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7753766474

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 Theory **May/June 2022**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages. Any blank pages are indicated.

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[Turn over

Section A

1 The photograph shows a bund.



(a) Use the photograph to explain why some farmers use bunds.

.....

.....

.....

..... [2]

(b) Describe how the bund in the photograph is constructed.

.....

..... [1]

(c) Suggest **one** disadvantage of bunds.

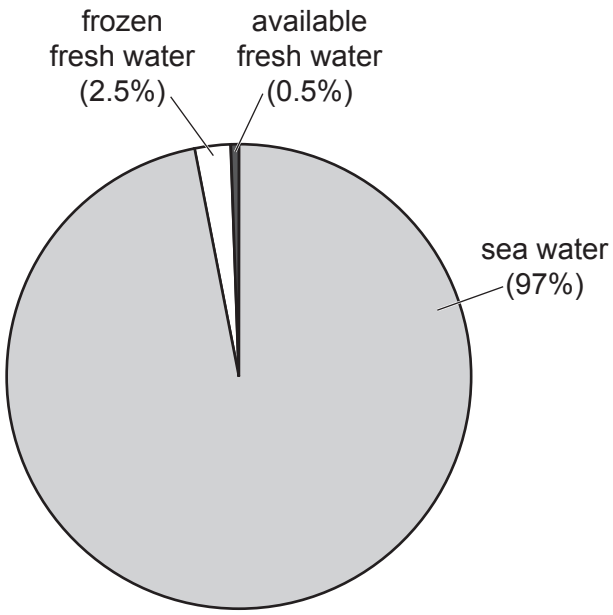
.....

..... [1]

[Total: 4]

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2 The pie chart represents all the water on Earth.



(a) Use the pie chart to calculate the total percentage of fresh water on Earth.

..... % [1]

(b) State **two** sources of fresh water.

1 .....

2 .....
[2]

(c) Suggest how the availability of fresh water may change as the population of the world increases.

.....

.....

.....

.....

.....

..... [3]

[Total: 6]

3 The photograph shows a boom being used to deal with an oil spill.



(a) Use the photograph to describe how the boom is used to deal with the oil spill.

.....

.....

.....

..... [2]

(b) State **two** other methods of dealing with oil spills.

1 .....

2 .....

[2]

(c) State **one** impact of oil spills on birds.

..... [1]

[Total: 5]

4 **(a)** Complete the description of the formation of sedimentary rocks using words from the list.

Each word may be used once, more than once or not at all.

crystallisation	**deposition**	**erosion**
sedimentation	**transportation**	**weathering**

Water in streams and rivers carries small particles of rock and sand. This process is called ..... .

Eventually, the particles reach a lake or the sea, and they sink to the bottom. This process is called ..... .

Over time, the particles build up in layers. The bottom layers are compressed, and the particles stick together to form rock. This process is called ..... .

[3]

(b) State the name of **one** sedimentary rock.

..... [1]

(c) State **one** characteristic of a sedimentary rock.

..... [1]

[Total: 5]

Section B

5 The oceans are a valuable resource. They can be used to generate electricity and to provide food.

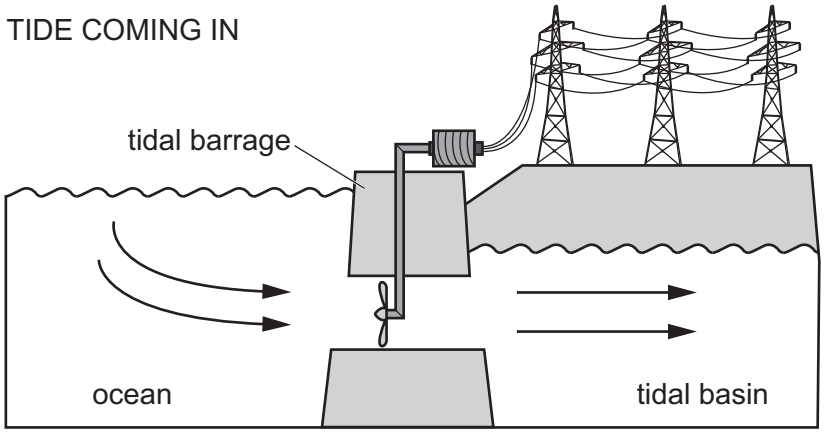
(a) State **two** other ways the oceans are a valuable resource.

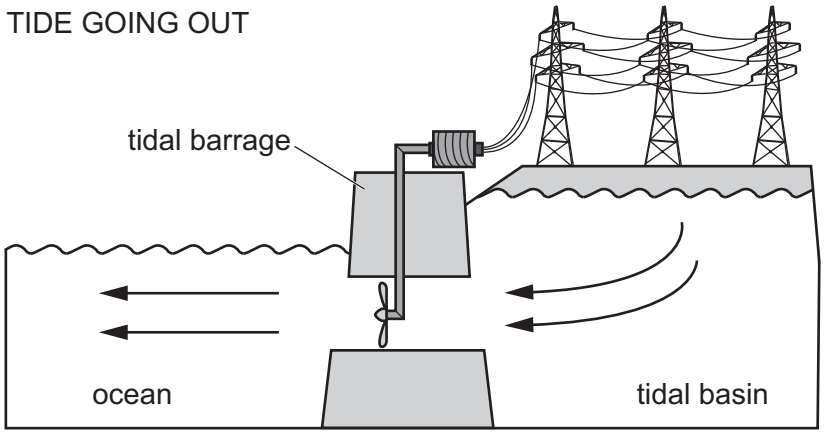
1 .....

2 .....

[2]

(b) The diagrams show how a tidal barrage is used to generate electricity.





Use the diagrams to describe how a tidal barrage is used to generate electricity.

.....

.....

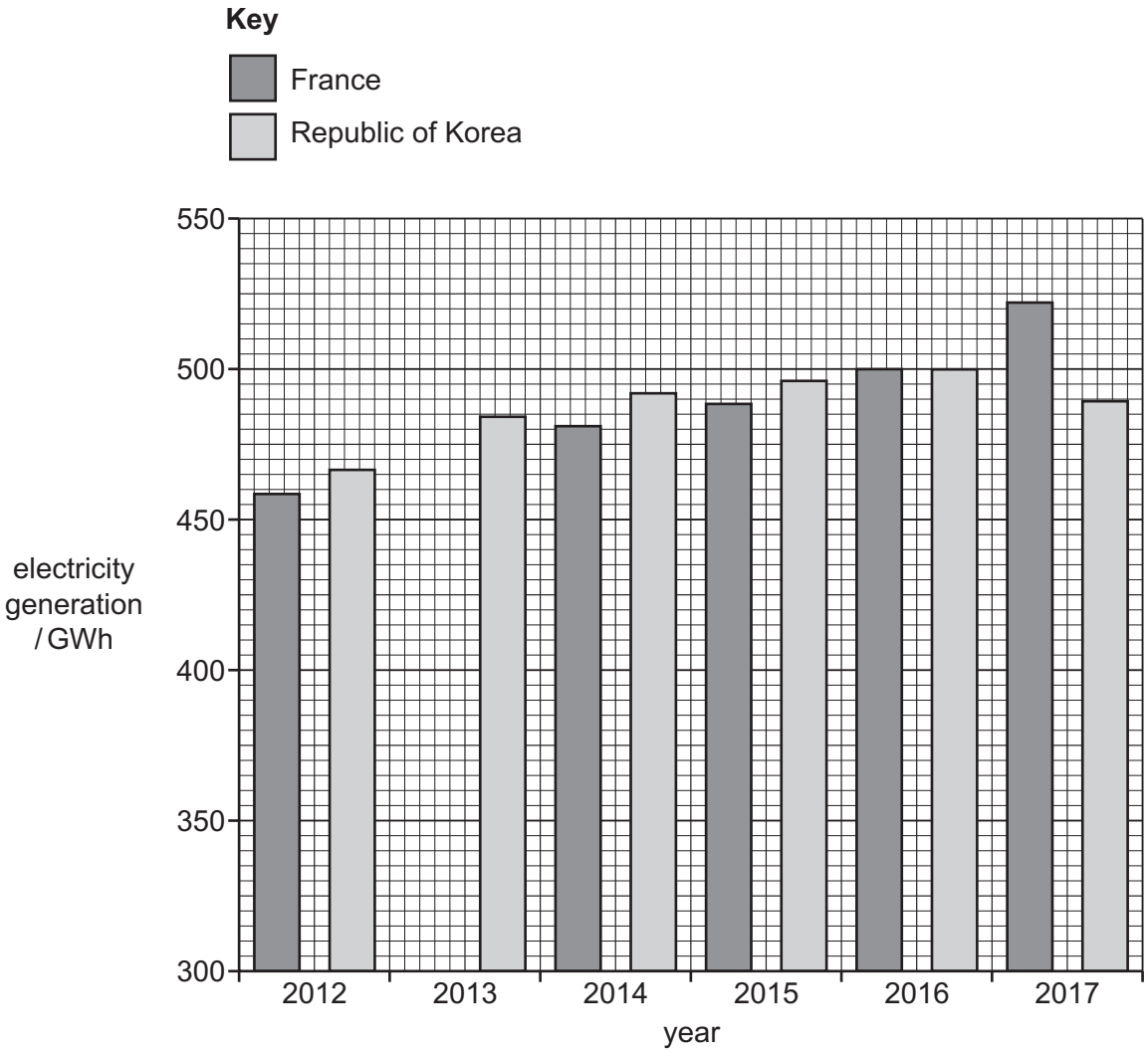
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..... [3]

(c) The bar chart shows the amount of electricity (GWh) generated by tidal power stations in France and the Republic of Korea from 2012 to 2017.



(i) Complete the bar chart to show that France generated 410 GWh of electricity in 2013. [1]

(ii) State which year France generated more electricity than the Republic of Korea.

..... [1]

(d) **(i)** Tidal power is a renewable source of energy.

State **one** other benefit of tidal power generation.

..... [1]

(ii) Describe **one** environmental impact of tidal power generation.

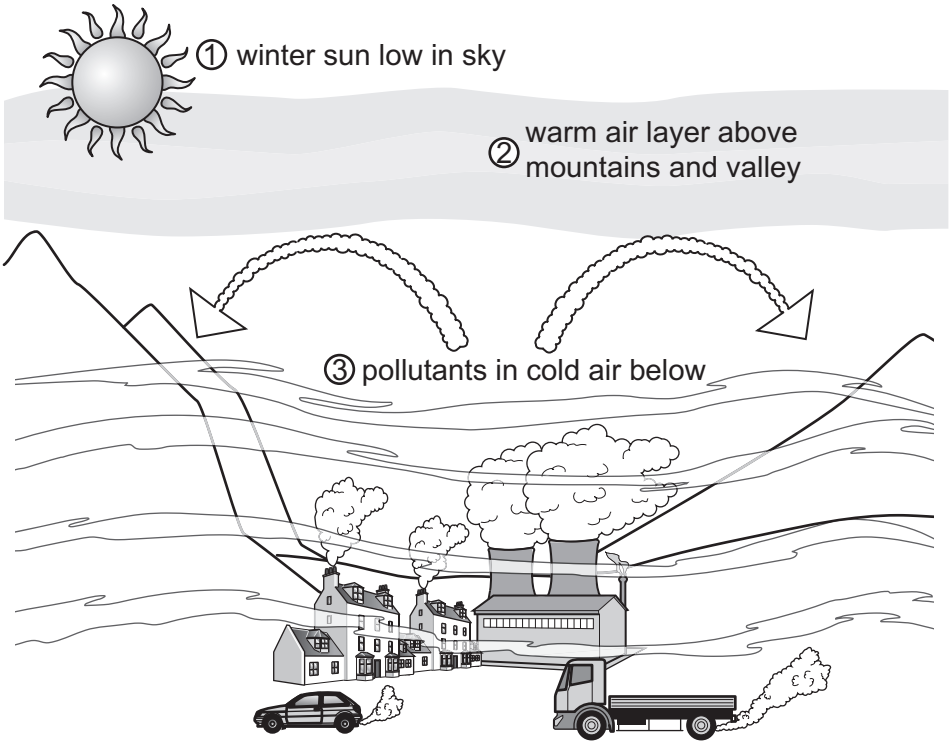
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..... [2]

[Total: 10]

6 **(a)** The diagram shows features that may lead to the formation of smog.



(i) Use the diagram to describe how the features shown may lead to the formation of smog.

.....

.....

.....

.....

.....

..... [3]

(ii) State the names of **two** pollutants that form smog.

1 .....

2 .....

[2]

(b) Describe transport policies that governments can use to reduce atmospheric pollution in cities.

.....

.....

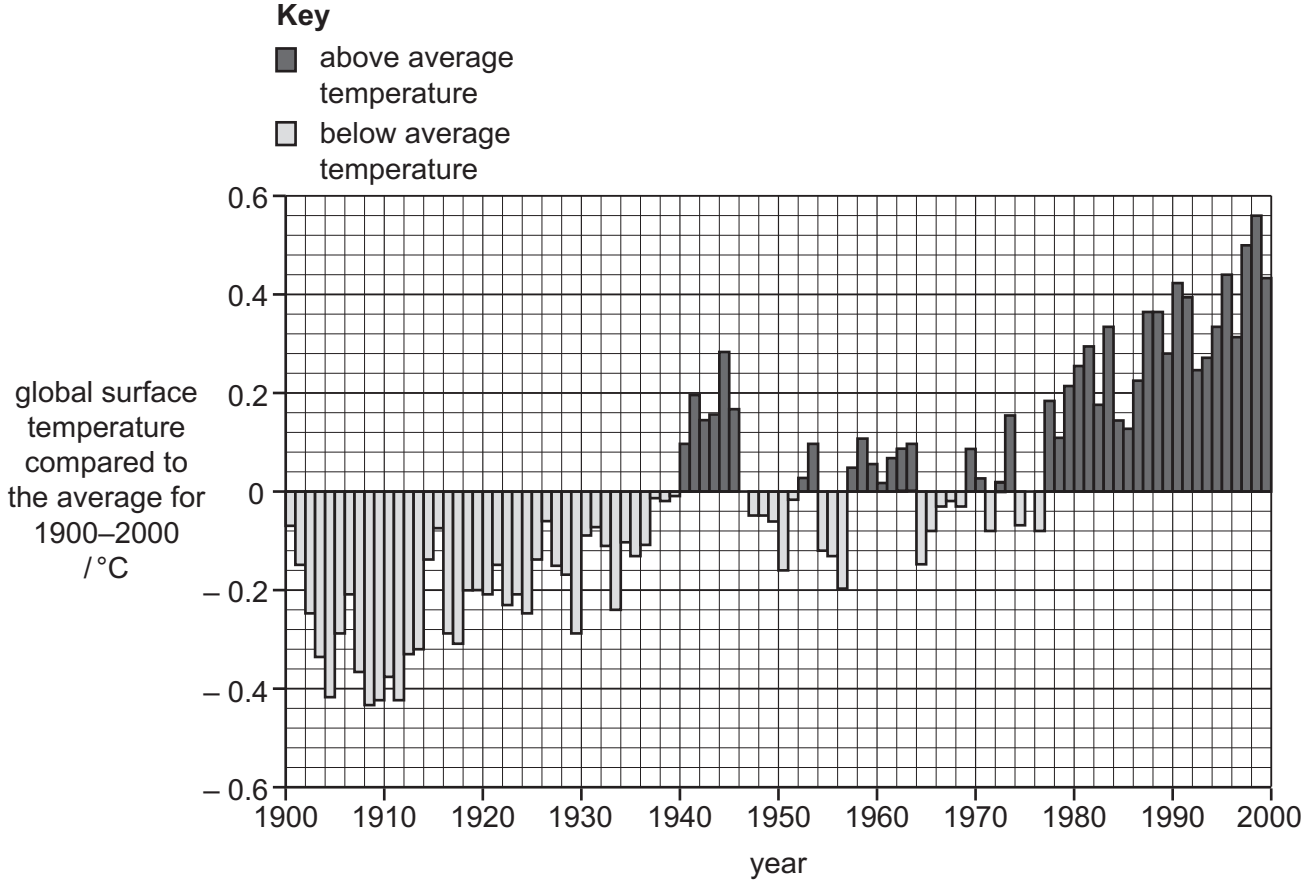
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..... [3]

(c) The bar chart shows annual variations in global surface temperatures compared to the average global surface temperature for 1900–2000.



(i) State the highest temperature above average shown on the bar chart.

..... °C [1]

(ii) Use the bar chart to describe the trends in global surface temperatures for 1900–2000.

.....

.....

.....

.....

.....

..... [3]

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(iii) Between 2000 and 2020, global surface temperatures increased.

Suggest the future impact on agriculture if global surface temperatures continue to increase.

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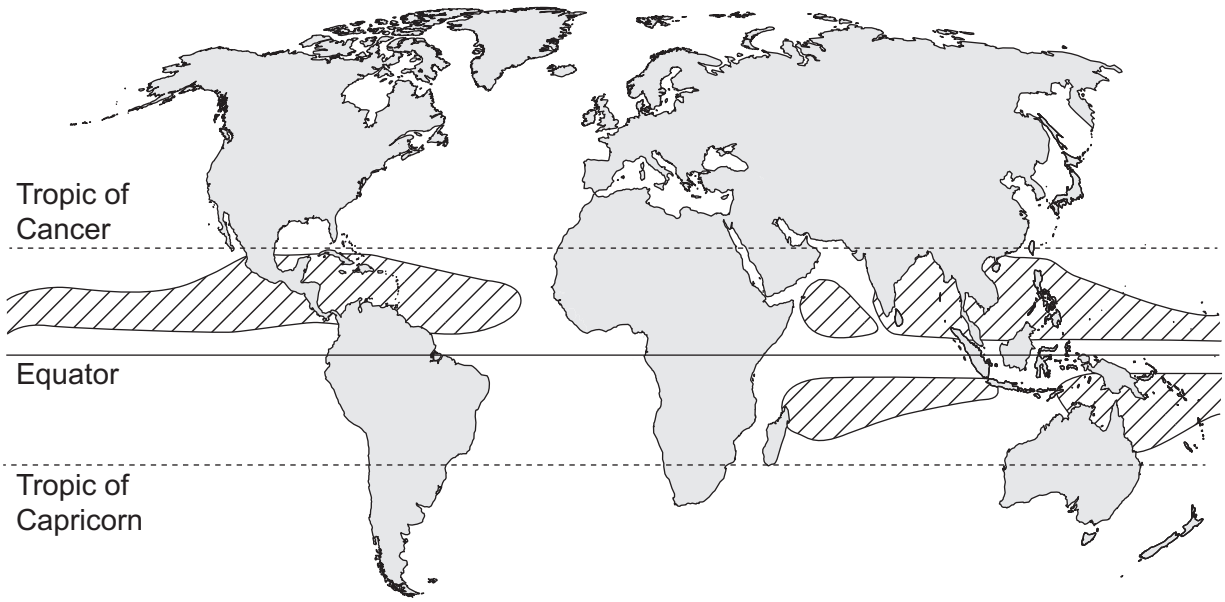
..... [4]

[Total: 16]

7 The world map shows areas where tropical cyclones form.

Key

areas where tropical cyclones form



(a) (i) Describe the distribution of areas where tropical cyclones form shown on the map.

.....

.....

.....

.....

.....

..... [3]

(ii) State **two** ocean conditions required for tropical cyclones to form.

1 .....

2 .....

[2]

(b) The table shows data on the number of tropical cyclones recorded in the 2018–2019 South Pacific cyclone season.

The tropical cyclones are classified in categories. The category depends on the maximum wind speed of the tropical cyclone.

category	maximum wind speed / km per hour	number of tropical cyclones recorded
1	119–153	2
2	154–177	2
3	178–208	1
4	209–251	1
5	>251	0

Calculate the percentage of tropical cyclones recorded with wind speeds greater than 177 km per hour.

..... % [2]

(c) (i) State **three** impacts of a tropical cyclone.

1 .....

2 .....

3 .....

[3]

(ii) Describe strategies for managing the impacts of a tropical cyclone.

.....

.....

.....

.....

.....

..... [3]

[Total: 13]

8 A student reads a blog about extractive reserves in the Amazon rainforest of Brazil.

> Extractive reserves in Brazil are protected areas of the Amazon rainforest. Local tribes and communities are given the right to use the land for subsistence farming and traditional practices. Other people are not allowed to access the land without permission.
>
> The idea of extractive reserves came from environmentalists, who wanted to help conserve the Amazon rainforest and ensure sustainable use of natural resources.
>
> The first reserve was established in 1983 and covered an area of 2 845 km^2. More reserves were created in 1990 to add an extra area of 21 630 km^2. An additional area of 22 008 km^2 was established in 1992. In 1997, a further eleven reserves were created, adding 25 108 km^2.

(a) (i) Present the data from the blog in a suitable table to show the total area (cumulative) of extractive reserves in Brazil in each of the years listed.

[3]

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(ii) Suggest ways that extractive reserves benefit local tribes and communities.

.....

.....

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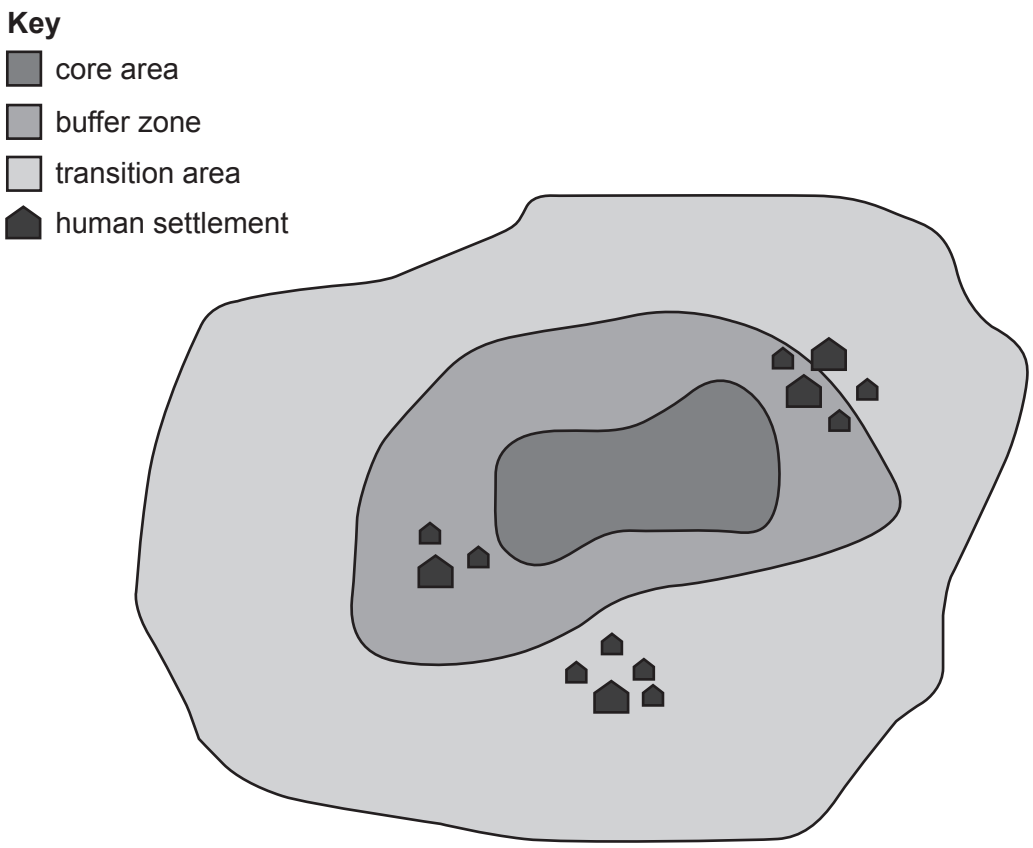
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..... [3]

(b) Biosphere reserves are similar to extractive reserves.

Biosphere reserves have three main zones: the core area, the buffer zone and the transition area.



Explain the functions of the three main zones of a biosphere reserve.

.....

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.....

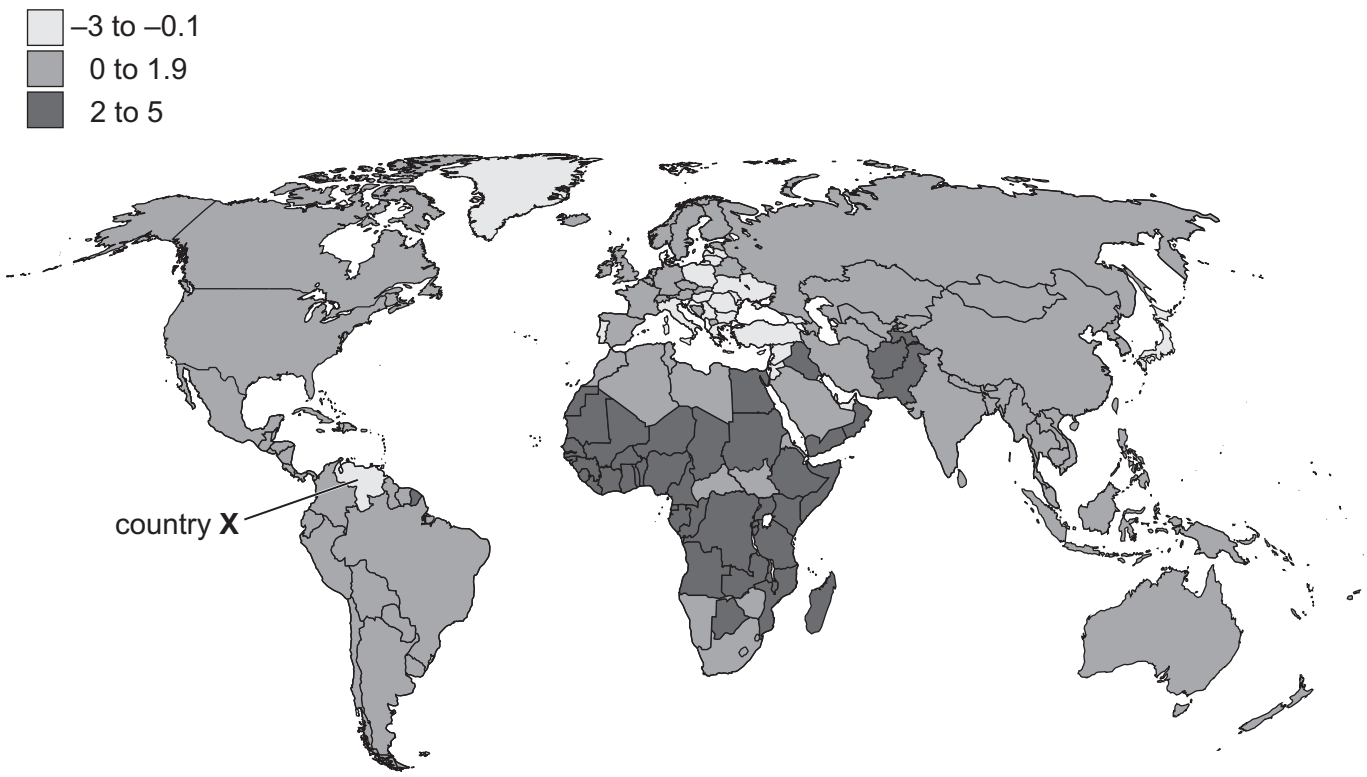
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..... [3]

[Total: 9]

9 **(a)** The world map shows the average annual percentage population growth rate by country for 2015–2020.



(i) State the name of the **continent** with the highest average annual percentage population growth rate for 2015–2020.

..... [1]

(ii) Use the map to explain how the population of country **X** changed in 2020.

.....

.....

.....

..... [2]

(b) Suggest **one** reason why birth rates are often low in more economically developed countries (MEDCs).

.....

..... [1]

(c) The population of a country can decrease because of migration.

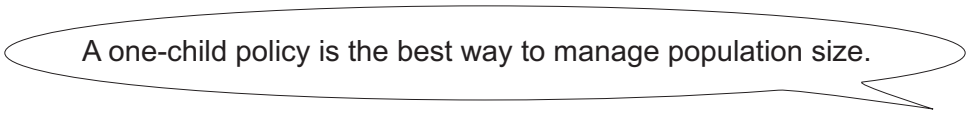
State **two** reasons why people migrate.

1 .....

2 .....

[2]

(d) A student says:



To what extent do you agree with this statement? Give reasons for your answer.

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..... [6]

[Total: 12]

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