

Surname	Centre Number	Candidate Number
First name(s)		0

**GCSE****C112U10-1**

S23-C112U10-1

**MONDAY, 22 MAY 2023 – AFTERNOON****GEOGRAPHY B – Component 1****Investigating Geographical Issues**

1 hour 45 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	32	
SPaG	4	
2	32	
3	32	
Total	100	

**ADDITIONAL MATERIALS**

Resource Folder.

In addition to this paper you may use a calculator and a ruler if required.

**INSTRUCTIONS TO CANDIDATES**

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet.

Additional space is provided for some questions within the booklet (if required). If further space is required for any question, you should use the additional page(s) at the end of this booklet. The question number(s) should be clearly shown.

**INFORMATION FOR CANDIDATES**

The number of marks is given in brackets [ ] at the end of each question or part-question.

You are reminded that assessment will take into account your ability to spell, punctuate and use grammar and specialist terminology accurately in your answer to Question 1(e).



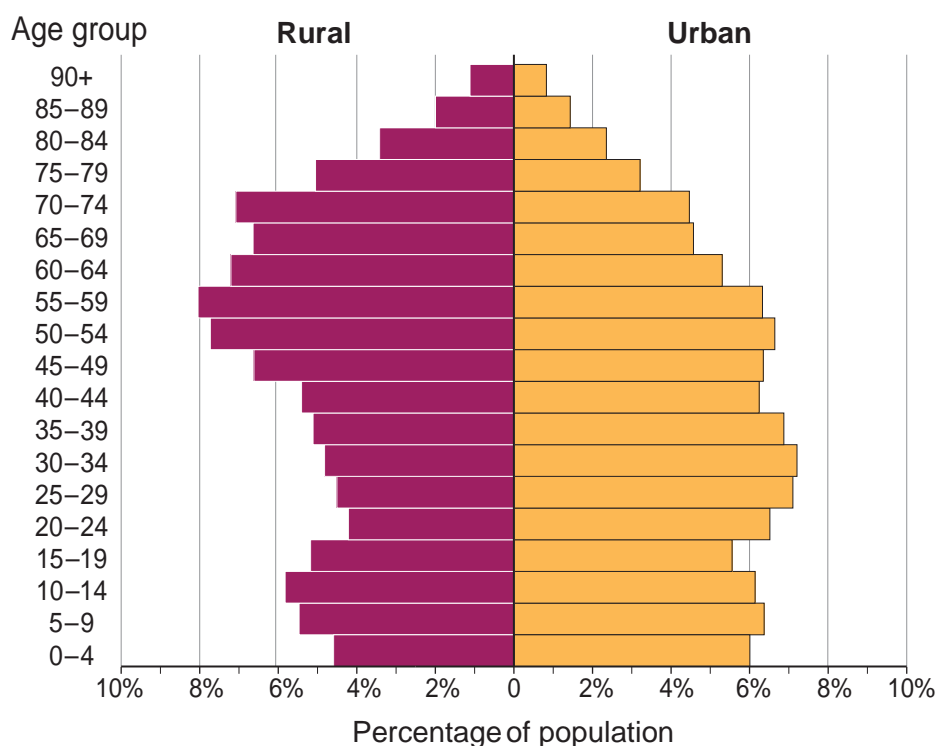
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### Theme 1: Changing Places – Changing Economies

Answer **all** questions.

1. (a) Study **Figure 1.1**.

**Figure 1.1 – Percentage of rural and urban populations in England in 2020**



(i) Tick (✓) the **two** correct statements about rural and urban populations in 2020. [2]

	Tick (✓)
Rural areas have a higher percentage of people aged 0–4 than urban areas	
Rural areas have a higher percentage of people aged 80+ than urban areas	
Rural areas have a larger percentage of people aged 40–44 than urban areas	
In rural areas the largest age group is 55–59 years old whereas in urban areas it is 20–24 years old	
The smallest age group is 90+ in both rural and urban areas	
The percentage of people aged 30–34 is the same for both urban and rural areas	



- (ii) Complete the sentences using words from the text box below. [2]

counter-urbanisation	renewal	brownfield
greenfield	depopulation	suburbanisation

In some rural areas, people have left to live in towns and cities. This process is called ..... In some rural areas, open spaces have been used to build new houses. These are called ..... sites.

- (b) (i) State **two** ways in which leisure use benefits rural areas. [2]

Way 1: .....

.....

Way 2: .....

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- (ii) Describe how leisure use has been managed in an area in the UK you have studied. [4]

Name of UK area studied: .....

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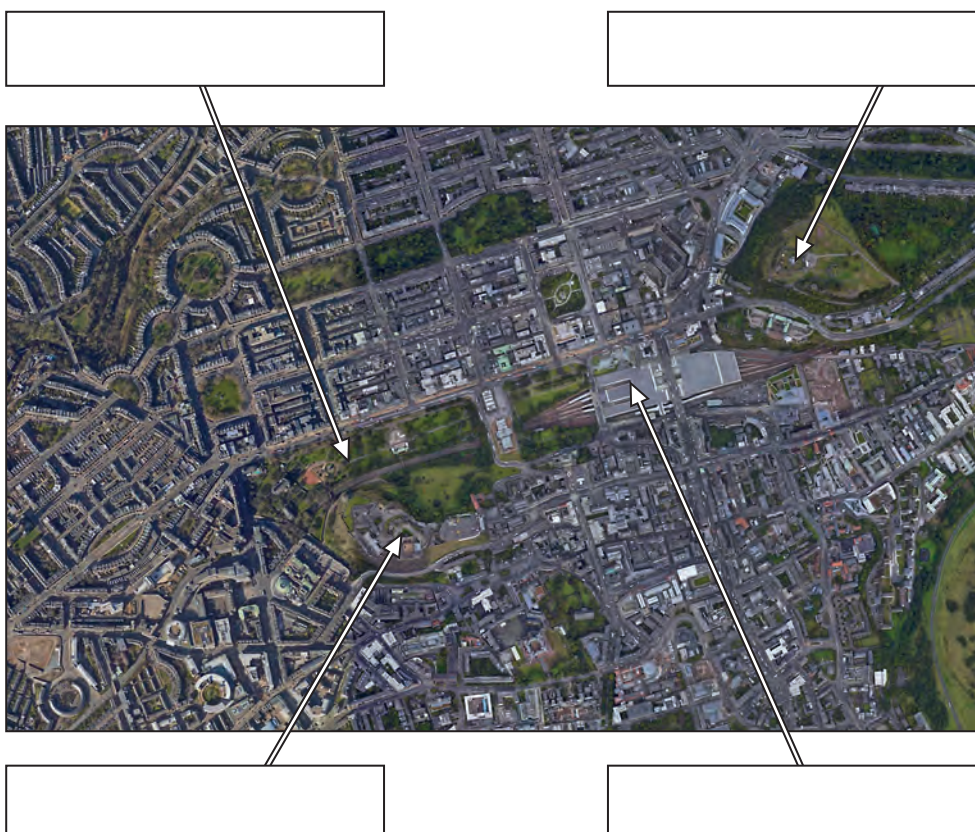
- (ii) Study **Figure 1.2** below and the **OS Map** in the **Resource Folder**.  
Use the **OS Map** to name the features shown on **Figure 1.2**.

[4]

Choose from the following list of features.

Bus station	Calton Hill	Princes Street Gardens	Queen Street Gardens
Law courts	Castle	Waverley Station	Cathedral

**Figure 1.2 – Central Edinburgh**



- (iii) Area X on the **OS Map** in the **Resource Folder** is the site of the new St James Quarter Development. [1]

Give the 4-figure grid reference for Area X: .....

- (iv) Give **one** reason why technology has changed the way people shop. [2]

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- (e) The St James Quarter Development includes shops, restaurants, cafes and leisure facilities. It opened in June 2021 and replaces a 1960's shopping centre and office block.

Study **Figure 1.3**.

**Figure 1.3 – Information about St James Quarter Development, Edinburgh**

#### Fact Box

- Cost £1.6 billion
- Is at the eastern end of Princes Street which is a main shopping area
- Car parking for 1600 cars, 70 disabled bays, bicycle racks and electric vehicle charging points
- 244-bedroom luxury hotel planned
- 152 apartments to be built, some costing over £1 million

#### Existing shops on Princes Street, Edinburgh



#### Inside the new shopping centre



#### St James Quarter Development





[4]



Additional space for Question 1(e) only:

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**End of Question 1**



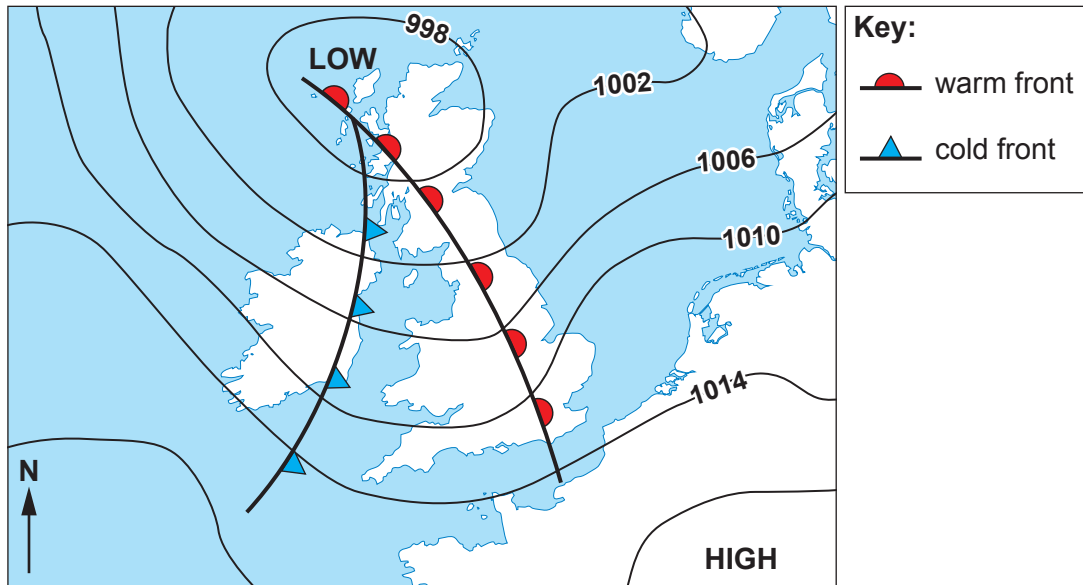


## Theme 2: Changing Environments

Answer **all** questions.

2. (a) Study **Figure 2.1**.

**Figure 2.1 – Weather map of an area of low pressure (depression) over the British Isles**



(i) Complete the table below by **circling** the correct term in each box.

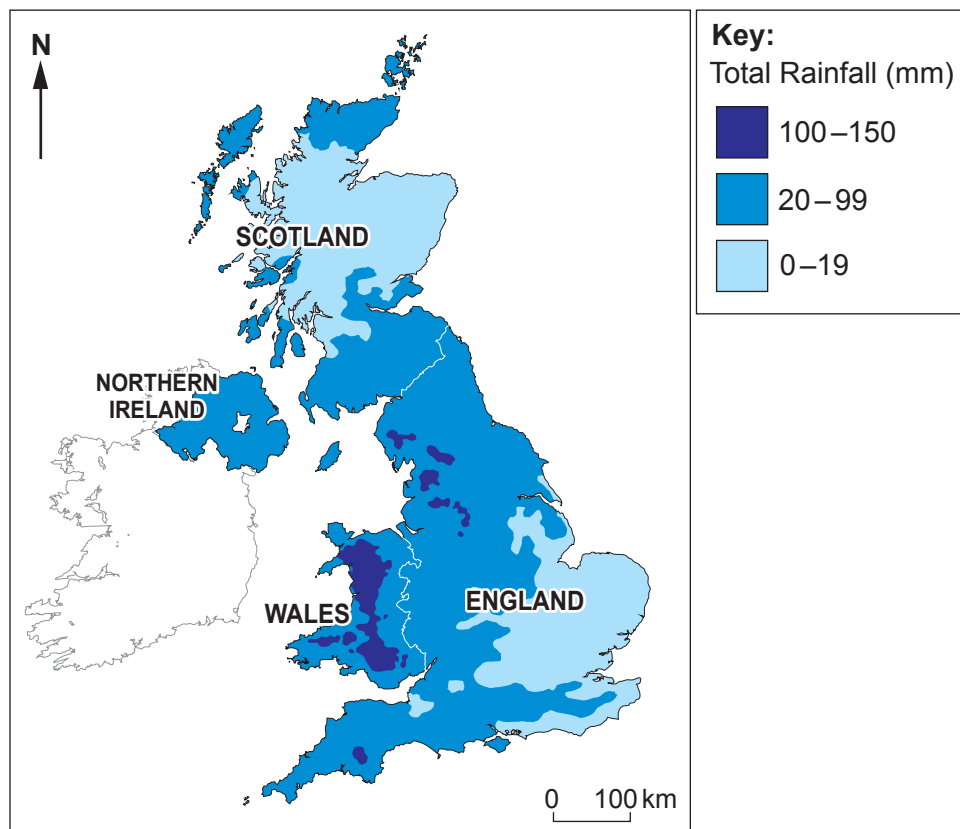
[4]

Features of a typical depression	<b>Circle</b> the correct term
Where are winds strongest?	warm front / warm sector / cold front
Where is air warmest?	warm front / warm sector / cold front
Where does heaviest rain occur?	warm front / warm sector / cold front
Where is rainfall the lowest?	warm front / warm sector / cold front



Storm Christoph affected the UK in January 2021. Study **Figure 2.2**.

**Figure 2.2 – Map showing total rainfall (mm), 18–20 January 2021**



(ii) Describe the pattern of rainfall shown. Use figures in your answer.

[3]

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Study **Figure 2.3**.

**Figure 2.3 – Rainfall totals from Storm Christoph for some UK places**

Place	Rainfall total, 18–20 January 2021(mm)	Typical January rainfall (mm)	% typical January rainfall from Storm Christoph
Derwent Bridge, County Durham	86.6	75.3	115
Sale, Greater Manchester	76.6	77.2	
Nantwich, Cheshire	59.2	61.9	96
Denton, Greater Manchester	78.2	82.8	94
Myerscough, Lancashire	87.0	96.8	90
Rochdale, Greater Manchester	98.6	112.2	88
Ruthin, Clwyd (Wales)	65.6	75.1	87
Westerdale, North Yorkshire	66.4	77.1	86

- (iii) Calculate the percentage (%) of typical January rainfall recorded at **Sale, Greater Manchester** during Storm Christoph. Show your working in the box below. [2]

Answer: ..... %

- (iv) Select an appropriate technique from the table below to show the rainfall total **and** typical January rainfall in **Figure 2.3**. [1]

Technique	Tick (✓)
Two line graphs – one for rainfall and one for typical January rainfall	
Pie charts for each location	
A scatter graph with a line of best fit	
A bar chart with two bars for each location	



(v) Explain why your chosen technique is the most appropriate. [2]

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(vi) Storm Christoph caused widespread flooding in the UK. Give **one** reason why heavy rainfall causes flash flooding. [2]

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(b) (i) Areas of high pressure (anticyclones) bring different weather conditions to the UK. Complete the sentences below by adding the correct words from the box. [4]

heats quickly	heavy rain	unstable	clockwise	dry
cools quickly	frost	anti-clockwise	wet	quickly

Air moves ..... during an anticyclone in the UK. In summer, the weather during an anticyclone is usually .....

At night in winter, the ground ..... and there may be .....



- (ii) Choose an extreme high pressure weather event **outside the UK** you have studied. Explain the impacts on different groups of people. [6]

Location of event studied: .....

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Additional space for Question 2(b)(ii) only:

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- (c) Physical processes create distinctive river landscapes in the UK. Study **Figure 2.4**.

**Figure 2.4 – Some distinctive river landscapes**

**Meander**



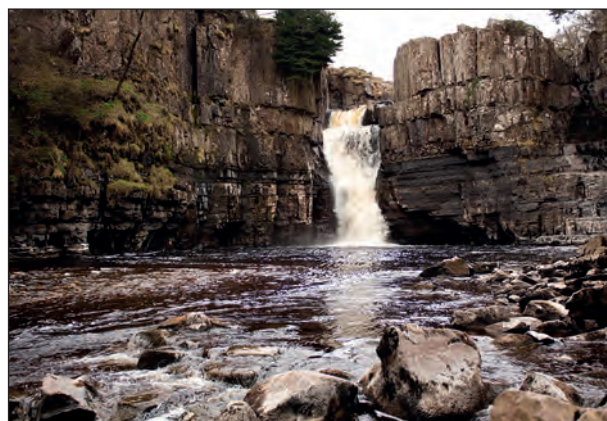
**Estuary**



**V-shaped valley**



**Waterfall**



Erosion is the most important **physical** process in the formation of distinctive river landscapes in the UK, such as those shown in **Figure 2.4**. How far do you agree? [8]

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**Theme 3: Environmental Challenges**Answer **all** questions.

3. (a) (i) Many hot semi-arid areas suffer from desertification. Choose the correct terms from the box below to complete some definitions linked to desertification. [4]

microclimate	transpiration	interception	evaporation
evapotranspiration	precipitation	macroclimate	desiccation

..... is the process where water changes from liquid to vapour.

..... is the process where water is trapped by plants.

..... is the process where water is lost to the atmosphere from the surface and from plants.

..... is the pattern of temperature and rainfall affecting a small area.

- (ii) Describe **two** ways human activity damages hot semi-arid areas. [4]

1. ....

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 .....  
 .....

2. ....

.....  
 .....  
 .....



- (iii) Work to reduce desertification is often done through Non-Government Organisations (NGOs). Explain **one advantage** and **one disadvantage** of this for the local community. [4]

Advantage: .....

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Disadvantage: .....

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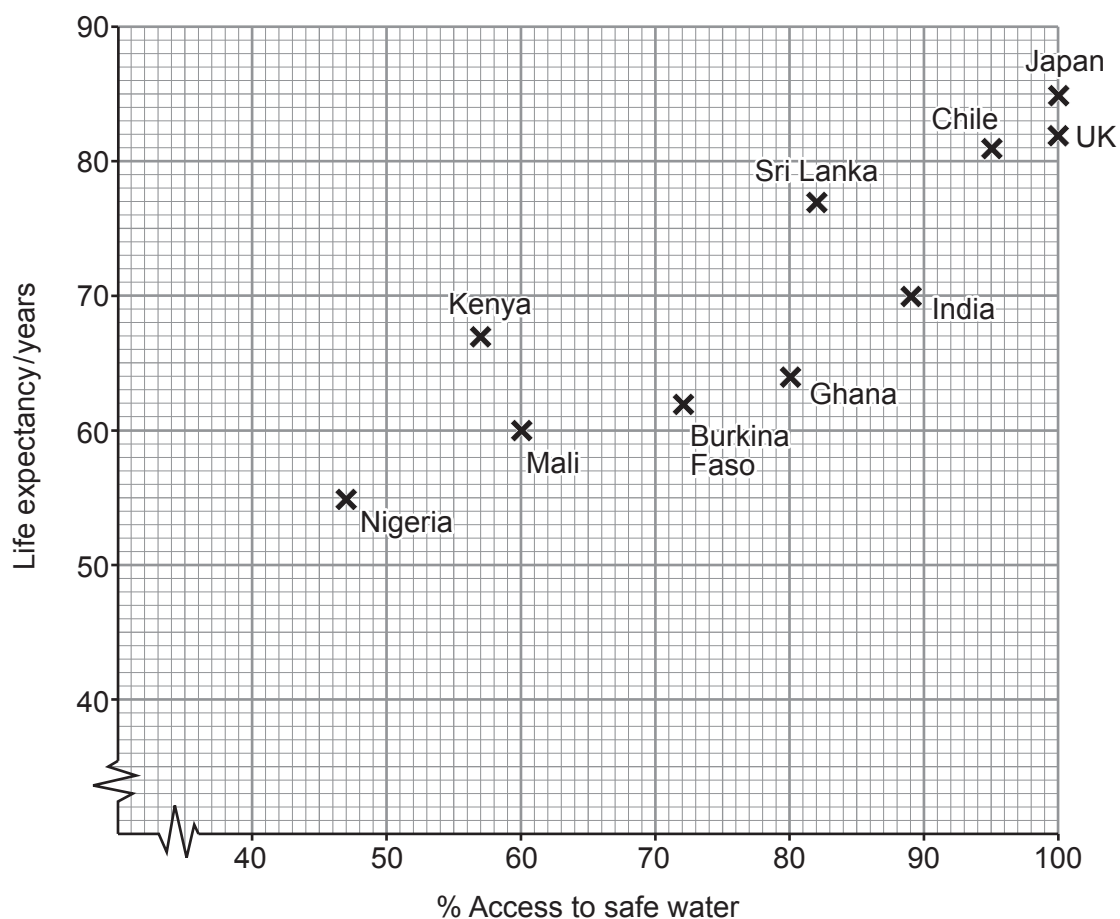
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(b) Study **Figure 3.1**.

**Figure 3.1 – Scatter graph showing life expectancy and people's access to safe water for some countries**



- (i) Draw the line of best fit onto **Figure 3.1** to show the relationship between the two variables. [2]
- (ii) Give **one conclusion** about the relationship between life expectancy and access to safe water shown in **Figure 3.1**. [1]

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(iii) Explain why a lack of water security has a negative **economic** impact.

[4]

Examiner  
only

(c) Study **Figure 3.2**.

**Figure 3.2 – Location of Lake Mead in the USA**



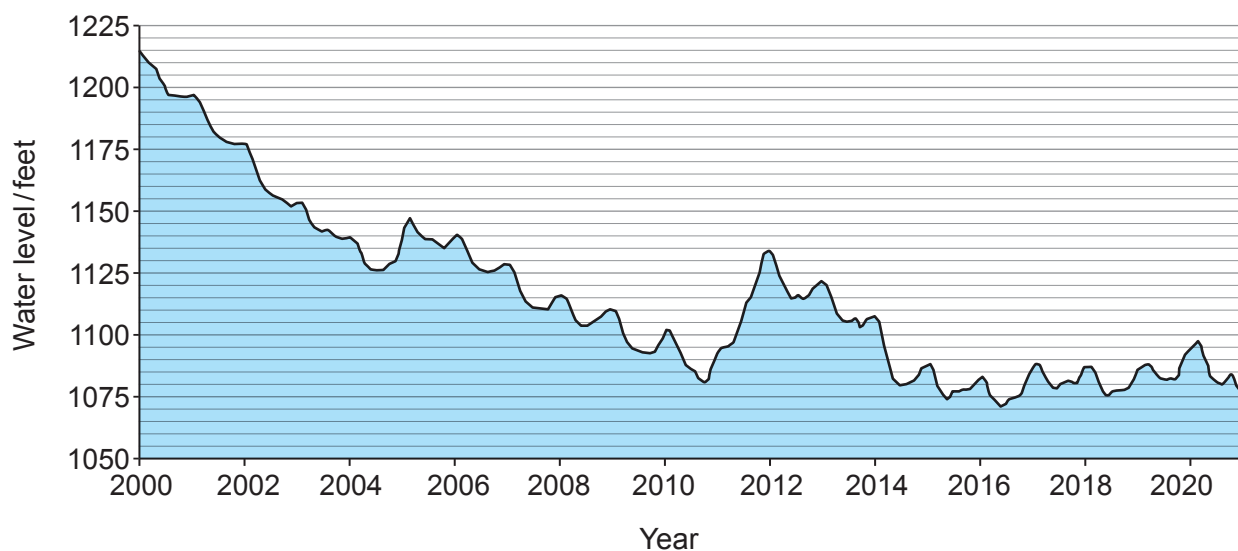
(i) Describe the location of Lake Mead in the USA.

[2]



Study **Figure 3.3**

**Figure 3.3 – Changes in the water level of Lake Mead at the Hoover Dam from 2000 to 2021**



(ii) Describe the changes in water level at the Hoover Dam from 2000 to 2021.

You should use figures in your answer.

[3]

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- (d) The USA Government decided to reduce water supplies from the Colorado River to parts of the USA and Mexico from 2022. Study **Figure 3.4**.

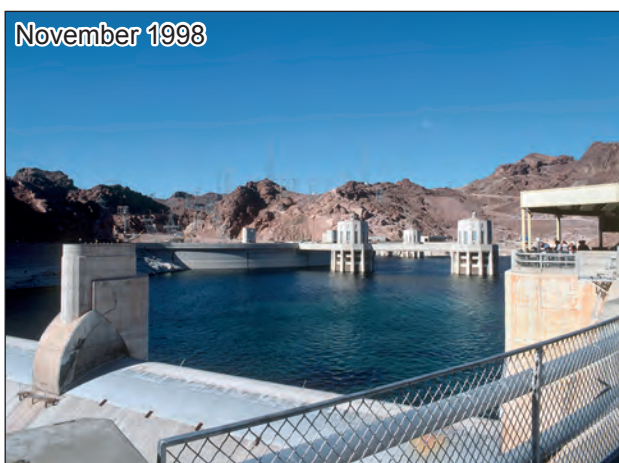
**Figure 3.4.**



**Fact Box**

- The Colorado River flows through Lake Mead and provides water to nearly 40 million people.
- There has been a drought since 2000.
- From 2022 the states of Arizona will lose 18%, and Nevada 7%, of their water supply from the Colorado River.
- The country of Mexico, a NIC, will lose 5% of its supply of water from the Colorado River.
- Farmers will be severely affected.

**Water levels at the Hoover Dam**







Additional space for Question 3(d) only:

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**End of Question 3**

**END OF PAPER**







Explorer series (1:25 000 scale)  
EXPLORER MAP SYMBOLS

ROADS AND PATHS

Not necessarily rights of way

M1 or A6(M)

Motorway

S

Service area

7

Junction number

T1

Toll road junction

A 35

Dual carriageway

S

Service area

A 30

Main road

B 3074

Secondary road

Narrow road with passing places

Road under construction

Road generally more than 4m wide

Road generally less than 4m wide

Other road, drive or track, fenced and unfenced

Gradient: steeper than 20% (1 in 5); 14% (1 in 7) to 20% (1 in 5)

Ferry

Ferry; Ferry P (passenger only)

London River Services

Path

RAILWAYS

Standard gauge

Single track

Multiple track

Road over

Road under

Level crossing

Cutting

Embankment

Tunnel

Station, open to passengers

London Underground

Siding

Narrow gauge tramway or light rail system

Station

PUBLIC RIGHTS OF WAY

Not shown on maps of Scotland

Footpath

Byway open to all traffic

The representation on this map of any other road, track or path is no evidence of the existence of a right of way.

Bridleway

Road used as a public path

OTHER PUBLIC ACCESS

Other routes with public access (not normally shown in urban areas)

The exact nature of the rights on these routes and the existence of any restrictions may be checked with the local highway authority. Alignments are based on the best information available.

Recreational route ( alternative route)

National Trail

Traffic-free cycle route

1

1

National cycle network route number – traffic free; on road

Permissive footpath

Footpaths and bridleways along which landowners have permitted public use but which are not rights of way. The agreement may be withdrawn.

Permissive bridleway

DANGER AREA

Firing and test ranges in the area. Danger! Observe warning notices.

MANAGED ACCESS

Access permitted within managed controls, for example, local byelaws.

BOUNDARIES

National

Civil Parish (CP); England or Community (C); Wales

County; England

National Park boundary

Unitary Authority (UA), London Borough (LB), Metropolitan District (Met Dist) or District (Scotland & Wales are solely Unitary Authorities)

ARCHAEOLOGICAL AND HISTORICAL INFORMATION

Site of antiquity

VILLA

Roman

Visible earthwork

1066

Site of battle (with date)

Non-Roman

HEIGHTS AND NATURAL FEATURES

Water

Mud

Sand

Shingle

Survey height;

52

Ground

284

Air

Contours

Vertical face/cliff

Outcrop

Scree

Loose rock

Boulders

5m

10m

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.

VEGETATION

Limits of vegetation are defined by positioning of symbols

Coniferous trees

Scrub

Non-coniferous trees

Bracken, heath or rough grassland

Coppice

Marsh, reeds or saltings

Orchard

ACCESS LAND (England and Wales)

Access information point

Access land

Access land in wooded area

within sand

Coastal margin

Access land portrayed on this map is intended as a guide to land normally available for access on foot, for example access land created under the Countryside and Rights of Way Act 2000, and land managed by National Trust, Forestry Commission, Woodland Trust and Natural Resources Wales. Some restrictions will apply; some land shown as access land may not have open access rights; always refer to local signage.

The depiction of rights of access does not imply or express any warranty as to its accuracy or completeness. Observe local signs and follow the Countryside Code. Visit: gov.uk/government/publications/the-countryside-code

GENERAL FEATURES

Gravel pit

Sand pit

Other pit or quarry

Landfill site or slag/spoil heap

Electricity transmission line

Solar farm

Slopes

Place of worship

Current or former place of worship; with tower

with spire, minaret or dome

Triangulation pillar

Mast

Windmill with or without sails

Wind pump

Wind turbine

Building; important building

Glasshouse

Youth hostel

Bunkhouse, camping barn or other hostel

Bus or coach station

Lighthouse; disused lighthouse

Beacon

ABBREVIATIONS

See website for full list

BP

Boundary post

Liby

Library

Pol Sta

Police station

BS

Boundary stone

Mkt

Market

Resr

Reservoir

CH

Clubhouse

Meml

Memorial

Sch

School

F Sta

Fire Station

MP; MS

Milepost; Milestone

TH

Town hall

FB

Footbridge

Mon

Monument

NTL

Normal tidal limit

Ind Est

Industrial Estate

PO

Post office

W; Spr

Well; spring

TOURIST AND LEISURE INFORMATION

Art gallery (notable / important)

Museum

Boat hire

National Trust

Boat trips

Nature reserve

Building of historic interest

Other tourist feature

Cadw

Parking

Camp site

P&R Park and ride, all year

Camping and caravan site

P&R Park and ride, seasonal

Caravan site

Phone; public, emergency, roadside assistance

Castle or fort

Picnic site

Cathedral or Abbey

Preserved railway

Country park

Public house(s)

Craft centre

PC Public toilets

Cycle hire

Recreation, leisure or sports centre

Cycle trail

Slipway

English Heritage

Theme or pleasure park

Fishing

Viewpoint

Forestry Commission visitor centre

Visitor centre

Garden or arboretum

Walks or trails

Golf course or links

Water activities

Heritage centre

Water activities (board)

Historic Scotland

Water activities (paddle)

Horse riding

Water activities (powered)

Information centre

Water activities (sailing)

Information centre, seasonal

Watersports centre (multi-activity)

Mountain bike trail

World Heritage site / area



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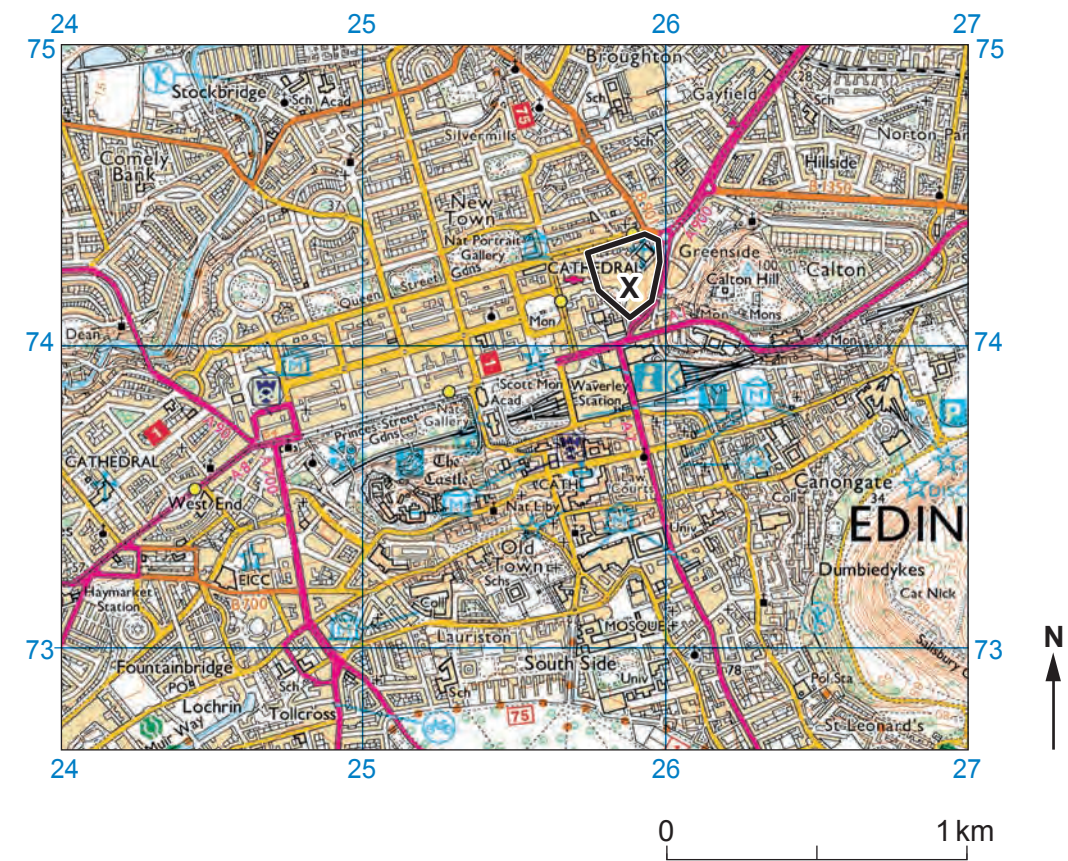
MONDAY, 22 MAY 2023 – AFTERNOON

GEOGRAPHY B – Component 1

RESOURCE FOLDER

This folder is for use with questions in **Component 1**.  
This folder need not be handed in with your answer booklet.

An OS Map of part of the city of Edinburgh



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