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

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.

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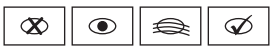
Only **one** answer per question is allowed.

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 cryospheric store of water?

[1 mark]

A All water stored as liquid in the atmosphere. ⬭

B All water stored as vapour in the atmosphere. ⬭

C All water stored in its liquid state at the Earth's surface. ⬭

D All water stored in its solid state in glaciers, ice caps and sea ice. ⬭

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0 1 . 2 Which of the following outlines a positive feedback in the water cycle?

[1 mark]

A Increased CO_2 in the atmosphere → warmer temperatures → plants grow quicker removing CO_2 from the atmosphere by photosynthesis → levels of atmospheric CO_2 reduced. ⬭

B Increased CO_2 in the atmosphere acts as a greenhouse gas → atmosphere warms up → methane released as permafrost melts → levels of greenhouse gases increase. ⬭

C Increased greenhouse gases in the atmosphere → atmospheric temperatures rise → increasing evaporation from the surface → water vapour condenses forming clouds → clouds reduce the warming effect. ⬭

D Increased water vapour in the atmosphere acts as a greenhouse gas → atmosphere warms up → more water is evaporated from the oceans → vapour increases in the atmosphere. ⬭

0 1 . 3 Outline features of a flood hydrograph.

[3 marks]

Question 1 continues on the next page

Figure 1 shows levels of urbanisation and CO_2 emissions for selected countries, in different continents, in 1960.
Figure 2 shows levels of urbanisation and CO_2 emissions for the same selected countries in 2019.

Figure 1

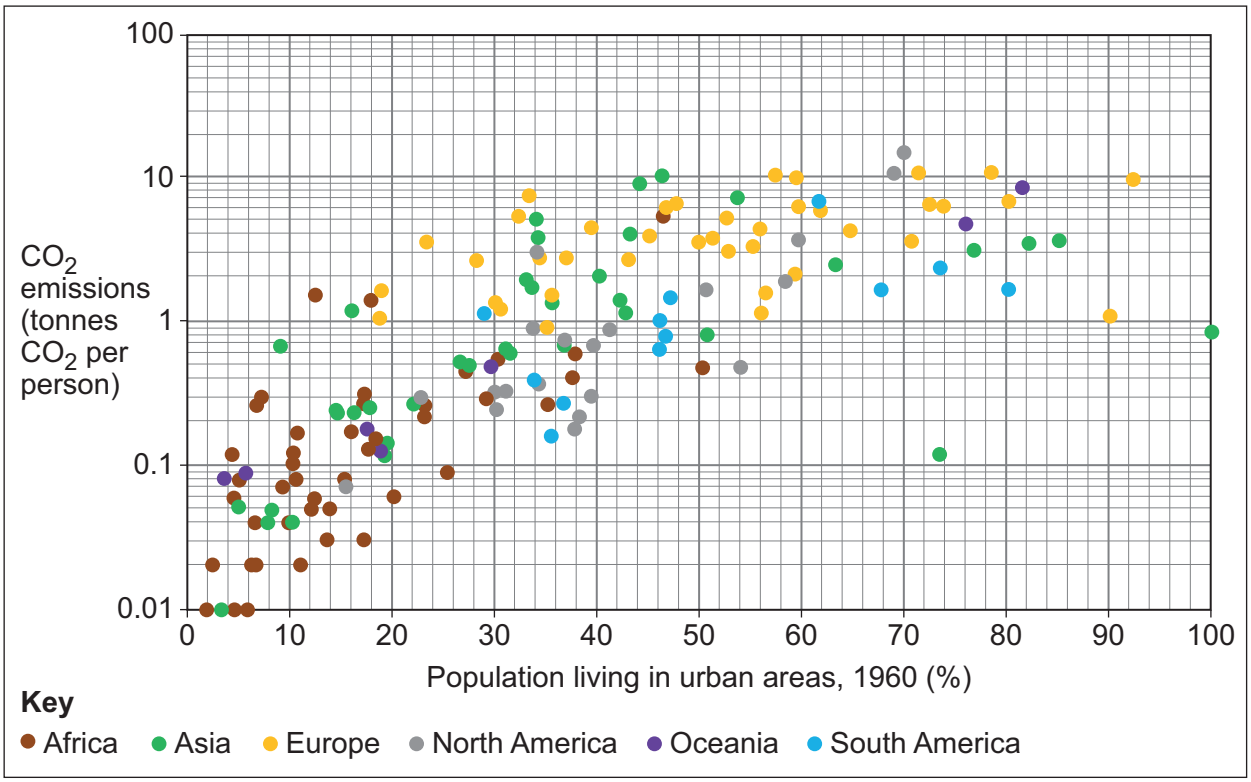
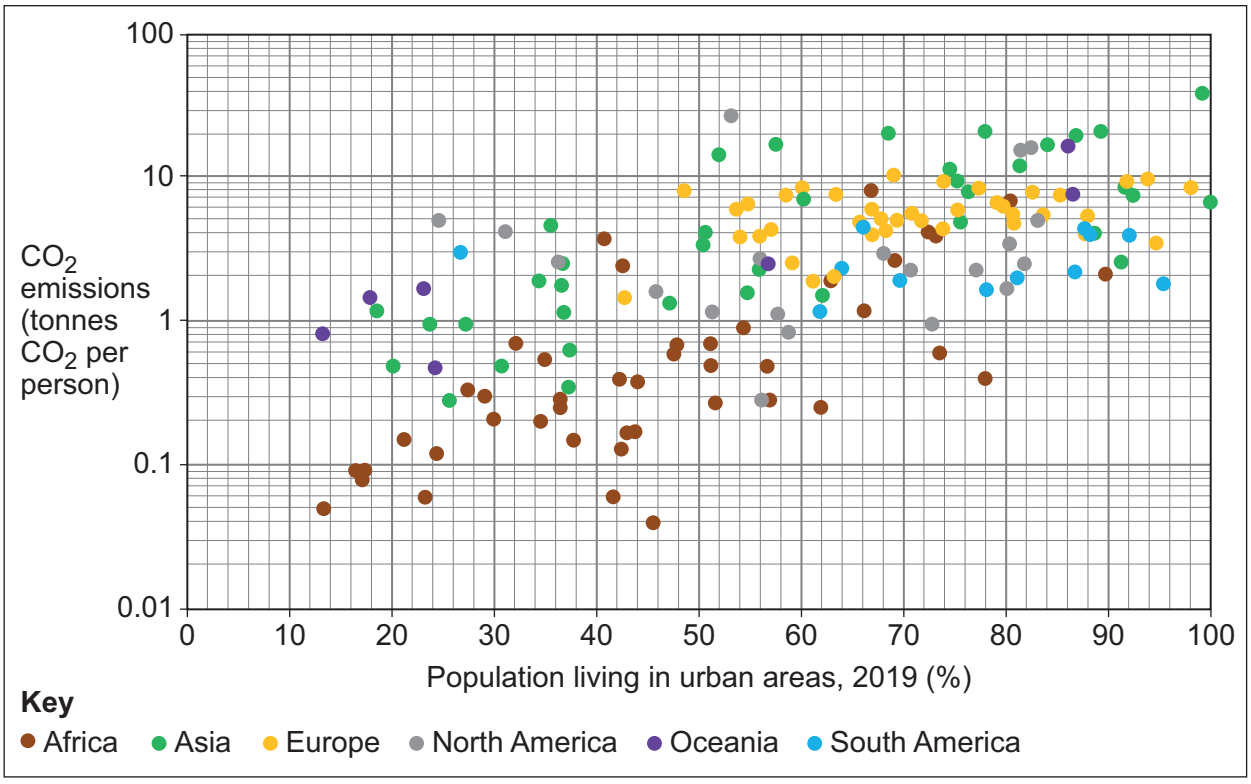


Figure 2



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0 1 . 4 Analyse the data shown in **Figure 1** and **Figure 2**.

[6 marks]

0 1 . 5 Assess the scale of changes to stores of carbon in a tropical rainforest you have studied.

[9 marks]

Do not write outside the box

0 1 . 6 ‘There is always a balance between the inputs and outputs of water in a drainage basin.’

To what extent 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 are all landforms of coastal deposition?

[1 mark]

A Beaches, barrier beaches, compound spits, offshore bars. ⬭

B Beaches, caves, Dalmatian coasts, spits. ⬭

C Cliffs, offshore bars, spits, tombolos. ⬭

D Tombolos, rias, sand dunes, wave cut platforms. ⬭

0 2 . 2 Which of the following outlines a positive feedback at the coast?

[1 mark]

A Erosion occurs at the base of a cliff → a wave-cut platform begins to form → erosion extends the platform → waves have further to travel and lose energy → erosion decreases. ⬭

B Vegetation begins to grow in sediments of saltmarshes → vegetation traps more sediment → height of the marsh increases → length of time inundated by the sea reduces → vegetation growth increases. ⬭

C Storms erode sediment from a beach → sediment deposited as offshore bars → waves break earlier → erosion reduces → after the storm, waves return sediment to the beach. ⬭

D Waves erode the base of a cliff → undercutting leaves the cliff unsupported → cliff collapses leaving debris at the base → cliff is protected from powerful waves → rates of erosion are reduced. ⬭

0 2 . 3 Outline features of integrated coastal zone management.

[3 marks]

Question 2 continues on the next page

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Figure 3 shows total populations and numbers of people living in areas at risk of coastal flooding in selected countries, in different continents, in 2020.
Figure 4 shows predicted total populations and numbers of people living in areas at risk of coastal flooding in the same countries in 2100.

Figure 3

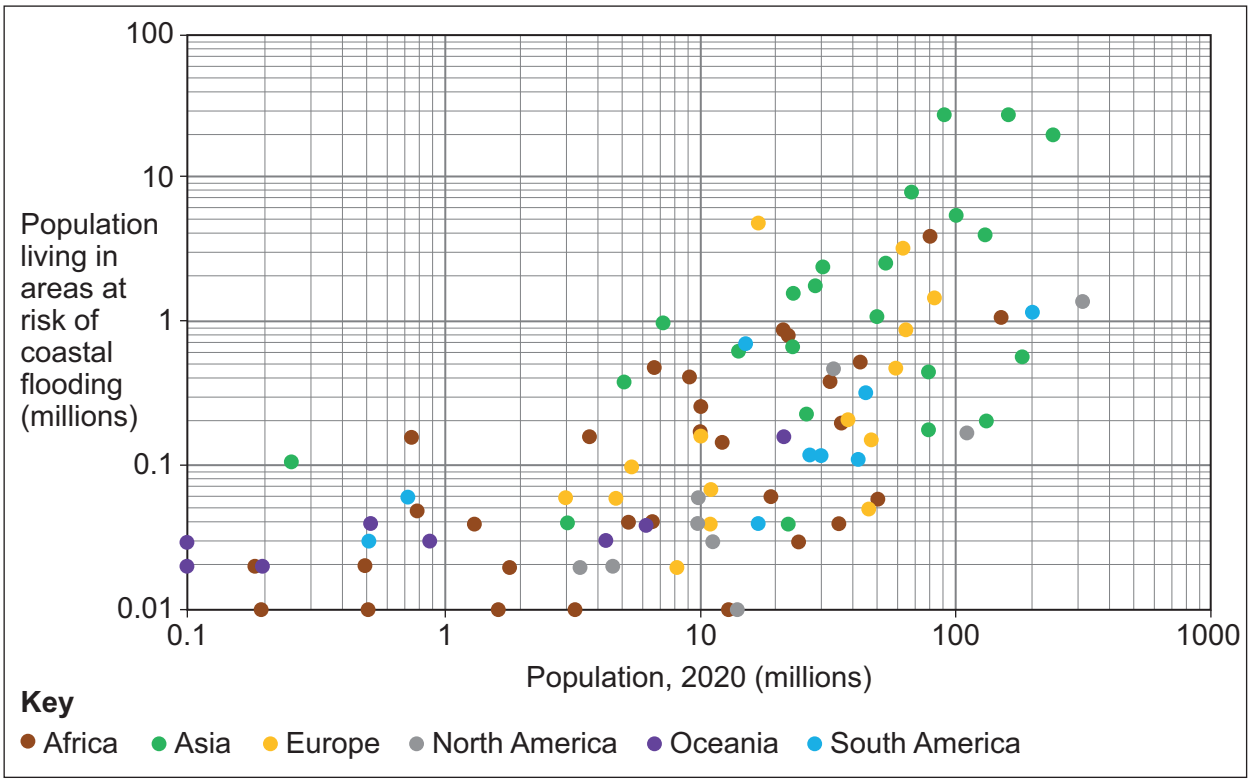
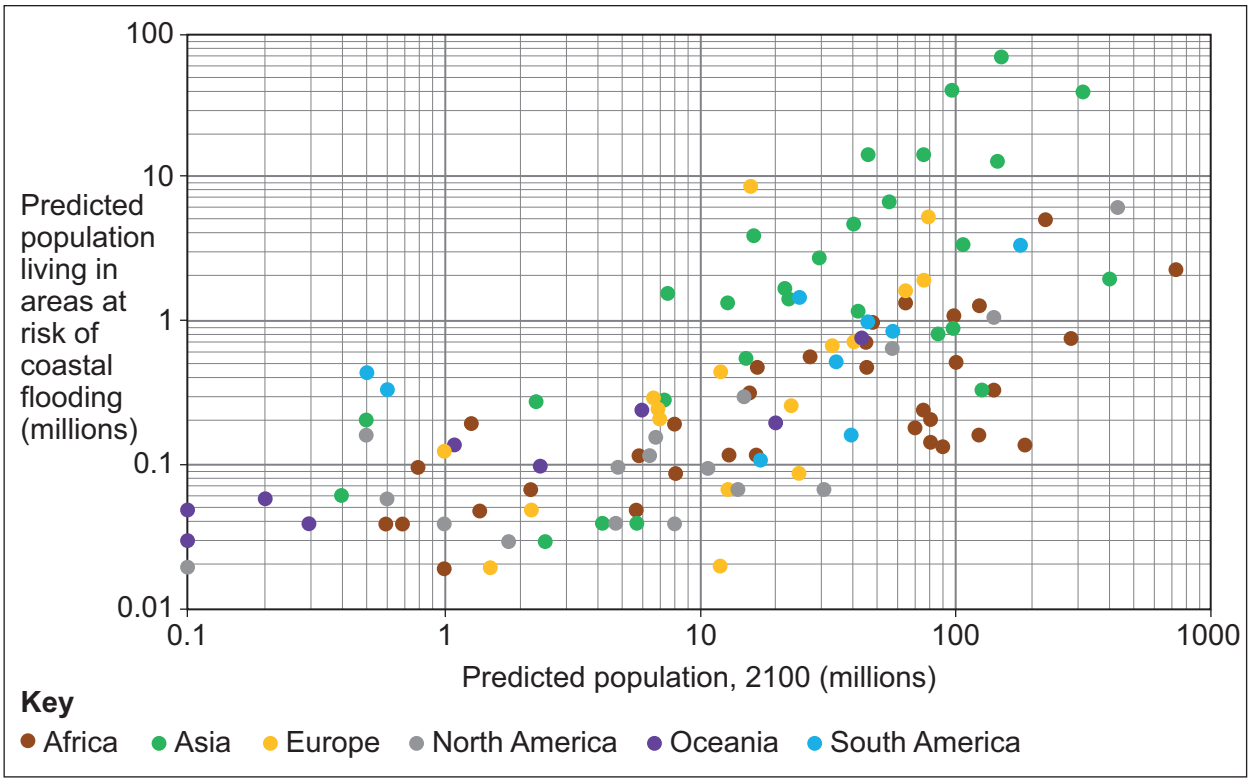


Figure 4



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0 2 . 4 Analyse the data shown in **Figure 3** and **Figure 4**.

[6 marks]

Question 2 continues on the next page

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0 2 . 5 With reference to a coastal landscape beyond the UK that you have studied, assess the extent to which people will be able to successfully adapt to the risks they face in living on the coast in the future.

[9 marks]

Do not write outside the box

0 2 . 6 ‘Submergent coastal landforms will develop faster than emergent features in the future.’

To what extent do you agree with this statement?

[20 marks]

Extra space

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End of Question 2

Do not write outside the box

Question 3 Glacial systems and landscapes

0 3 . 1 Which of the following describes the distribution of alpine cold environments?

[1 mark]

A At the extreme northern and southern latitudes, almost entirely above 60° north and 60° south. ⬭

B At low altitudes and low latitudes where temperatures are too warm for glaciers to develop. ⬭

C In areas of high altitude in major mountain ranges, often with active valley glaciers. ⬭

D In areas at any latitude, but surrounding areas that are currently occupied by glaciers. ⬭

0 3 . 2 Which of the following outlines a positive feedback in cold environments?

[1 mark]

A Atmosphere warms up ⟶ more vegetation grows in warmer environments ⟶ CO_2 removed from atmosphere ⟶ reduces warming. ⬭

B Atmosphere warms ⟶ sea ice melts ⟶ more sunlight allows phytoplankton to photosynthesise more in oceans ⟶ CO_2 removed from atmosphere ⟶ limits atmospheric warming. ⬭

C Sea ice melts ⟶ darker surfaces exposed ⟶ less solar radiation reflected ⟶ more insolation absorbed ⟶ temperatures rise ⟶ more melting. ⬭

D Temperatures rise ⟶ increased evaporation of water ⟶ increased cloud formation ⟶ more precipitation falls as snow ⟶ snow reflects incoming solar radiation ⟶ less warming. ⬭

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0 3 . 3 Outline features of an outwash plain.

[3 marks]

Question 3 continues on the next page

Figure 5 shows the total population and average age of people in districts in regions of Alaska in 2019.
Figure 6 shows the predicted total population and predicted average age of people in the same districts in 2045.

Figure 5

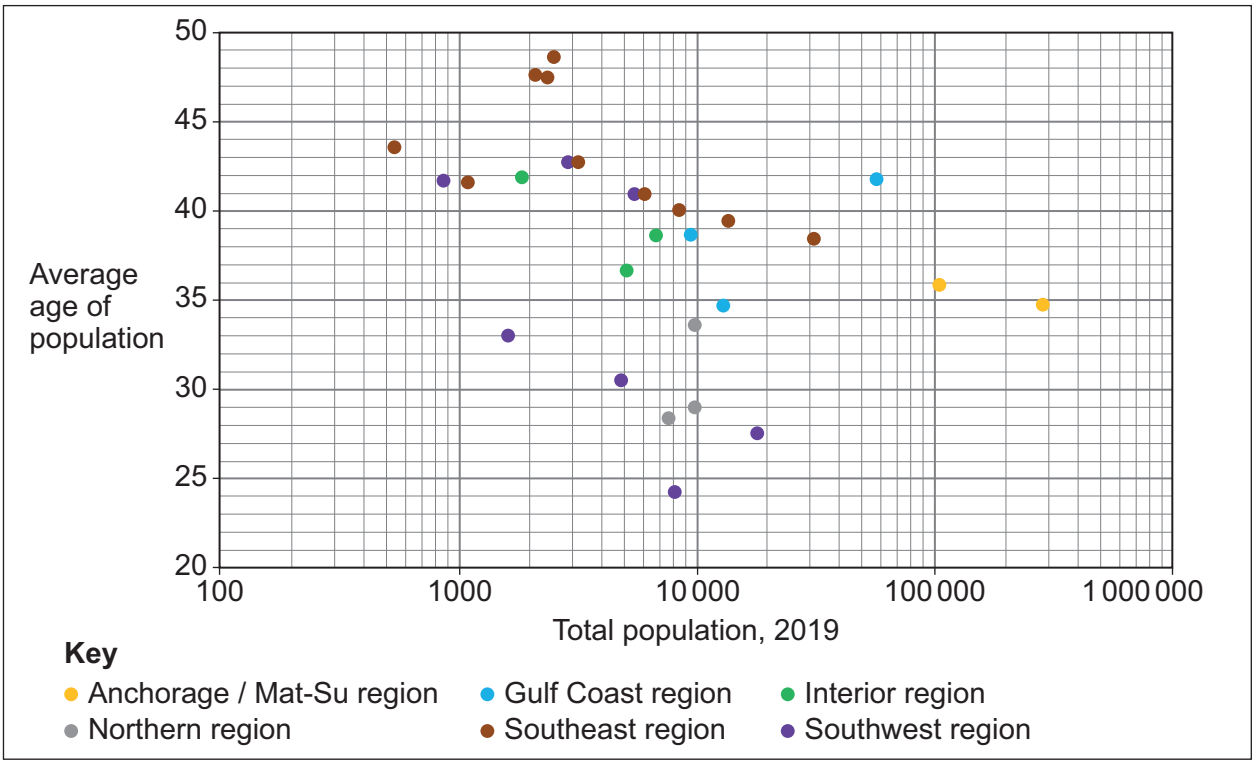
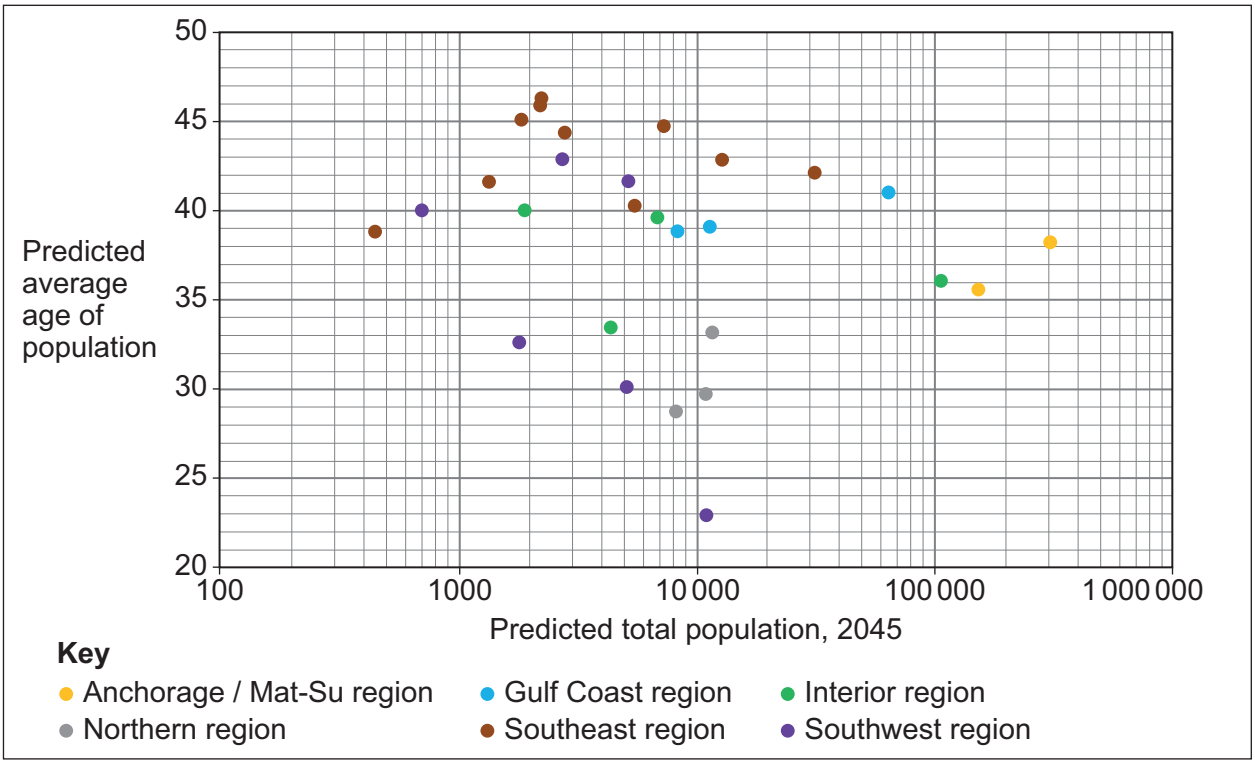


Figure 6



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0 3 . 4 Analyse the data shown in **Figure 5** and **Figure 6**.

[6 marks]

Question 3 continues on the next page

Do not write outside the box

0 3 . 5 Assess the extent to which people will be able to successfully adapt to the risks they face in the future in a glaciated landscape beyond the UK that you have studied.

[9 marks]

Do not write outside the box

0 3 . 6 ‘The characteristics and distribution of periglacial landscapes will change rapidly in the future.’

To what extent do you agree with this statement?

[20 marks]

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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 summarises the process of slab pull?

[1 mark]

A A driving force of plate movement generated at mid-ocean ridges. Newly formed crust cools, becomes denser and so moves away from the centre of the ridge. ⬭

B A driving force of plate movement generated at a subduction zone as an old, cold dense plate sinks into the mantle beneath. ⬭

C Forces generated at conservative plate margins as one plate drags past another. ⬭

D Warm convection currents within the mantle act like a conveyor belt, driving and carrying the plates of the lithosphere. ⬭

0 4 . 2 Which of the following describes primary impacts of tropical storms?

[1 mark]

A Children's education and well-being suffer as infrastructure such as schools need to be re-built. ⬭

B Death and injury due to flying debris, fallen power lines and storm surges. ⬭

C Future food security is reduced as farmers have to re-plant crops and food prices increase due to scarcity. ⬭

D Insurance costs increase and residents are unable to return home for many months. ⬭

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0 4 . 3 Summarise the formation of rift valleys.

[3 marks]

Question 4 continues on the next page

Figure 7 shows the number of people affected by different natural hazards globally between 2000 and 2019.
Figure 8 shows the number of deaths from different natural hazards globally between 2000 and 2019.

Figure 7

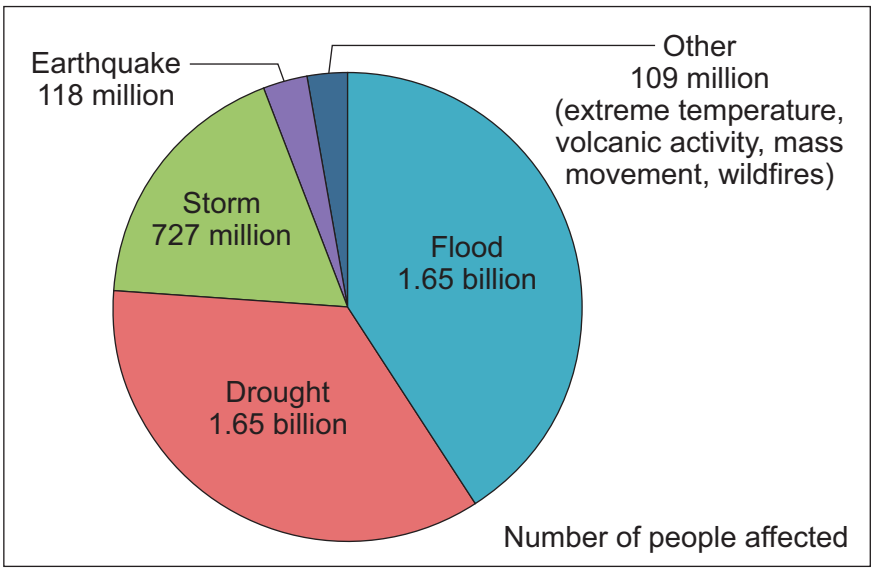
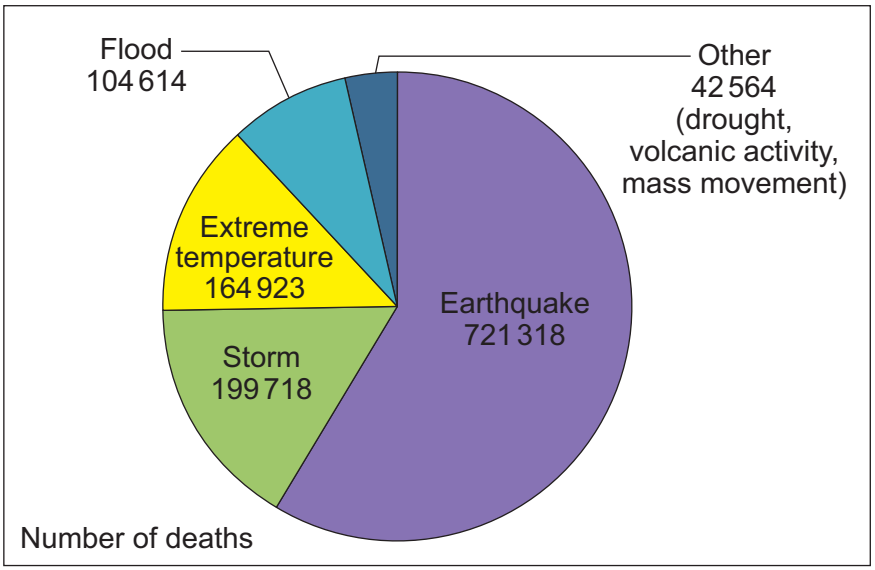


Figure 8



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0 4 . 4 Analyse the data shown in **Figure 7** and **Figure 8**.

[6 marks]

Question 4 continues on the next page

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0 4 . 5 Assess the extent to which the frequency and magnitude of volcanic activity is more predictable at some plate margins than others.

[9 marks]

Do not write outside the box

0 4 . 6 ‘Earthquakes have a greater impact on the human characteristics of place than the physical characteristics of place.’

With reference to a recent seismic event you have studied, how far do you agree with the statement above?

[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 is a cause of the rise of the service economy?

[1 mark]

A Increased energy consumption in urban areas leads to increased demand for fossil fuel extraction. ⬭

B Increasing wealth in urban areas increases demand for leisure and retail facilities. ⬭

C Population growth in urban areas increases demand on agriculture in the surrounding countryside. ⬭

D Rapid urbanisation increases the demand for concrete and steel production. ⬭

0 5 . 2 Which of the following are features of fortress developments?

[1 mark]

A Spaces in urban areas that have become the focus of the production and consumption of culture. ⬭

B Self-contained urban areas found beyond the edge of existing cities, developing as cities in their own right. ⬭

C Urban spaces designed around security, protection, surveillance and exclusion. ⬭

D Urban spaces where properties have been renovated and improved by wealthy individuals, forcing out less affluent residents. ⬭

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0 5 . 3 Summarise the causes of social segregation in urban areas.

[3 marks]

Question 5 continues on the next page

Figure 9 and **Figure 10** show populations in those urban areas in different regions of the world that, by the year 2000, had populations over 300 000.

Figure 9 shows total populations living in those urban areas in 1950.

Figure 10 shows total populations living in the same urban areas in 2020.

Figure 9

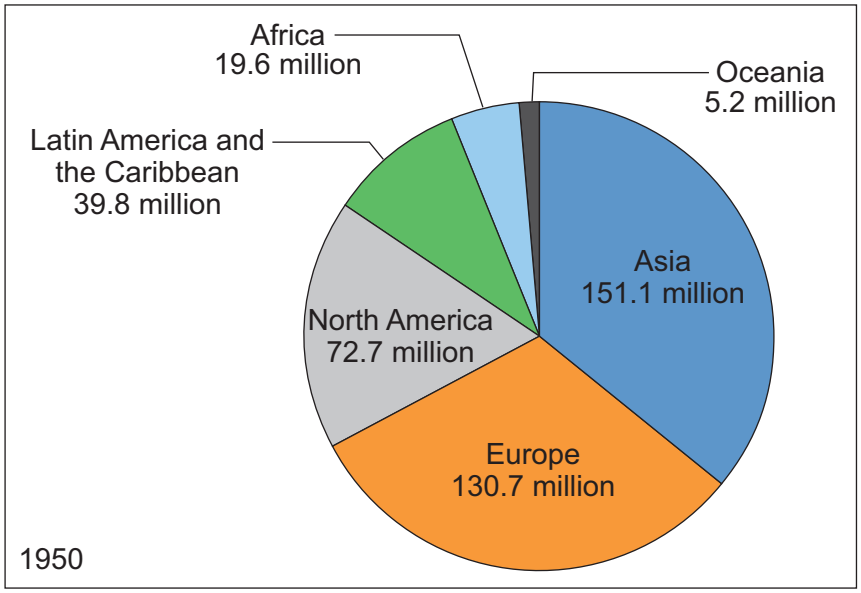
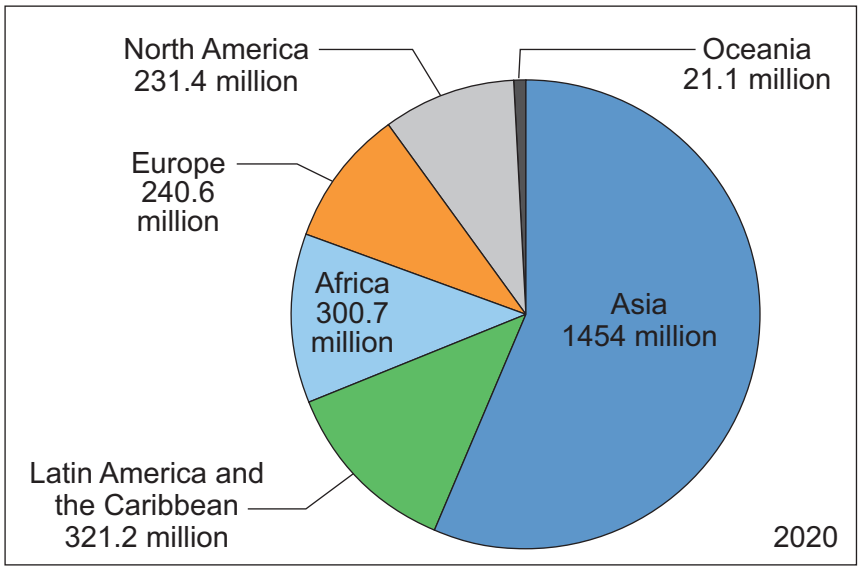


Figure 10



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0 5 . 4 Analyse the data shown in **Figure 9** and **Figure 10**.

[6 marks]

Question 5 continues on the next page

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0 5 . 5 Assess the extent to which incineration is a more sustainable approach to waste management than landfill.

[9 marks]

Do not write outside the box

0 5 . 6 ‘Counter-urbanisation affects the human characteristics of place more than the physical characteristics of place.’

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

[20 marks]

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END OF QUESTIONS

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