Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

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.

For Examiner's Use	
Section	Mark
A	
B	
TOTAL	

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.

Do not write outside the box

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. ○

Do not write outside the box

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

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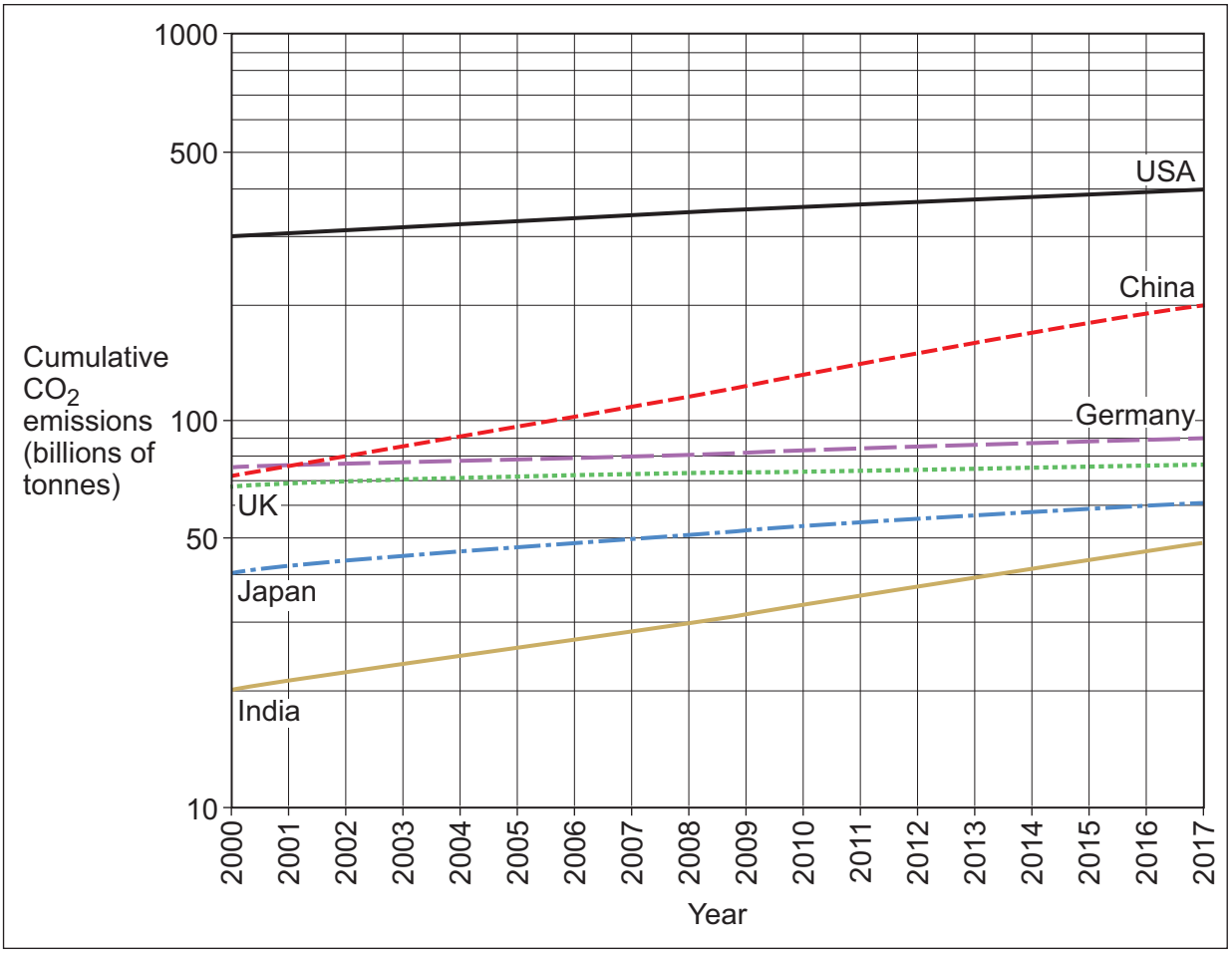
Figure 1 shows information about the cumulative emissions of carbon dioxide (CO_2) produced from burning fossil fuels and the manufacture of cement between 2000 and 2017 for selected countries.

Figure 1



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

[6 marks]

Do not write outside the box

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

Do not write outside the box

0 1 . 6 'Climate change will significantly affect flooding and/or the potential for sustainable water supply.'

With reference to a local scale river catchment you have studied, how far do you agree with this statement?

[20 marks]

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End of Question 1

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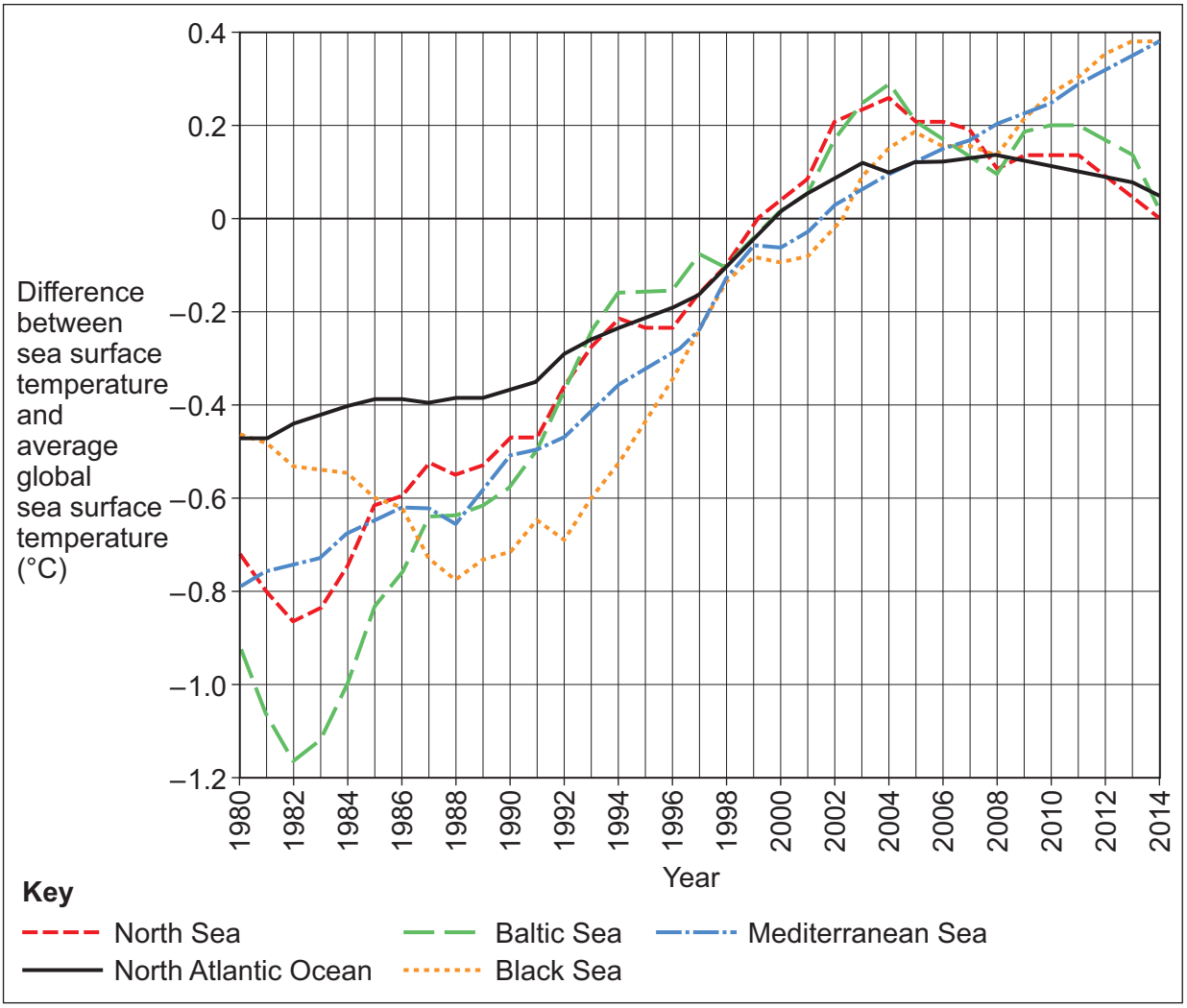
Figure 2 shows information about average annual sea surface temperatures for 1980 to 2014, compared to the average global sea surface temperature between 1993 and 2012.

Figure 2



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0 2 . 4 Analyse the information shown in **Figure 2**.

[6 marks]

Question 2 continues on the next page

Do not write outside the box

0 2 . 5 Assess the possible impacts of sea level change on estuarine saltmarsh environments.

[9 marks]

Do not write outside the box

0 2 . 6 'Sustainable approaches to coastal flood and erosion risk are the only way forward in managing coasts.'

With reference to a local scale coastal environment you have studied, how far do you agree with this statement?

[20 marks]

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Extra space

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End of Question 2

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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 ⬭

Do not write outside the box

0 3 . 3 Outline characteristics of warm based glaciers.

[3 marks]

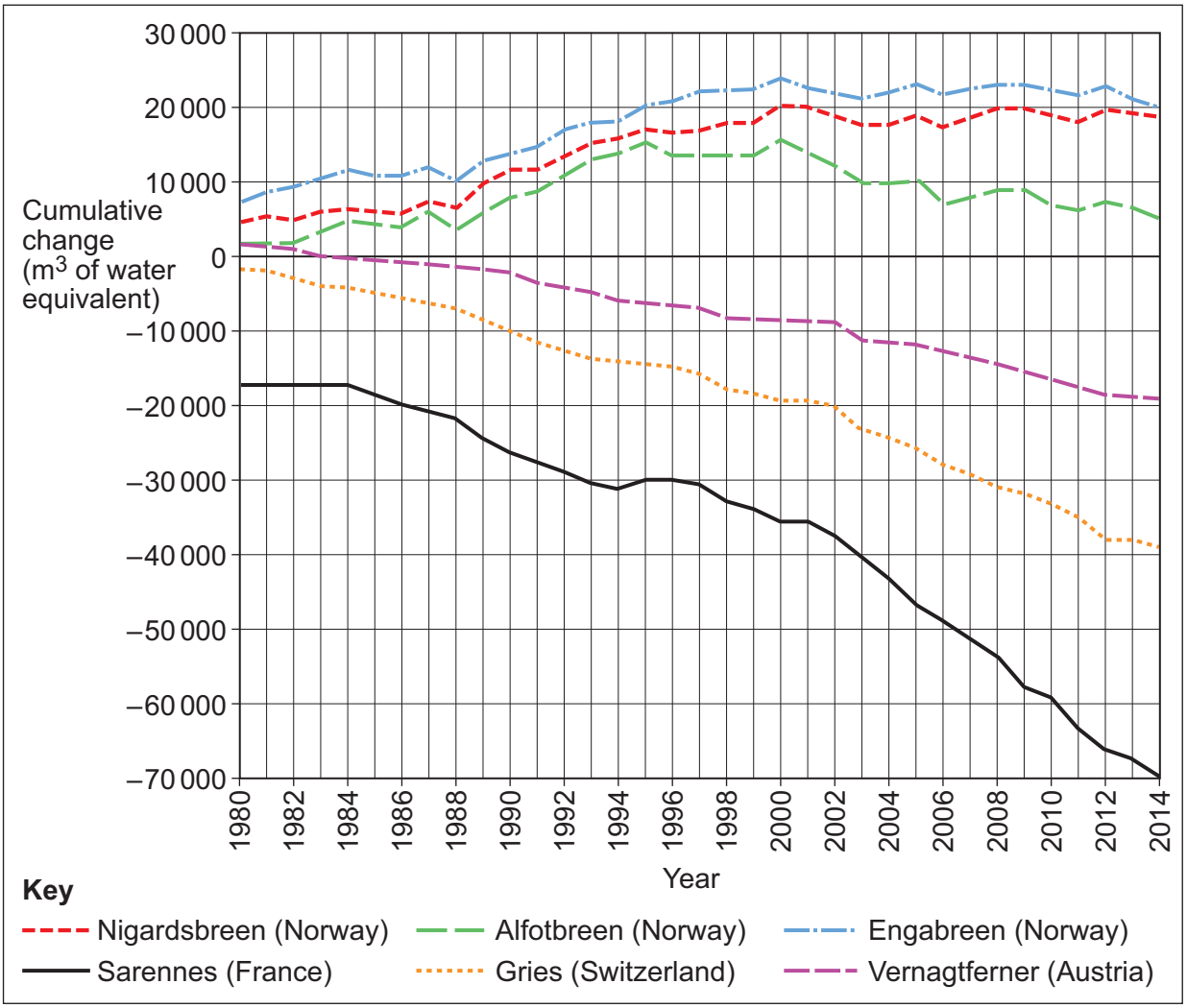
Question 3 continues on the next page

Do not write outside the box

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 (m^3) of water equivalent. On the y-axis '0' represents glacial mass in 1945.

Figure 3



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

[6 marks]

Question 3 continues on the next page

Do not write outside the box

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]

Do not write outside the box

0 3 . 6 'Climate change will present greater opportunities than challenges for human occupation and development.'

With reference to a cold environment that you have studied, how far do you agree with this statement?

[20 marks]

Do not write outside the box

Extra space

Do not write outside the box

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End of Section A

Turn over for Section B

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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.

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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

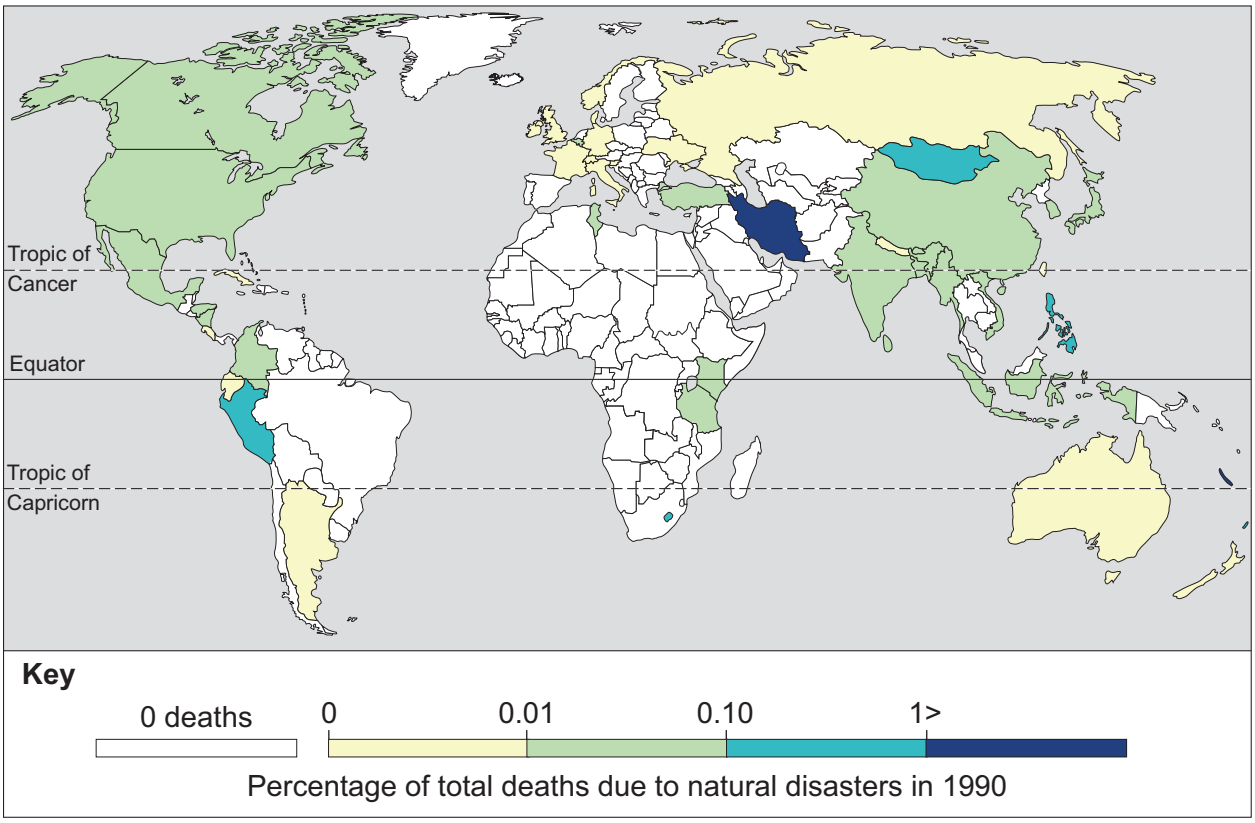

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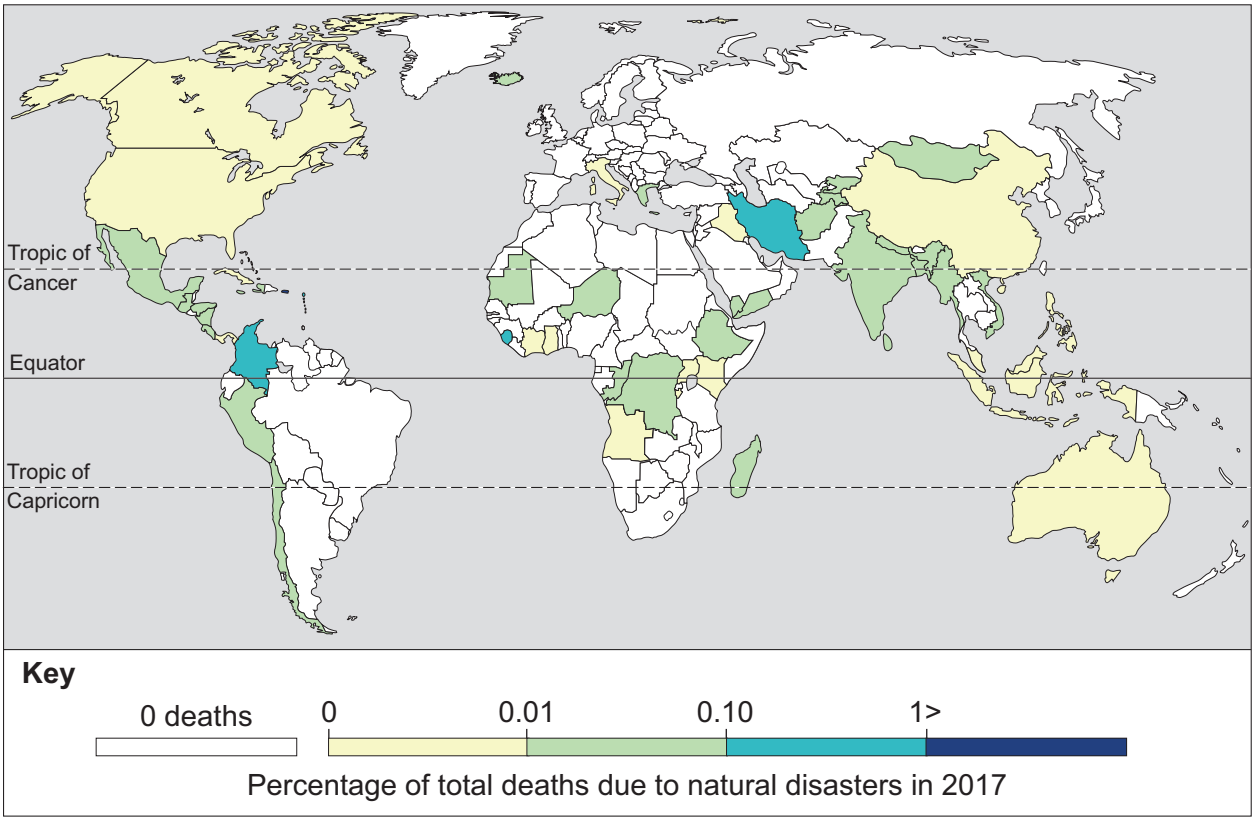
Figure 5



0 4 . 4 Analyse the information shown in **Figure 4** and **Figure 5**.

[6 marks]

Do not write outside the box

0 4 . 5 Evaluate the relative importance of endogenous factors in how people experienced a recent seismic event that you have studied.

[9 marks]

Do not write outside the box

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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Do not write outside the box

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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 ⬭

Do not write outside the box

0 5 . 3 Outline characteristics of cultural and heritage quarters in urban areas.

[3 marks]

Question 5 continues on the next page

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

Figure 6

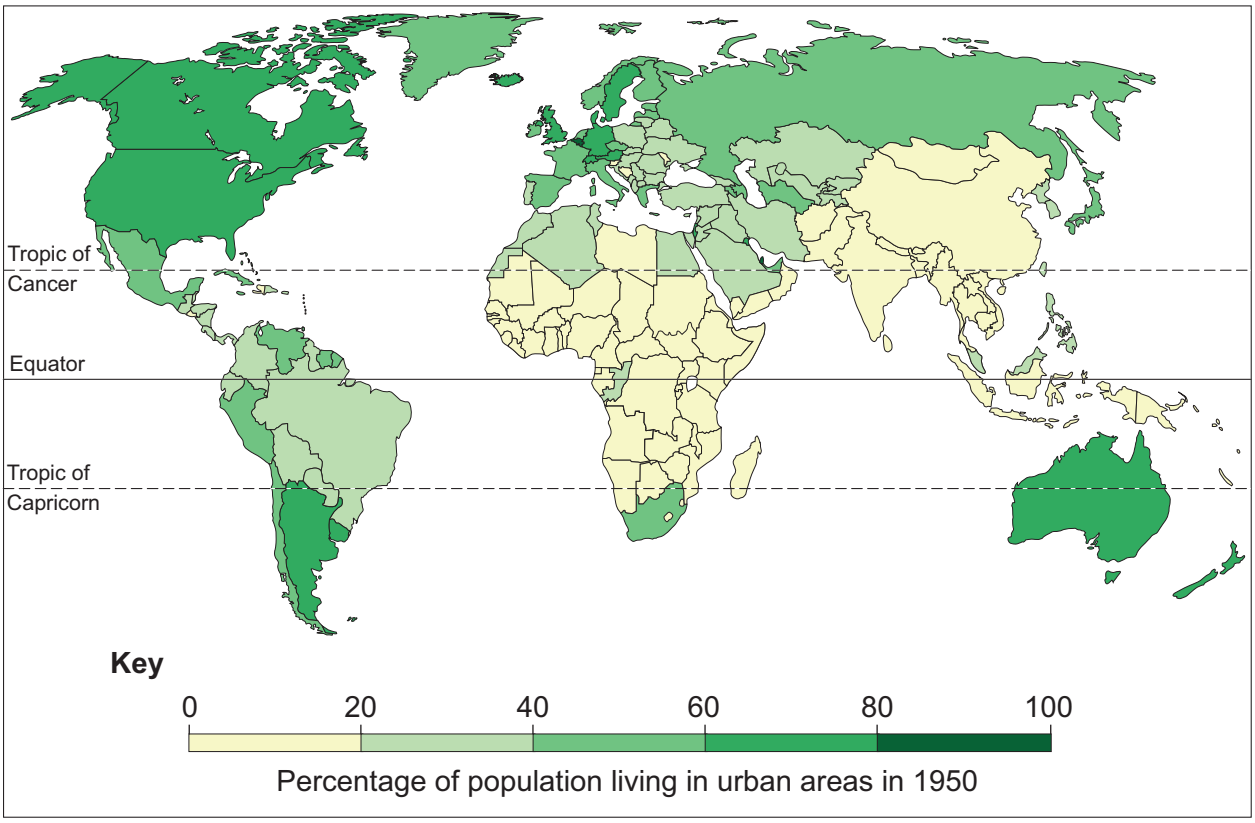

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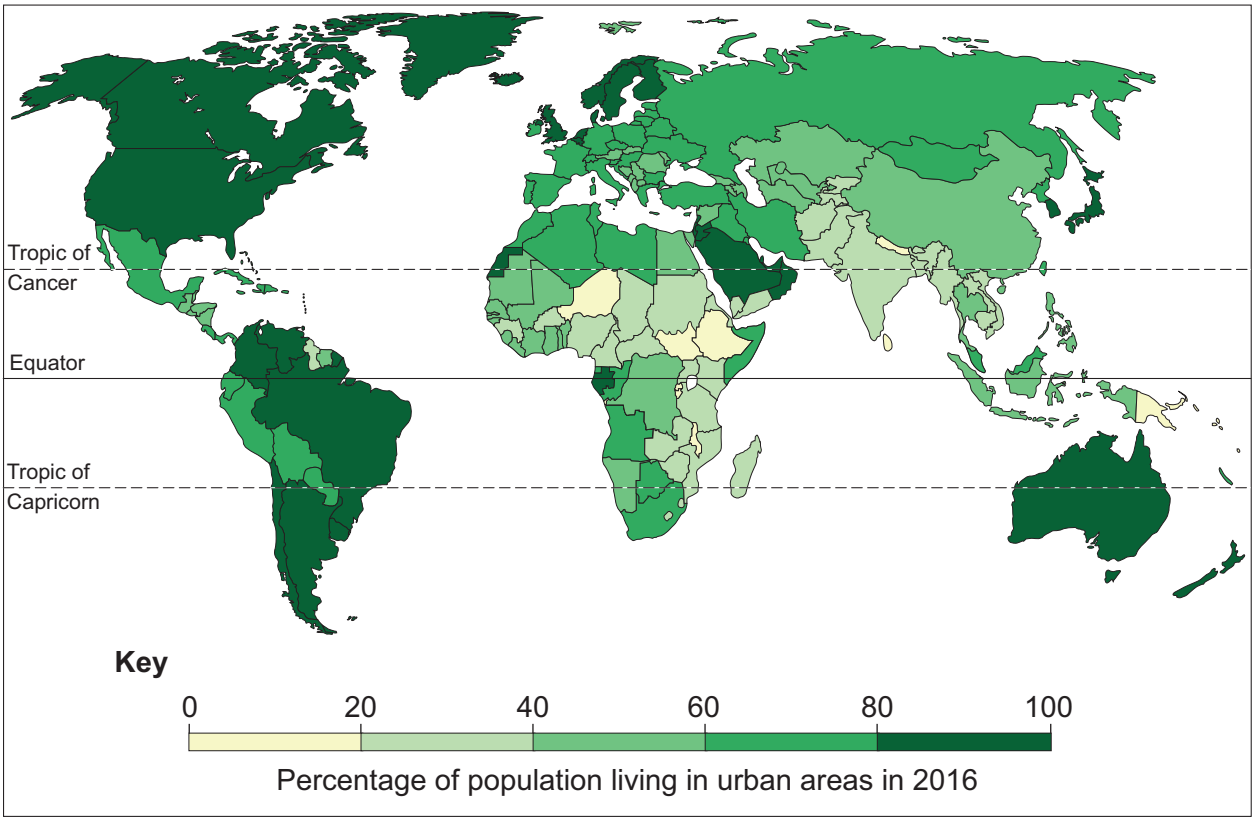
Figure 7



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

[6 marks]

Do not write outside the box

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]

Do not write outside the box

0 5 . 6 'It is clear that the ecological footprint of major urban areas will only increase in the future.'

With reference to an urban area you have studied, how far do you agree with this statement?

[20 marks]

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END OF QUESTIONS

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