Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

O2892288 61

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 Theory **May/June 2021**

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

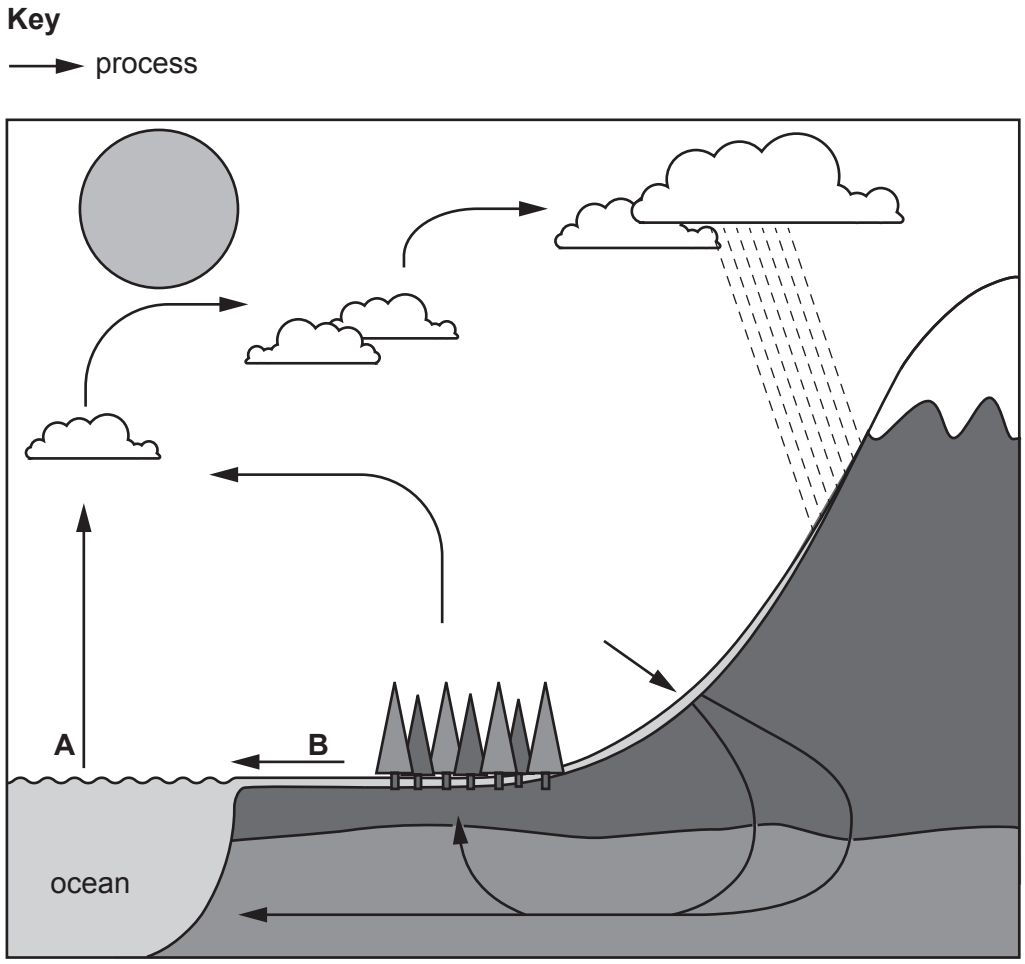
- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

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

© UCLES 2021

Section A

1 The diagram shows part of the water cycle.



(a) State the names of processes **A** and **B**.

A .....

B .....

[2]

(b) Some countries with large stores of fresh water **cannot** supply enough drinking water to their populations.

Suggest reasons why.

.....

.....

.....

.....

.....

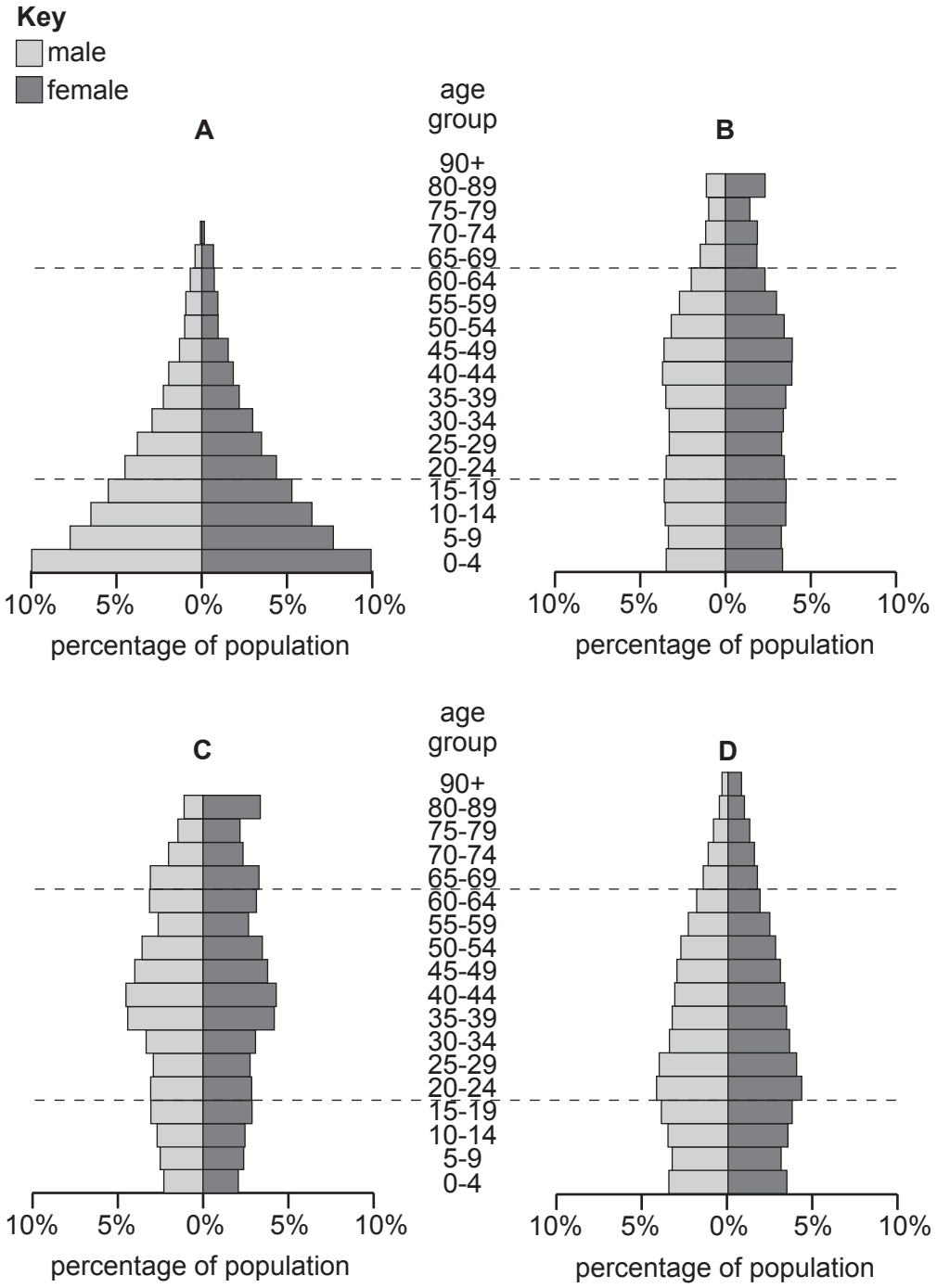
..... [3]

[Total: 5]

© UCLES 2021

BLANK PAGE

2 The diagram shows four population pyramids.



(a) State which population pyramid is **most** likely to represent a less economically developed country (LEDC). Give a reason for your answer.

population pyramid .....

reason .....

.....

[2]

(b) Suggest ways a low birth rate affects a country over time.

.....

.....

.....

..... [2]

(c) State **one** pronatalist policy that can be introduced by a country.

.....

..... [1]

(d) State **two** reasons for a sudden change in the population of a country.

1 .....

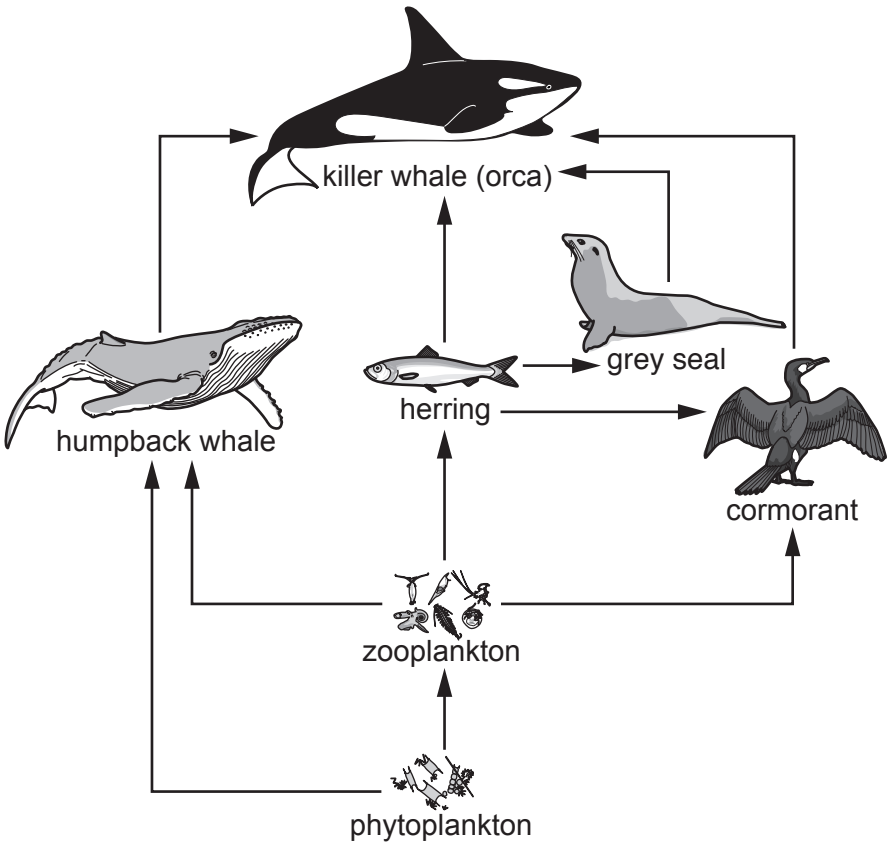
.....

2 .....

..... [2]

[Total: 7]

3 The diagram shows part of a food web in a marine ecosystem.



(a) (i) Complete the food chain using the diagram.

..... ⟶ ..... ⟶ cormorant ⟶ .....

[2]

(ii) Explain how overfishing of herring might affect the population of killer whales.

.....

.....

.....

..... [2]

(b) Explain **two** strategies to prevent overfishing.

strategy 1 .....

explanation .....

.....

strategy 2 .....

explanation .....

.....

[4]

[Total: 8]

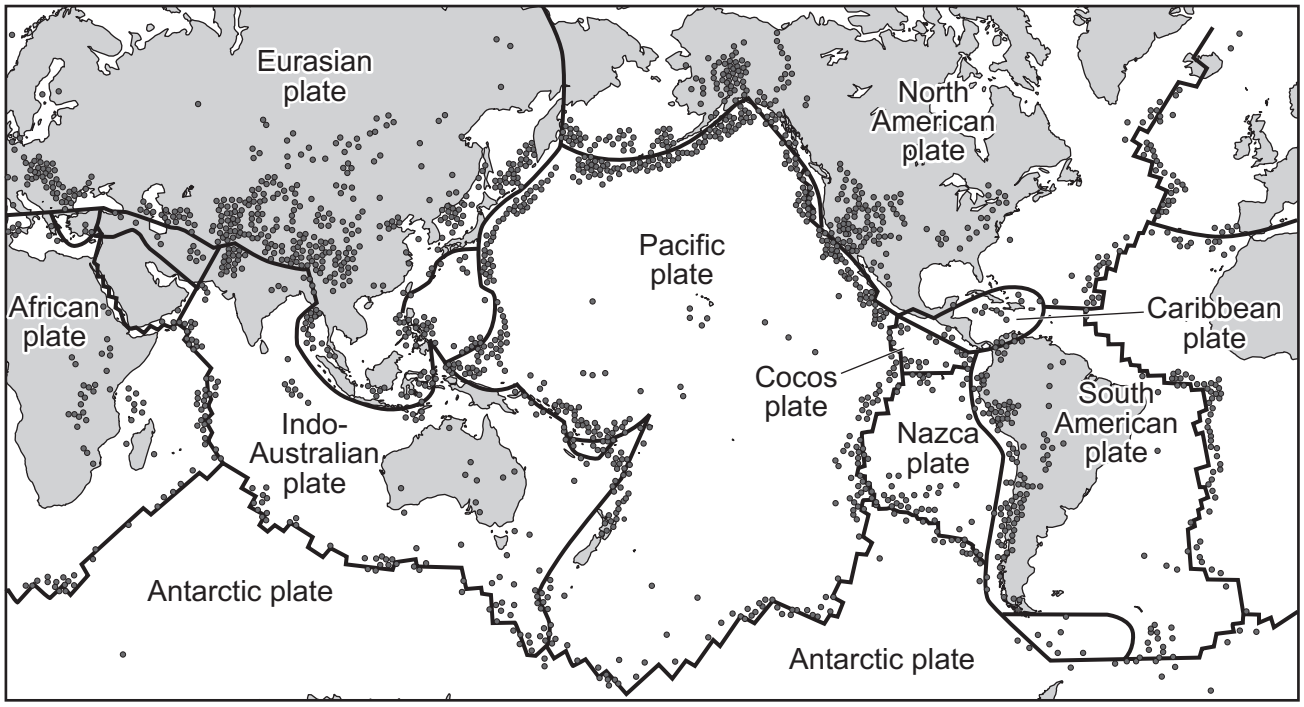
Section B

4 The map shows the location of plate boundaries and earthquake zones around the world.

Key

plate boundary

earthquake zone



(a) Describe the distribution of earthquake zones shown on the map.

.....

.....

.....

.....

.....

..... [3]

(b) Describe how an earthquake occurs at a destructive (convergent) plate boundary.

.....

.....

.....

.....

.....

..... [3]

© UCLES 2021

(c) (i) Describe how the structure of modern buildings can reduce the risk of death from earthquakes.

.....

.....

.....

.....

.....

..... [3]

(ii) Often, more people die in the weeks following an earthquake than during the earthquake itself.

Suggest reasons why.

.....

.....

.....

.....

.....

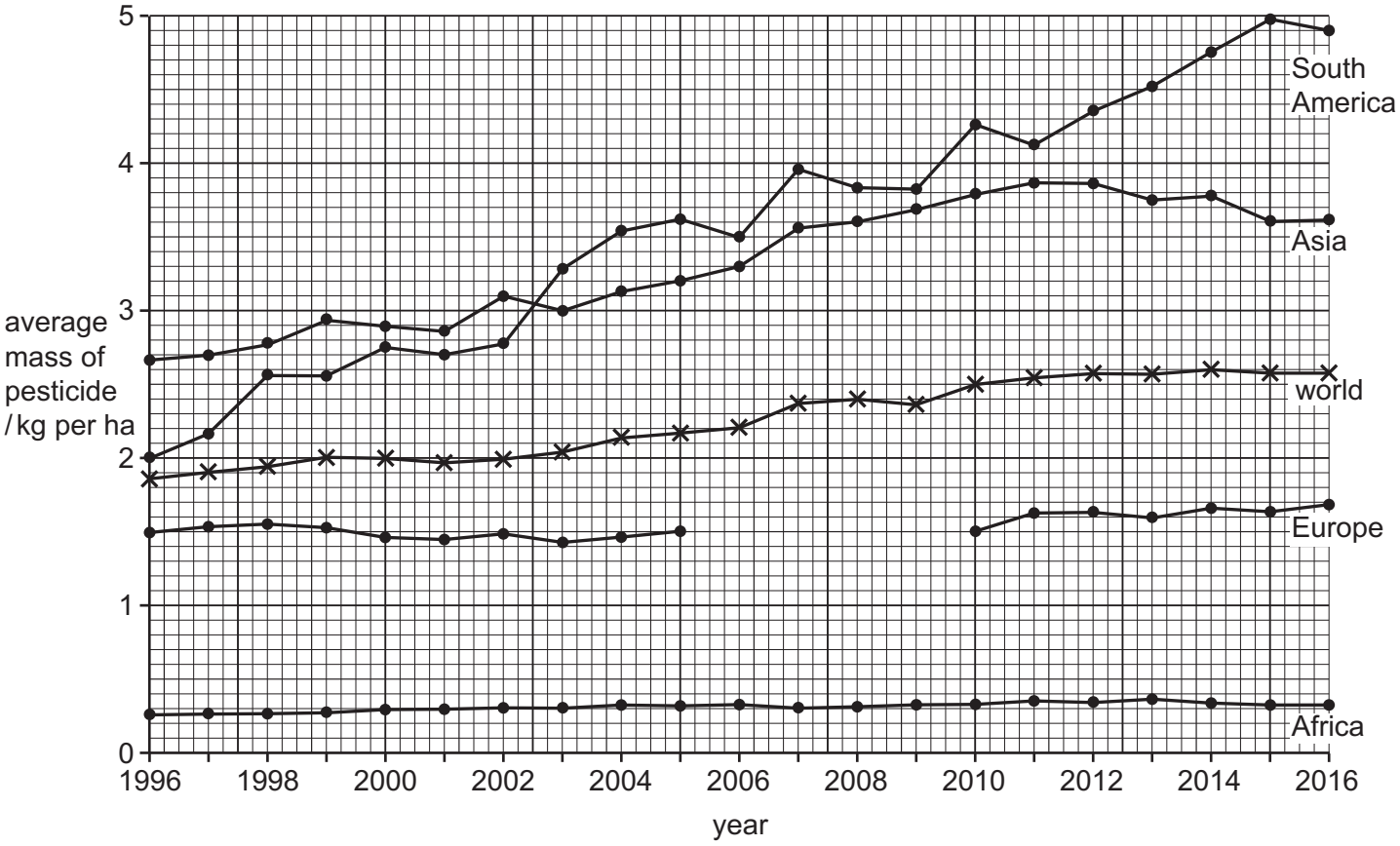
.....

.....

..... [4]

[Total: 13]

5 **(a)** The graph shows the average mass of pesticide used in agriculture from 1996 to 2016 in four continents and the world.



(i) Complete the graph for Europe using the data in the table.

year	average mass of pesticide used in agriculture in Europe / kg per ha
2006	1.4
2007	1.5
2008	1.6
2009	1.4

[2]

(ii) Describe the trends in pesticide use in Asia between 1996 and 2016.

.....

.....

.....

..... [2]

(iii) Calculate the percentage change in pesticide use in South America between 1996 and 2016.

.....% [2]

(b) State the benefits of using pesticides in agriculture.

.....

.....

.....

.....

.....

..... [3]

(c) Suggest **two** alternatives to using pesticides to control pests on crops.

1 .....

.....

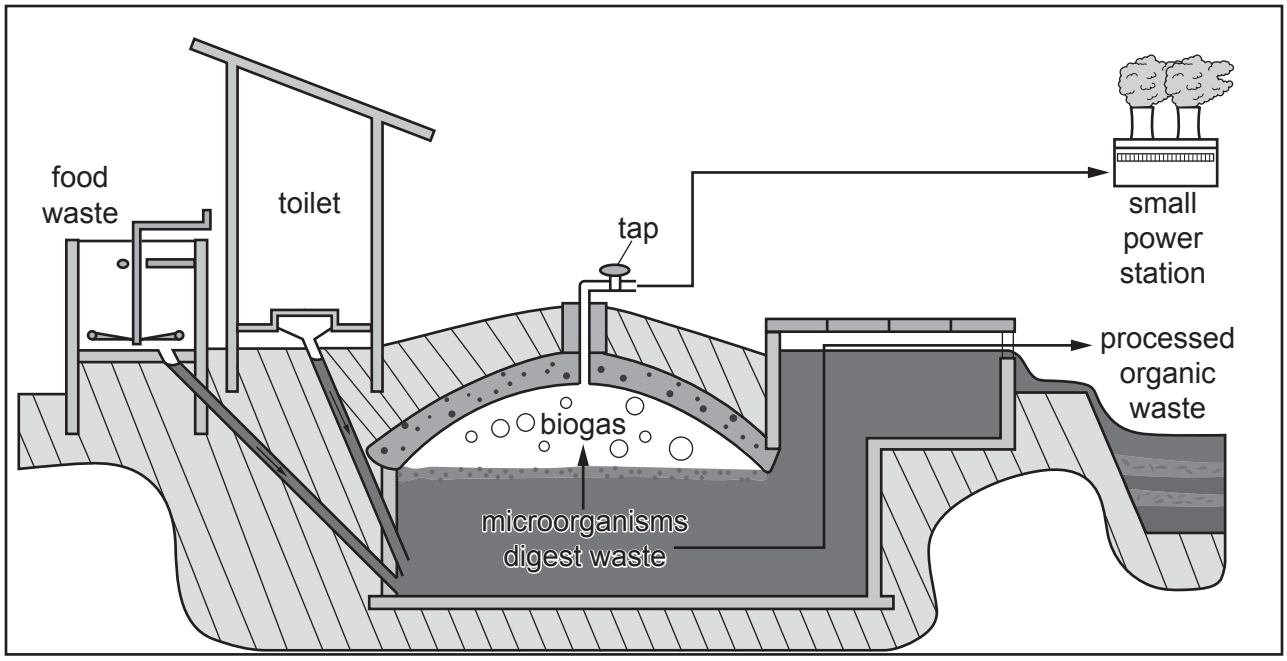
2 .....

..... [2]

[Total: 11]

BLANK PAGE

6 The diagram shows an 'anaerobic digester'. The anaerobic digester is used to produce biogas from food waste and human waste.



(a) Describe how this anaerobic digester is used to generate electricity.

Use the diagram to support your answer.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) State **one** way the processed organic waste can be used by the local population.

.....

..... [1]

(c) The anaerobic digester uses human waste from toilets.

Suggest how using anaerobic digesters reduces the spread of disease.

.....

.....

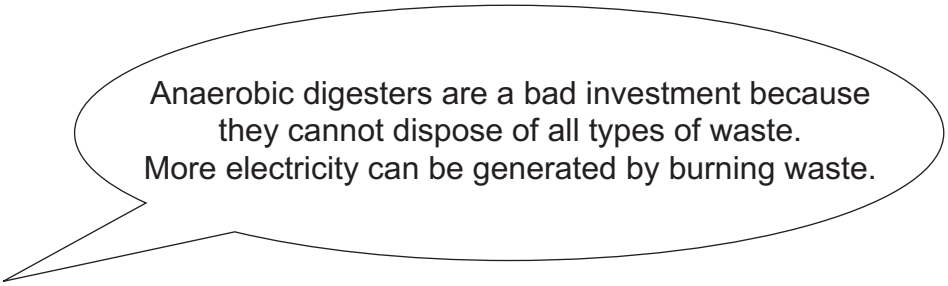
.....

.....

.....

..... [3]

(d) A student says:



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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

[Total: 14]

7 The newspaper article describes the impact of flooding in Iran in 2019.

Severe flooding in Iran

In March and April 2019, flooding affected large parts of Iran: 25 of Iran's 31 provinces were affected and at least 70 people died. One province received 70% of its average annual rainfall in one day.

Several large dams overflowed, and many people were evacuated. Over 1900 cities and villages across the country were damaged by floods.

Experts blamed the severity of the floods on an increase in the amount of building in Iran and a lack of proper drainage systems.

One climate scientist said, 'Heavy rainfall and flooding will not solve the problems caused by 10 years of drought.'

(a) (i) Give **two** reasons why this severe flooding occurred in Iran.

.....

.....

.....

..... [2]

(ii) Calculate the percentage of Iran's provinces affected by flooding.

..... % [1]

(b) (i) Describe strategies for managing the impacts of flooding.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(ii) The malaria parasite is spread by mosquitoes.

State how flooding might impact the spread of malaria.

Give a reason for your answer.

.....

..... [1]

(c) Suggest why the heavy rainfall and flooding will **not** solve the problems caused by 10 years of drought in Iran.

.....

.....

.....

.....

.....

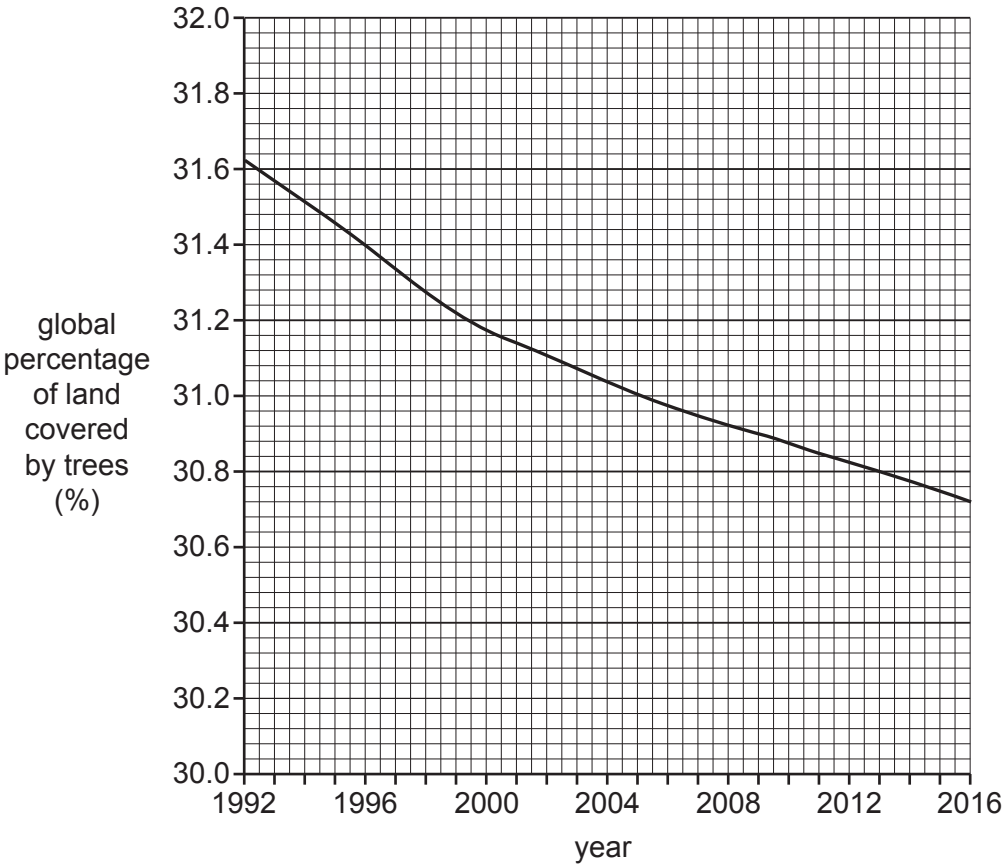
.....

.....

..... [4]

[Total: 12]

8 The graph shows the global percentage of land covered by trees from 1992 to 2016.



(a) (i) Describe the trend in global percentage of land covered by trees from 1992 to 2016.

.....

.....

.....

..... [2]

(ii) Suggest reasons for this trend.

.....

.....

.....

.....

.....

..... [3]

(b) Describe strategies a country can use to preserve its forests.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

[Total: 10]

BLANK PAGE

The boundaries and names shown, the designations used and the presentation of material on any maps contained in this question paper/insert do not imply official endorsement or acceptance by Cambridge Assessment International Education concerning the legal status of any country, territory, or area or any of its authorities, or of the delimitation of its frontiers or boundaries.

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

© UCLES 2021