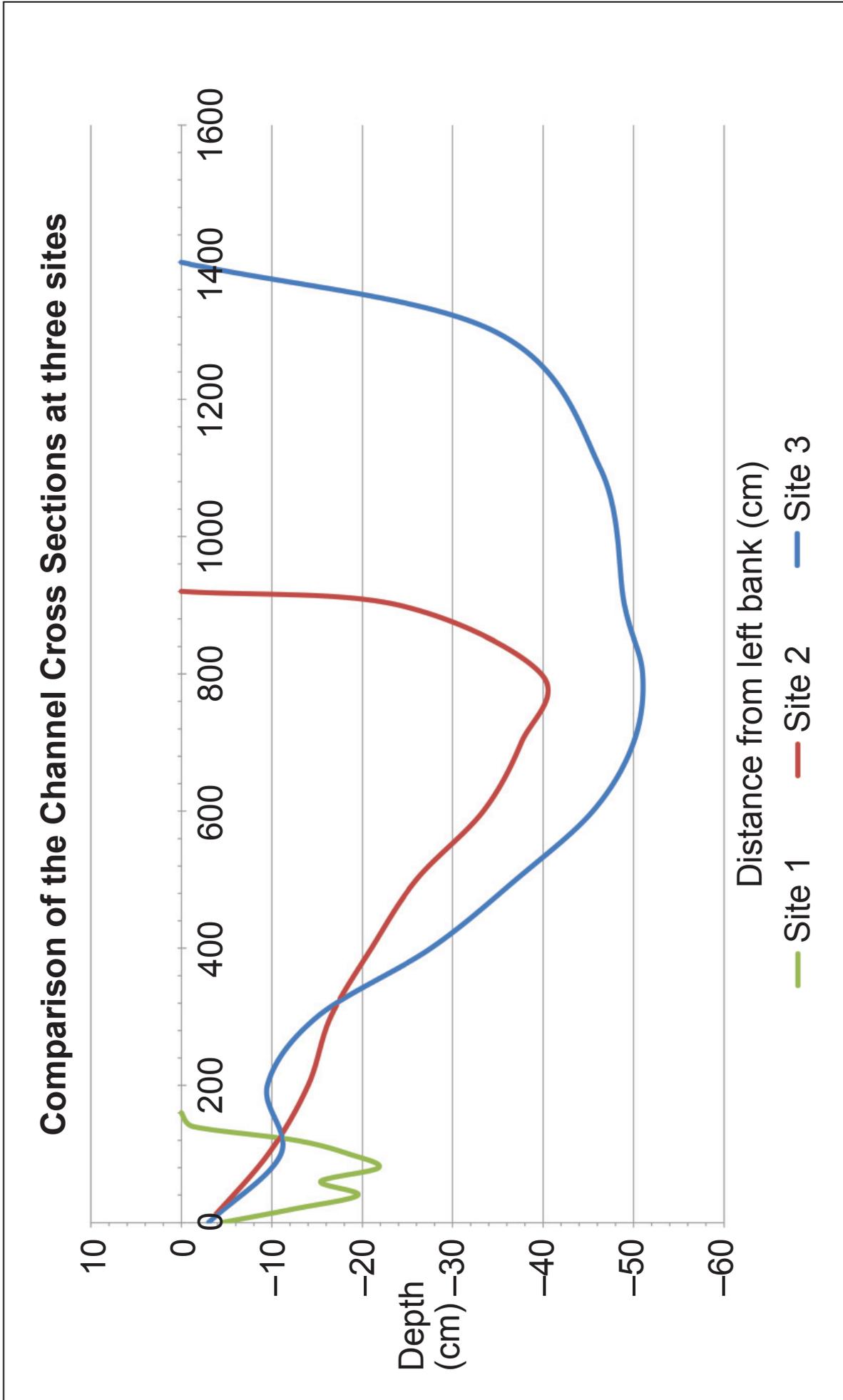


Fig. 1

Theme B: Coastal Environments

2 (a) Study the Ordnance Survey extract of part of the coast of Cornwall, England and answer the questions which follow.

(i) State the height of the land shown by the spot height at the top of Rusey Cliff, GR 128935. [1 mark]

_____ m

(ii) State the straight line distance from the campsite near Ringford Farm GR 126926 to the bridge on the River Ottery at Trengune GR 189933. [2 marks]

_____ km

(iii) State the direction of Pencannow Point GR 1397 from Boscastle GR 0990. [1 mark]

(iv) Coasts are shaped by waves. State **two** facts about destructive waves. [2 marks]

1. _____

2. _____

(b) Study **Fig. 2**, which shows Durdle Door, an arch located in Cornwall. Answer the questions which follow.



Fig. 2

- (i) Complete **Table 3** below by placing the statements in order to show how the arch shown in **Fig. 2** was formed. One has been completed for you.
[3 marks]

Table 3

Statement	Order
Cracks in the rock are widened by wave action to form a cave	
A line of weakness in a cliff is widened by erosion	1
Eventually the cave will be eroded all the way through the cliff to form an arch	
Over time the back wall is further eroded	

- (ii) Name the feature which will be formed when the roof of the arch collapses. [1 mark]
-

(c) **Fig. 3** is a photograph of a wave cut platform.



Fig. 3

(d) Coasts often need protection against erosion.

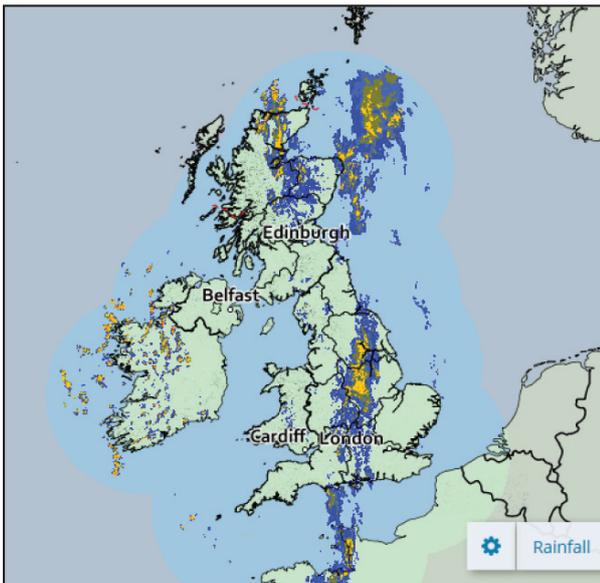
(i) State **two** reasons why a stretch of coastline may need to be protected against erosion by the sea.
[2 marks]

1. _____

2. _____

Theme C: Our Changing Weather and Climate

- 3 (a) (i) A variety of sources are used when making a weather forecast. Name the sources of data illustrated in **Fig. 4** below. Write your answers in the boxes provided. [3 marks]



A:



B:



C:

Fig. 4

(ii) Distinguish between weather and climate.
[3 marks]

(b) Describe and explain the temperature and moisture characteristics of a Polar Maritime air mass.
[4 marks]

(c) Study **Fig. 5** which shows an anticyclone over the British Isles on a day in July.
Answer the questions which follow.

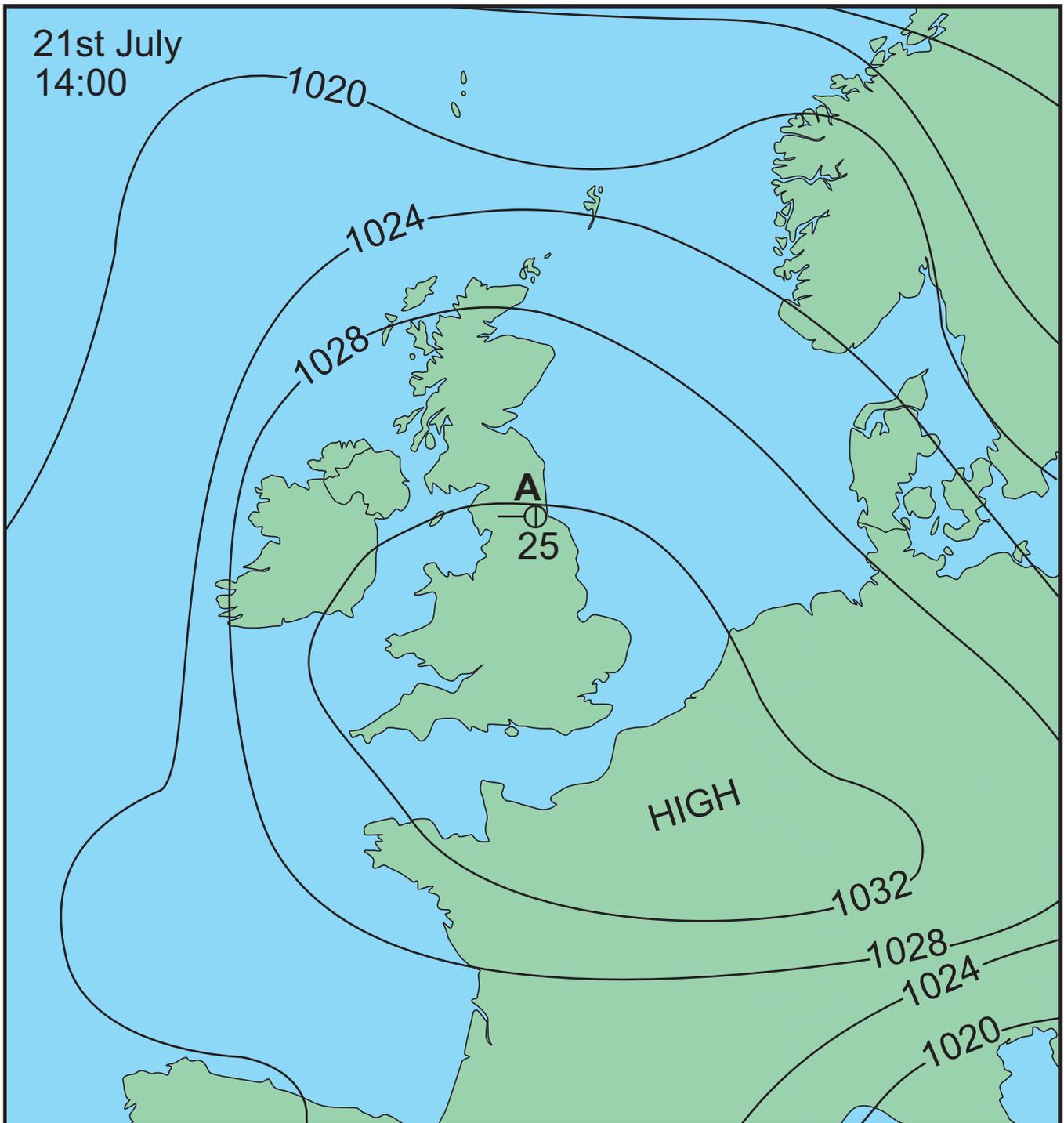


Fig. 5

Key

Cloud cover (oktas)

-  Clear sky
-  $\frac{1}{8}$ covered
-  $\frac{2}{8}$ covered
-  $\frac{3}{8}$ covered
-  $\frac{4}{8}$ covered
-  $\frac{5}{8}$ covered
-  $\frac{6}{8}$ covered
-  $\frac{7}{8}$ covered
-  $\frac{8}{8}$ covered
-  Sky obscured

Wind speed (knots)

-  Calm
-  1–2
-  3–7
-  8–12
-  13–17

Wind direction

Arrow showing direction wind is blowing from

Air pressure (millibars)

— 1020 — isobar

- (i) Complete **Table 4** to show the weather being experienced at weather station **A** (Newcastle upon Tyne) on **Fig. 5**. One has been completed for you. [2 marks]

Table 4

Weather Element	Weather conditions
Temperature	25 °C
Wind Speed	Knots
Wind Direction	

(ii) State fully **one** reason why the weather system in **Fig. 5** brings high temperatures. [3 marks]

(d) Study **Fig. 6** which illustrates how altitude can influence temperature. Answer the question which follows.

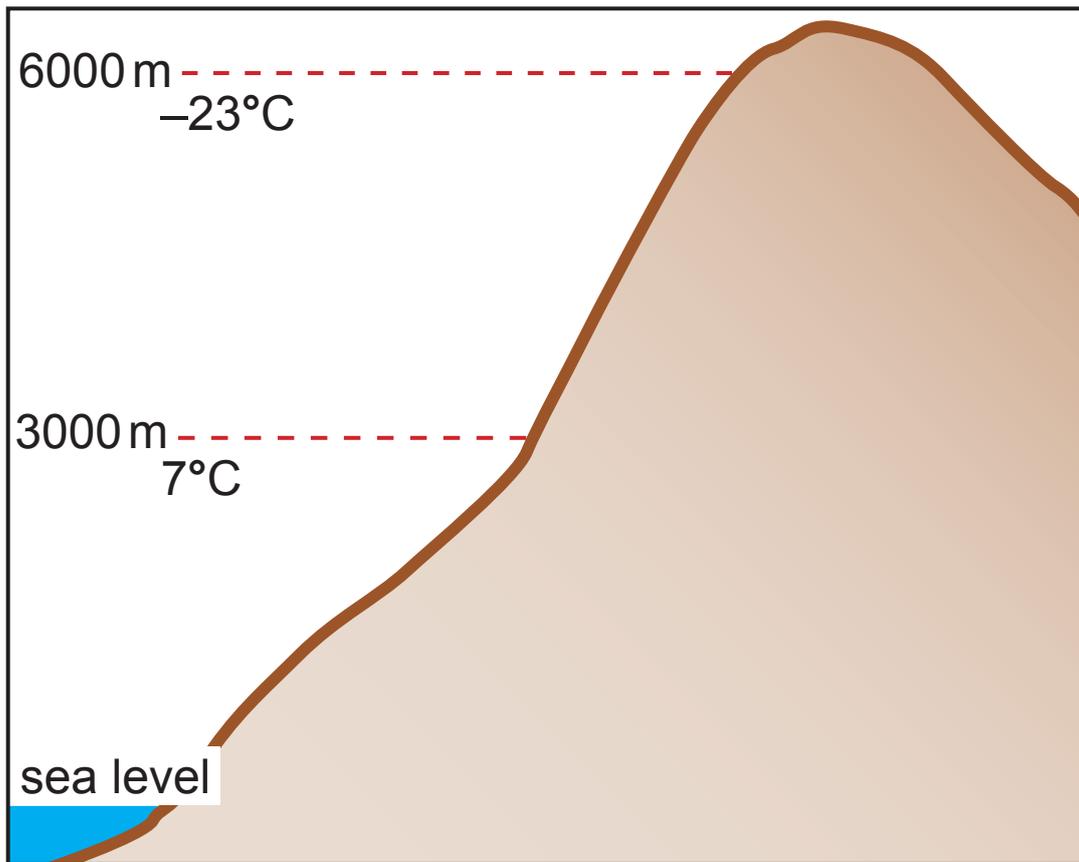


Fig. 6

Using **Fig. 6** describe how and explain why altitude influences temperature. [4 marks]

Theme D: The Restless Earth

- 4 (a) Study **Fig. 7** which shows the structure of the Earth. Answer the questions which follow.

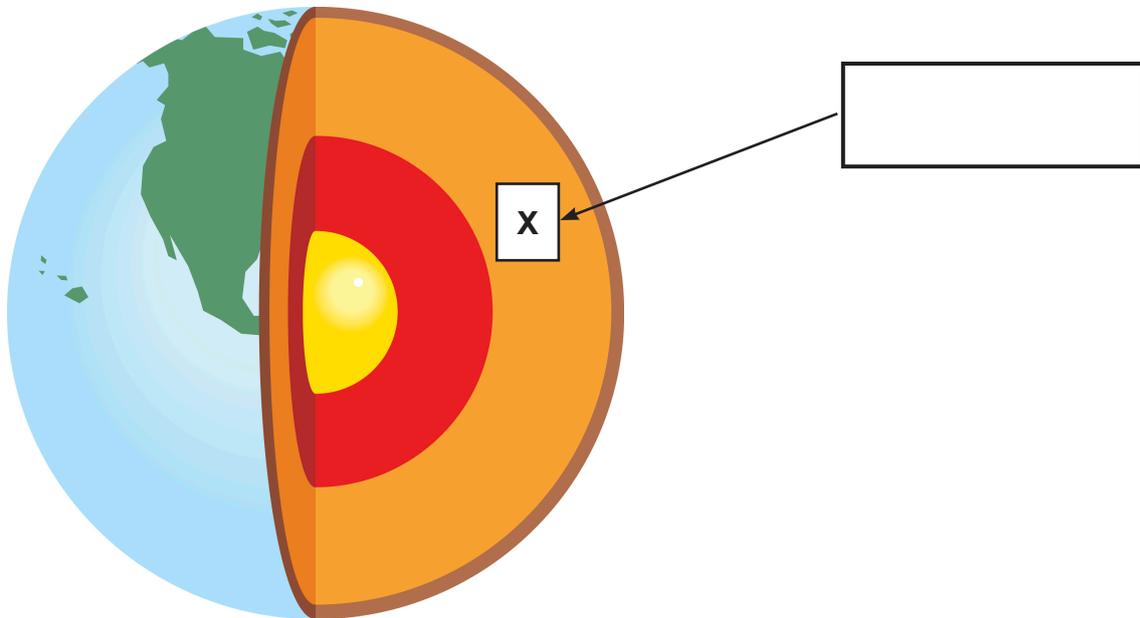


Fig. 7

- (i) Name the section of the Earth indicated by **X** on **Fig. 7**. [1 mark]

- (ii) Underline the correct word in the following statements relating to the structure of the Earth. One has been completed for you. [4 marks]

The Earth's surface is divided into tectonic plates / convection currents.

The crust is the **thickest** / **thinnest** layer of the Earth.

Convection currents / **plate margins** occur underground.

The **outer** / **inner** core is solid.

Fault lines are areas of **strength** / **weakness** in the Earth's crust.

(b) Study **Fig. 8** which shows the location of igneous rocks in Northern Ireland. Answer the questions which follow.

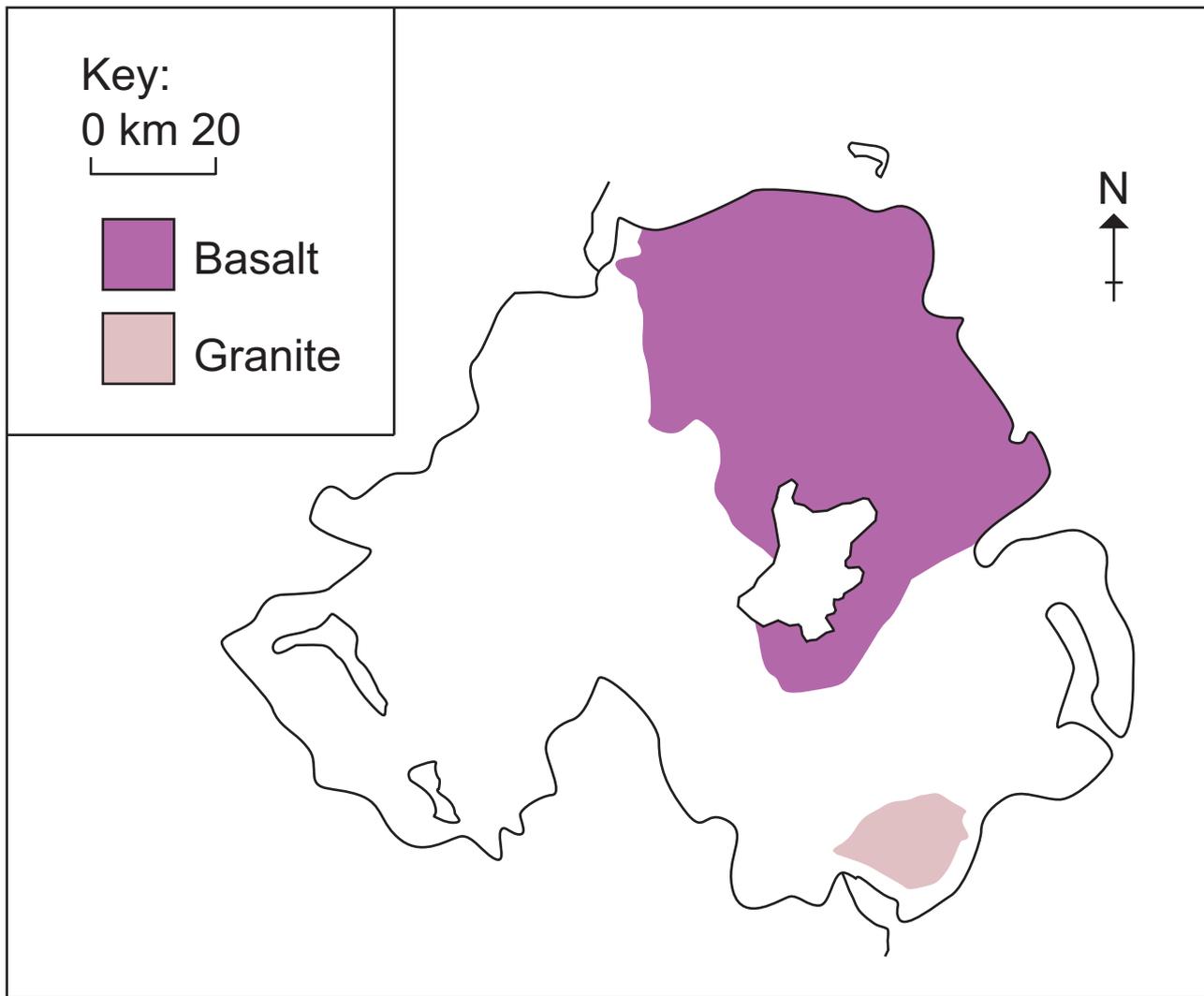


Fig. 8

(i) Describe the distribution of granite in **Fig. 8**.

[2 marks]

(ii) Explain how granite forms. [3 marks]

(c) Study **Fig. 9** which shows a diagram of a shield volcano. Answer the questions which follow.

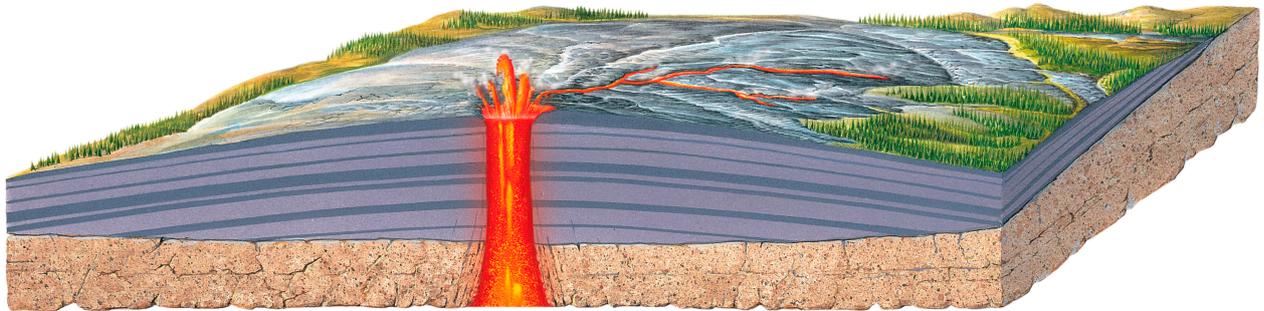


Fig. 9

(i) State **two** characteristics of a shield volcano. [2 marks]

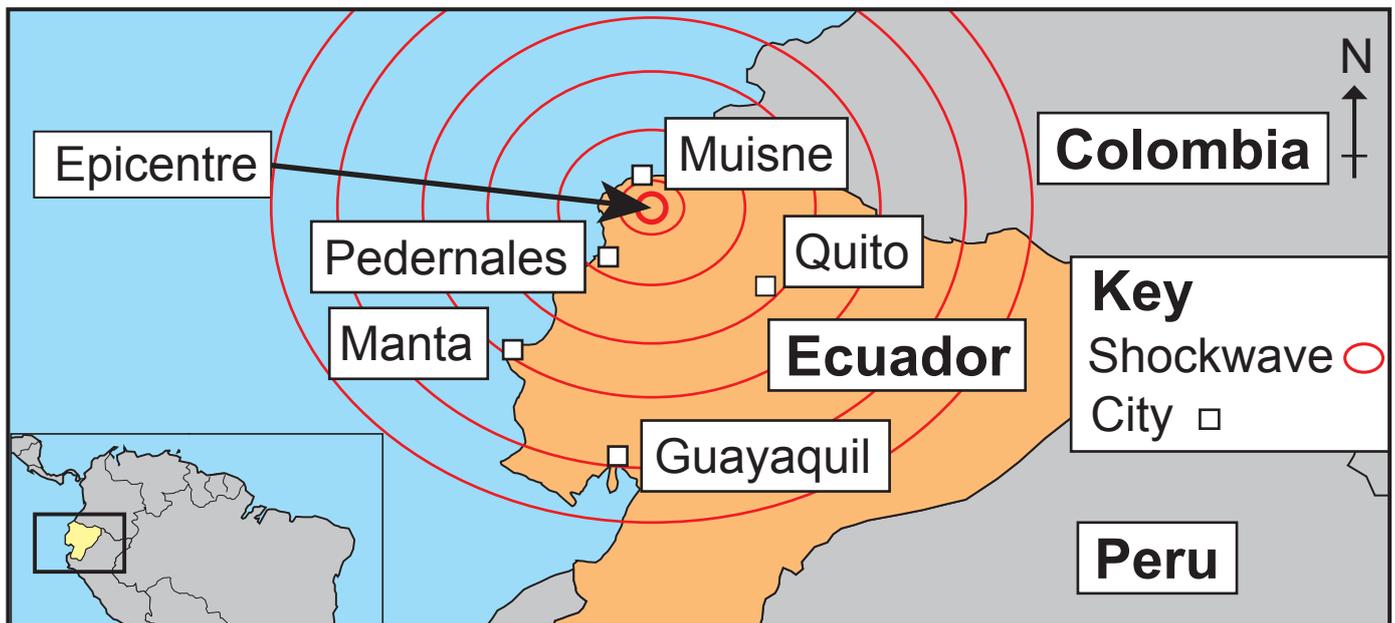
1. _____

2. _____

(ii) Name one other type of volcano. [1 mark]

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(Questions continue overleaf)

(d) Study **Fig. 10** which shows information about an earthquake in Ecuador in April 2016. Answer the questions which follow.



- Ecuador was hit by its most powerful earthquake in decades.
- The 7.8 earthquake struck on Saturday evening.
- During the rescue operation, 10,000 troops and 3,500 police were deployed.
- Coastal areas in the north-west were closest to the epicentre.

Fig. 10

(i) State the name of the city furthest away from the epicentre. [1 mark]

(ii) State the meaning of the term **epicentre**. [2 marks]

(iii) Ecuador lies on a destructive plate boundary.

Explain why earthquakes often occur at a destructive boundary. [3 marks]

THIS IS THE END OF THE QUESTION PAPER

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For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	

Total Marks	
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Examiner Number

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ROADS AND PATHS

Not necessarily rights of way

	Junction number		Elevated
	M1		Unfenced
	A 470		Dual carriageway
	A 493		Footbridge
	B 4518		Secondary road
	A 855		Narrow road with passing places
	B 885		Road generally more than 4m wide
	Bridge		Road generally less than 4m wide
	Path / Other road, drive or track		Gradient: steeper than 20% (1 in 5), 14% to 20% (1 in 7 to 1 in 5)
	Gates, Road tunnel		Ferry (passenger), Ferry (vehicle)

RAILWAYS

	Track multiple or single		Bridges, footbridge
	Track under construction		Level crossing
	Siding		Viaduct, embankment
	Tunnel, cuttings		Station, (a) principal
	Narrow gauge, tramway or light rail system		Light rail station

WATER FEATURES

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

HEIGHTS

1 metre = 3.2808 feet

Contours are at 10 metres vertical interval

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 natural summit.

PUBLIC RIGHTS OF WAY

	Footpath		Other route with public access (not normally shown in urban areas). Alignments are based on the best information available. These routes are not shown on maps of Scotland.
	Bridleway		On-road cycle route
	Restricted byway (not for use by mechanically propelled vehicles)		Traffic-free cycle route
	Byway open to all traffic		National Cycle Network number

The symbols show the defined route so far as the scale of mapping will allow.

The representation on this map of any other road, track or path is no evidence of the existence of a right of way. Not shown on maps of Scotland

Danger Area Firing and Test Ranges in the area. Danger! Observe warning notices.

BOUNDARIES

	National		Site of antiquity
	District		Site of Battle (with date)
	County, Unitary Authority, Metropolitan District or London Borough		Visible earthwork
	National Park		Roman
			Non-Roman

TOURIST INFORMATION

	Camp site / caravan site		Golf course or links
	Garden/aboretum		Information centre (all year / seasonal)
	Nature reserve		Parking, Park and ride (all year / seasonal)
	Picnic site		Recreation / leisure / sports centre
	Selected places of tourist interest		Phone, public / emergency
	Viewpoint		Visitor centre
	Walks / Trails		World Heritage site or area
	Youth hostel		

LAND FEATURES

	Electricity transmission line (pylons shown at standard spacing)		Ruin
	Pipe line (arrow indicates direction of flow)		Buildings
	Important building (selected)		Bus or coach station
	Current or former place of worship (with tower, with spire, minaret or dome)		Place of worship
	Glass structure		Helicopter
	Mast		Triangulation pillar
	Wind pump		Mast
	Wind turbine		Windmill with or without sails
	Graticule intersection at 5' intervals		Cutting, embankment
	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 / limited access, observe local signs)
	Natural Resources Wales		National Trust for Scotland (always open / limited access, observe local signs)

ABBREVIATIONS

Br	Bridge	MS	Milestone
Cemy	Cemetery	Mus	Museum
CG	Cattle grid	P	Post office
CH	Clubhouse	PC	Public convenience (in rural areas)
Fm	Farm	PH	Public house
Hospl	Hospital	Sch	School
Ho	House	TH	Town Hall, Guildhall or equivalent
MP	Milepost	Univ	University

