



Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

I declare this is my own work.

AS GEOGRAPHY

Paper 1 Physical geography and people and the environment

Tuesday 16 May 2023

Afternoon

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a pencil
- a rubber
- a ruler.

You may use a calculator.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **either** Question 1 **or** Question 2 **or** Question 3 in Section A.
- Answer **either** Question 4 **or** Question 5 in Section B.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need additional extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The total number of marks available for this paper is 80.

For Examiner's Use	
Section	Mark
A	
B	
TOTAL	



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Only **one** answer per question is allowed.

For the multiple-choice questions, completely fill in the circle alongside the appropriate answer.

CORRECT METHOD



WRONG METHODS



If you want to change your answer you must cross out your original answer as shown.



If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.



Section A

Answer **one** question in this section.

Answer **either** Question 1 **or** Question 2 **or** Question 3.

Question 1 Water and carbon cycles

0 1 . 1 Which of the following describes the groundwater store?

[1 mark]

- A** Water flowing across the ground surface.
- B** Water stored on the ground surface in lakes and ponds.
- C** Water stored in the ground below the water table.
- D** Water stored within vegetation growing on the ground.



0 1 . 2 Which of the following are **all** natural drivers of change in the water cycle?

[1 mark]

- A** Causes of precipitation, cloud formation, seasonal changes
- B** Causes of precipitation, land use changes, storm events
- C** Condensation, cryospheric processes, farming practices
- D** Evaporation, seasonal changes, water abstraction

0 1 . 3 Outline the distribution of major stores of water.

[3 marks]

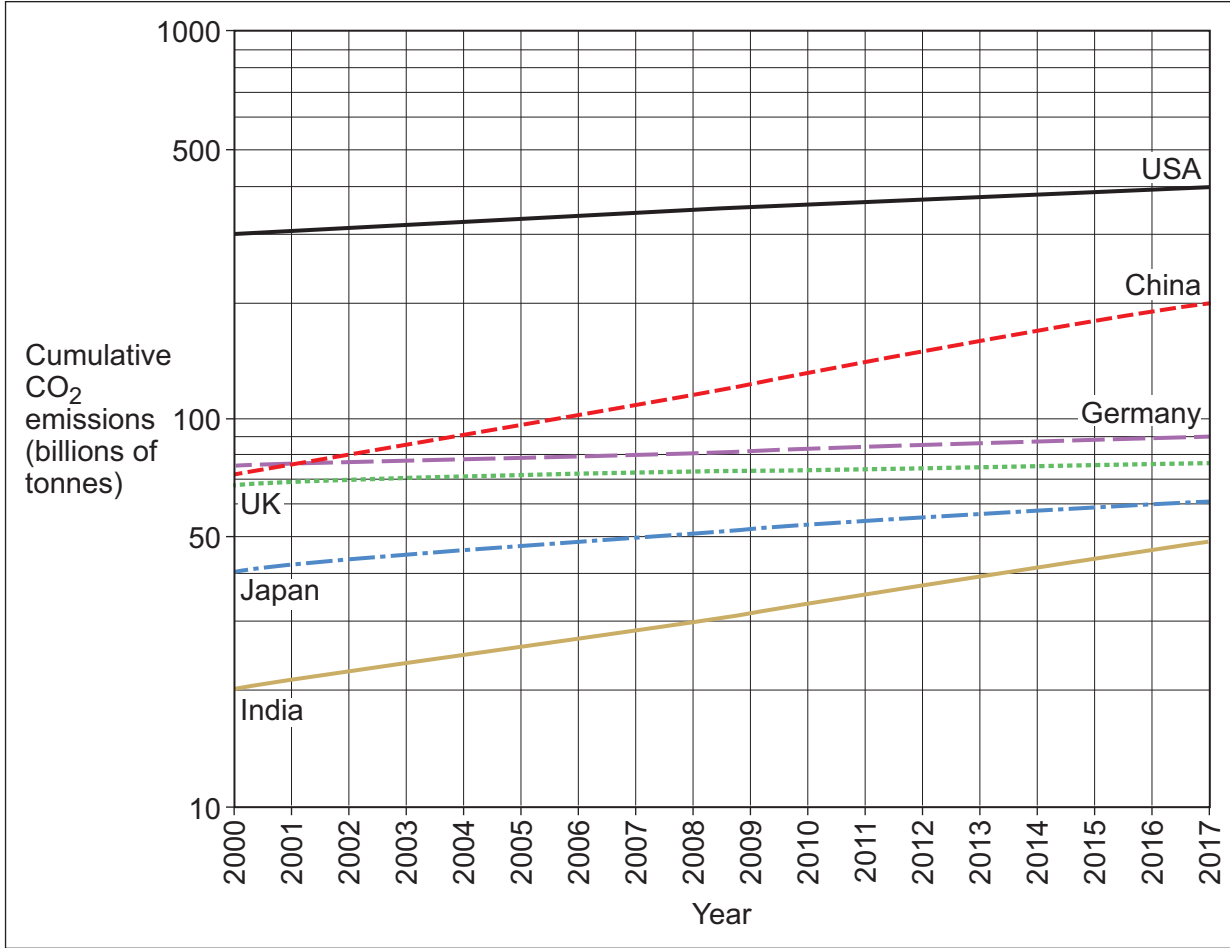
Question 1 continues on the next page

Turn over ►



Figure 1 shows information about the cumulative emissions of carbon dioxide (CO₂) produced from burning fossil fuels and the manufacture of cement between 2000 and 2017 for selected countries.

Figure 1



0 1 . 4 Analyse the information shown in **Figure 1**.

[6 marks]



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0 1 . 5

Evaluate how future human intervention in the carbon cycle could affect the size of different major stores of carbon.

[9 marks]

Question 1 continues on the next page

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End of Question 1



Question 2 Coastal systems and landscapes

0 2 . 1 Which of the following describes a process of sub-aerial weathering in coastal environments?

[1 mark]

- A** The breakdown of rock on an exposed cliff face due to the action of repeated changes in temperature.
- B** The downhill movement of material at the coast under the influence of gravity.
- C** The removal of rock from cliff tops by flowing water as it runs off the land into the sea.
- D** The weakening of rocks at the base of a cliff by repeated pounding by waves at high tide.

0 2 . 2 Which of the following are **all** landforms associated with coastal erosion?

[1 mark]

- A** Arches, offshore bars, sand dunes
- B** Barrier beaches, caves, compound spits
- C** Beaches, spits, tombolos
- D** Cliffs, stacks, wave cut platforms

0 2 . 3 Outline the process of coastal deposition.

[3 marks]

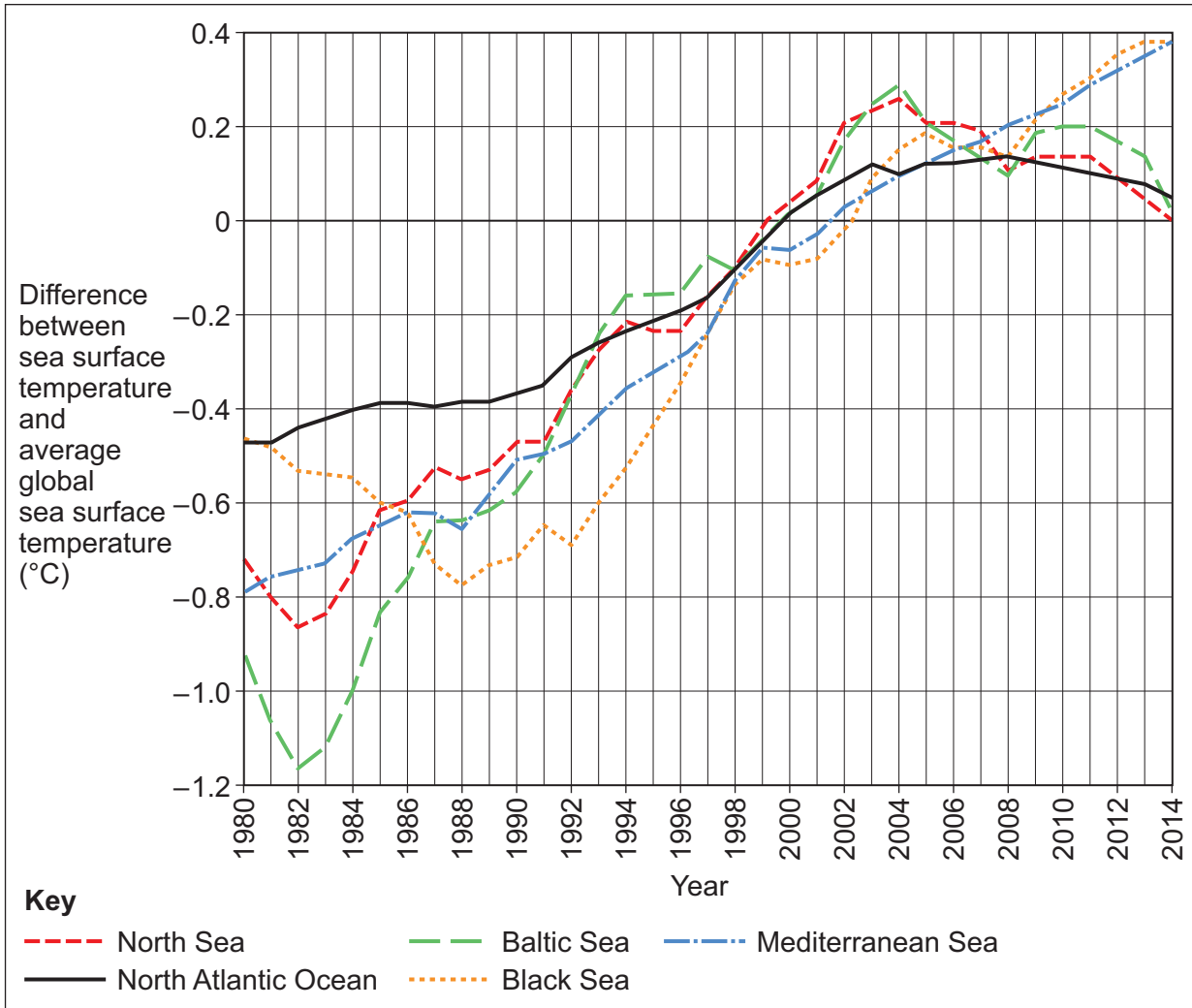
Question 2 continues on the next page

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Figure 2 shows information about average annual sea surface temperatures for 1980 to 2014, compared to the average global sea surface temperature between 1993 and 2012.

Figure 2



Question 3 Glacial systems and landscapes

0 3 . 1 Which of the following describes a process of weathering in cold environments?

[1 mark]

- A** The breakdown of rock in a hollow under a snow patch as a result of frost action.
- B** The breakdown of rock under a glacier by the action of sub-glacial meltwater.
- C** The downhill movement of debris in cold environments under the influence of gravity.
- D** The removal of rock from the land surface by glacial ice freezing to it and moving away.

0 3 . 2 Which of the following are **all** periglacial landforms?

[1 mark]

- A** Blockfields, patterned ground, terracettes
- B** Eskers, kames, outwash plains
- C** Drumlins, erratics, thermokarst
- D** Outwash plains, roches moutonneés, truncated spurs



0 3 . 3 Outline characteristics of warm based glaciers.

[3 marks]

Question 3 continues on the next page

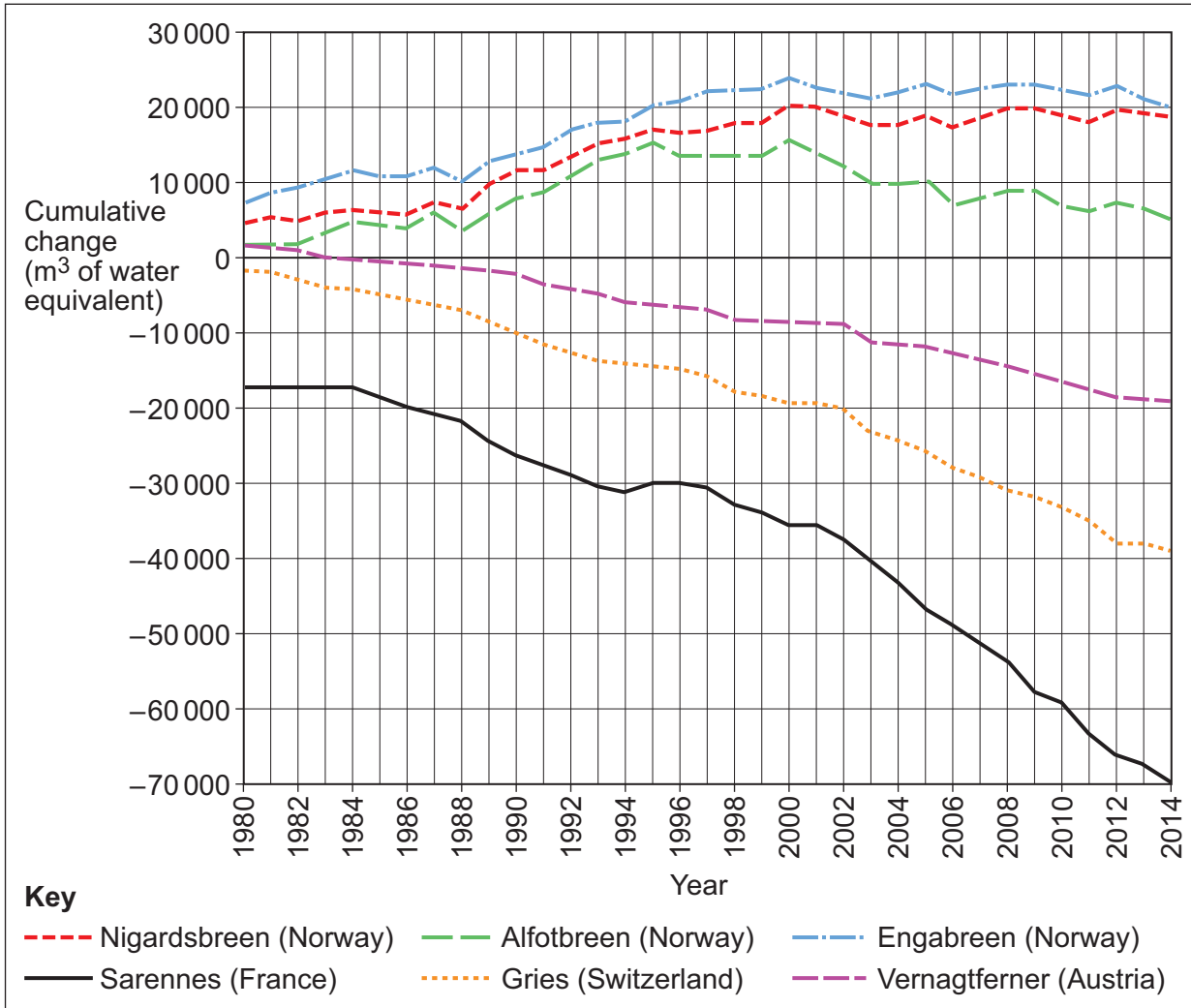
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Figure 3 shows information about the cumulative change in glacial mass of six European glaciers compared to 1945 levels.

The change in ice mass is measured in cubic metres (m³) of water equivalent. On the y-axis '0' represents glacial mass in 1945.

Figure 3



0 3 . 4 Analyse the information shown in **Figure 3**.

[6 marks]

Question 3 continues on the next page

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0 3 . 5

Assess the importance of processes of erosion in the formation of **one or more** landforms found in a glaciated landscape.

[9 marks]



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End of Section A

Turn over for Section B

Turn over ▶



Section B

Answer **one** question in this section.

Answer **either** Question 4 **or** Question 5.

Question 4 Hazards

0 4 . 1 Which of the following are **all** forms of volcanic hazards?

[1 mark]

- A** Ash fallout, liquefaction, tephra
- B** Earthquakes, liquefaction, tsunamis
- C** Mudflows, landslides, storm surges
- D** Nuées ardentes, pyroclastic fallout, acid rain

0 4 . 2 Which of the following describes magma plumes?

[1 mark]

- A** A feature of the solid metal inner core associated with the Earth's magnetic field.
- B** Areas within the mantle where hotter, less-dense magma rises towards the surface.
- C** Violent jets of molten lava from a vent or fissure during a volcanic eruption.
- D** Zones where two tectonic plates slide past each other as one is subducted under the other.



0 4 . 3

Summarise the main features of the Hazard Management Cycle.

[3 marks]

Question 4 continues on the next page

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Figure 4 and Figure 5 show information about deaths from natural disasters as a share of total deaths in each country in 1990 and 2017.

Figure 4

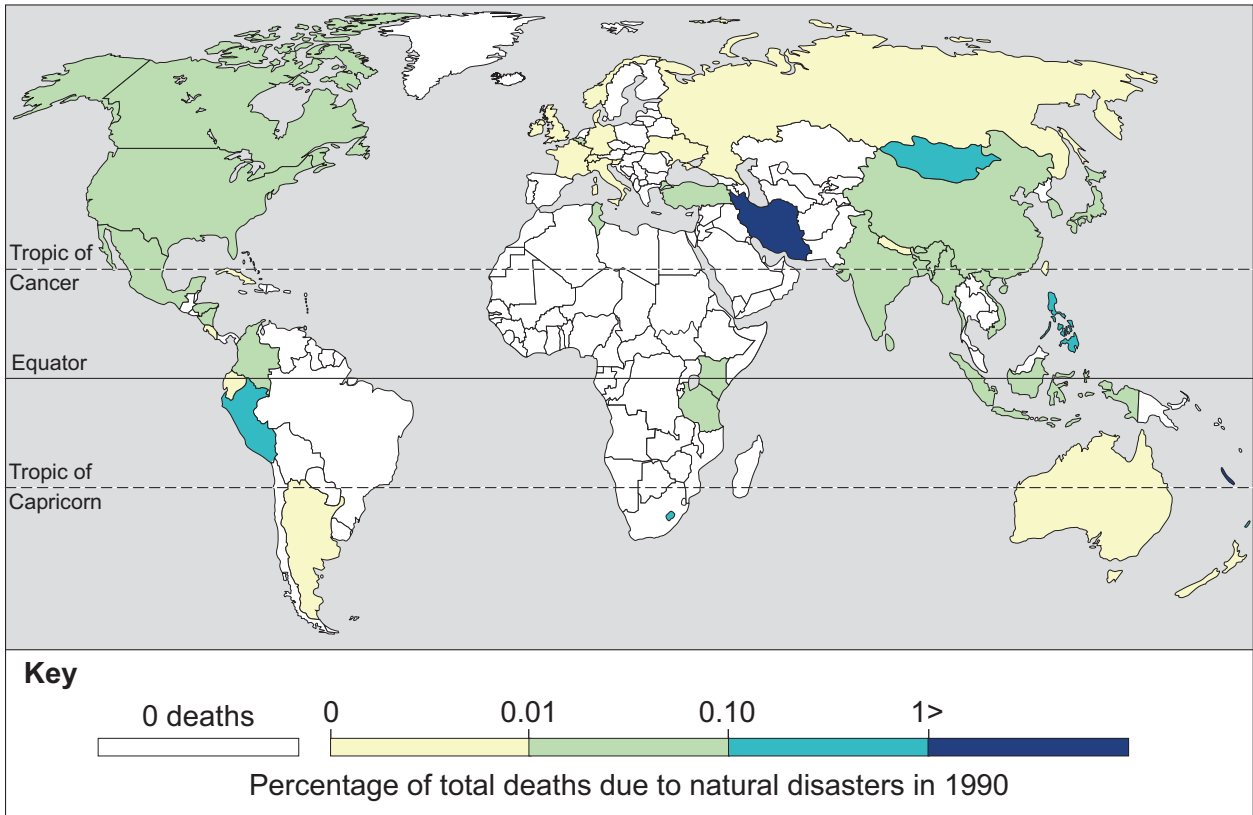
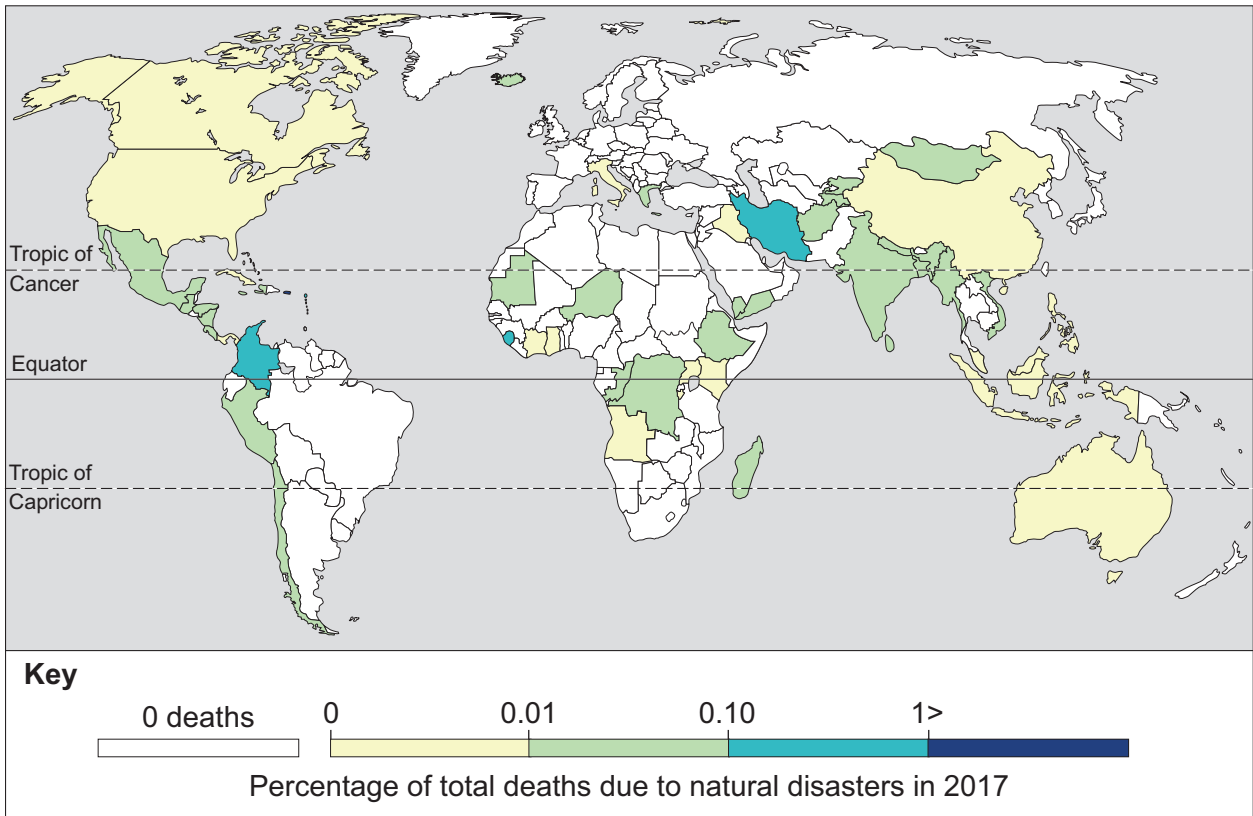


Figure 5



0 4 . 4

Analyse the information shown in Figure 4 and Figure 5.

[6 marks]

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0 4 . 5

Evaluate the relative importance of endogenous factors in how people experienced a recent seismic event that you have studied.

[9 marks]



0 4 . 6

'The Park model shows that the human response to a hazard always leads to an improvement in quality of life from that before the event.'

With reference to a recent wildfire event you have studied, how far do you agree with this statement?

[20 marks]

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End of Question 4

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Question 5 Contemporary urban environments

0 5 . 1 Which of the following describes river restoration?

[1 mark]

- A** Managing a river by straightening the channel to reduce the risk of flooding in urban areas.
- B** Managing a river to reinstate natural processes, improve biodiversity and create a better environment for people and wildlife.
- C** Managing urban drainage by replacing impermeable surfaces with more permeable materials to reduce flood risk.
- D** Managing urban drainage in a more natural way to drain water slowly into rivers to reduce the risk of flooding.

0 5 . 2 Which of the following are **all** characteristics of urban climate compared to the surrounding rural area?

[1 mark]

- A** Higher temperatures, higher amounts of precipitation and lower average wind speeds
- B** Higher temperatures, lower amounts of precipitation and higher average wind speeds
- C** Lower temperatures, higher amounts of precipitation and higher average wind speeds
- D** Lower temperatures, lower amounts of precipitation and lower average wind speeds



0 5 . 3

Outline characteristics of cultural and heritage quarters in urban areas.

[3 marks]

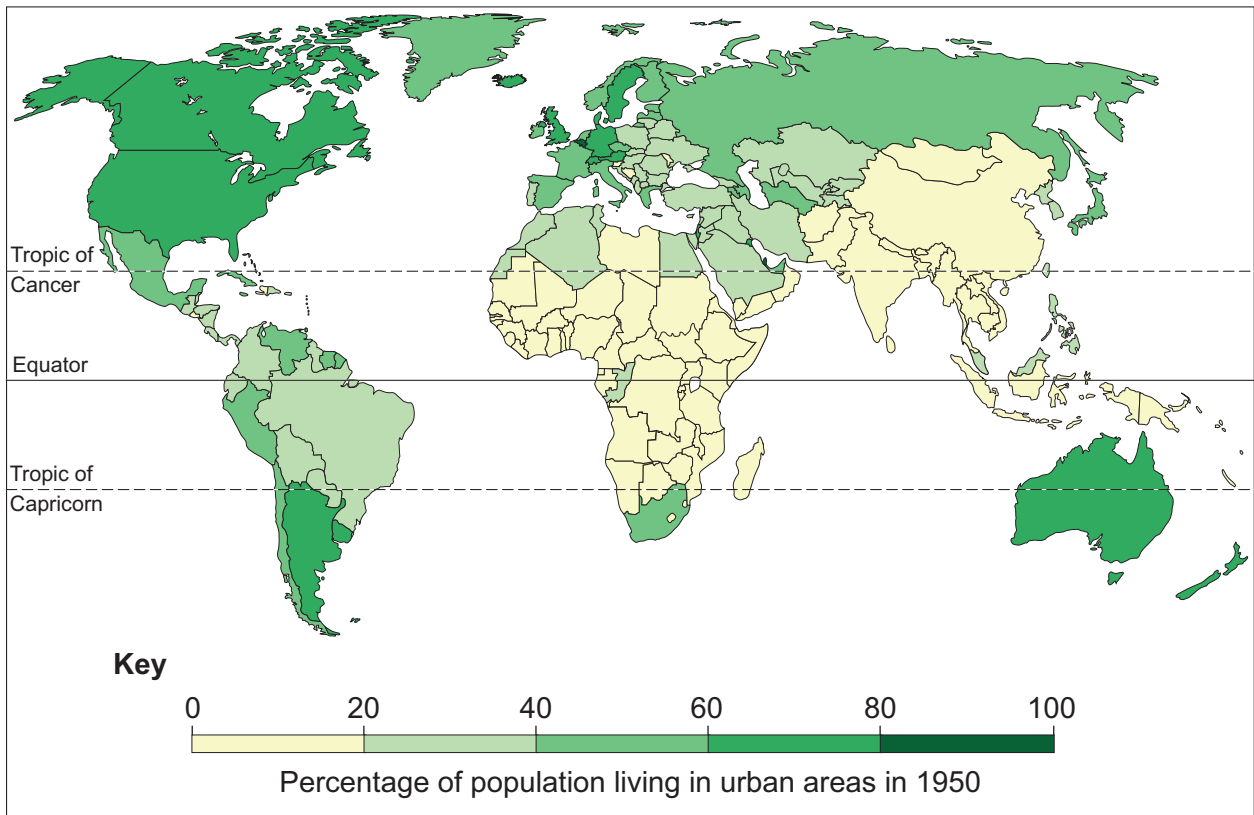
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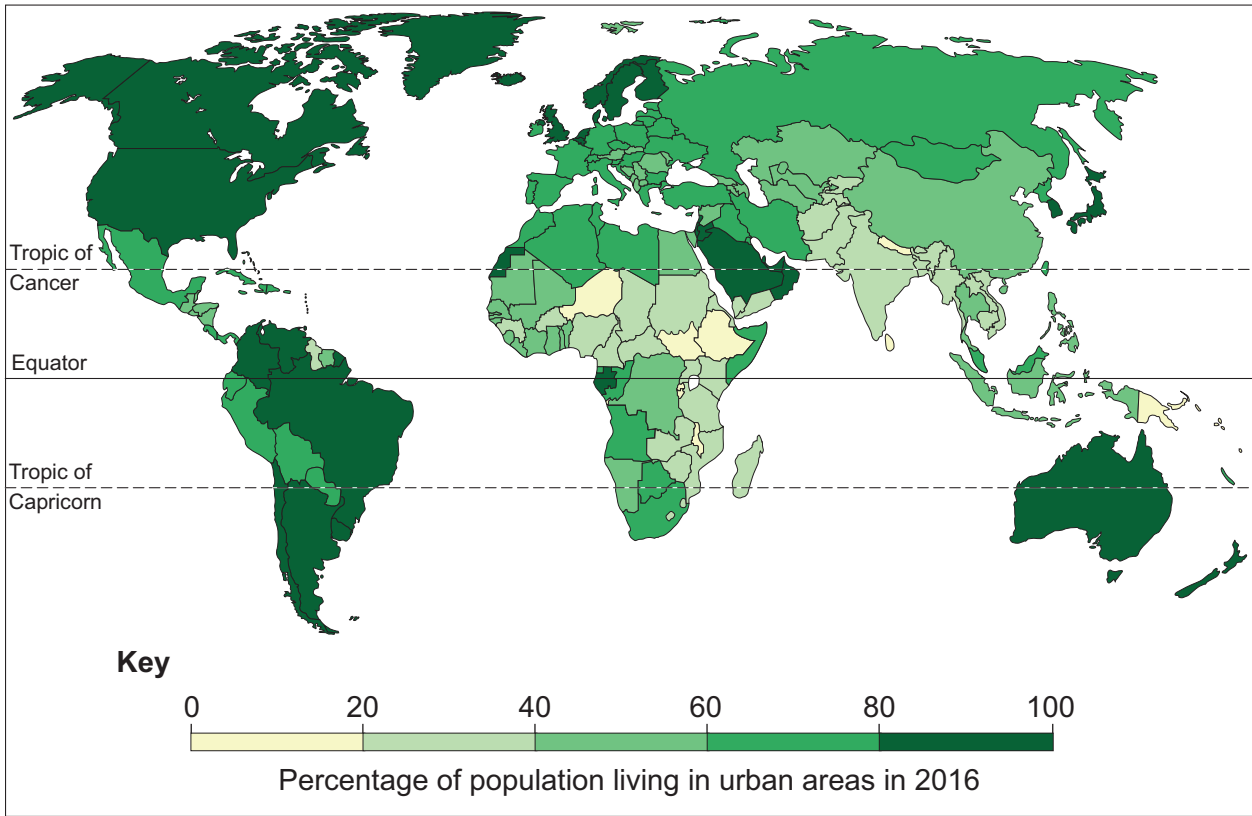
Figure 6 and Figure 7 show information about levels of urbanisation in 1950 and 2016.

Figure 6



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Figure 7



0 5 . 4 Analyse the information shown in Figure 6 and Figure 7.

[6 marks]

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0 5 . 5

Assess the extent to which past and present processes of development may have affected levels of atmospheric pollution in an urban area that you have studied.

[9 marks]



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END OF QUESTIONS



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