Cambridge Assessment International Education

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9804006530

ENVIRONMENTAL MANAGEMENT **0680/11**

Paper 1 Theory **October/November 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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Section A

1 Lithium is an important resource. It is used in the production of rechargeable batteries and electricity storage.

The table shows the annual production of lithium and lithium reserves for some major producing countries.

country	annual production / thousand tonnes	reserves / thousand tonnes
Argentina	3.2	850.0
Australia	9.3	970.0
Canada	0.4	180.0
Chile	12.6	7500.0
China	5.2	3500.0
Portugal	0.8	16.0
Zimbabwe	0.5	23.0

(a) (i) State the country in the table with the lowest annual production of lithium.

..... [1]

(ii) Calculate how many years the reserves in Portugal will last if they are used at the current rate of annual production.

..... years [1]

(iii) Suggest reasons why demand for lithium from Chile may increase in the future.

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..... [2]

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(b) Suggest strategies to make the use of lithium more sustainable.

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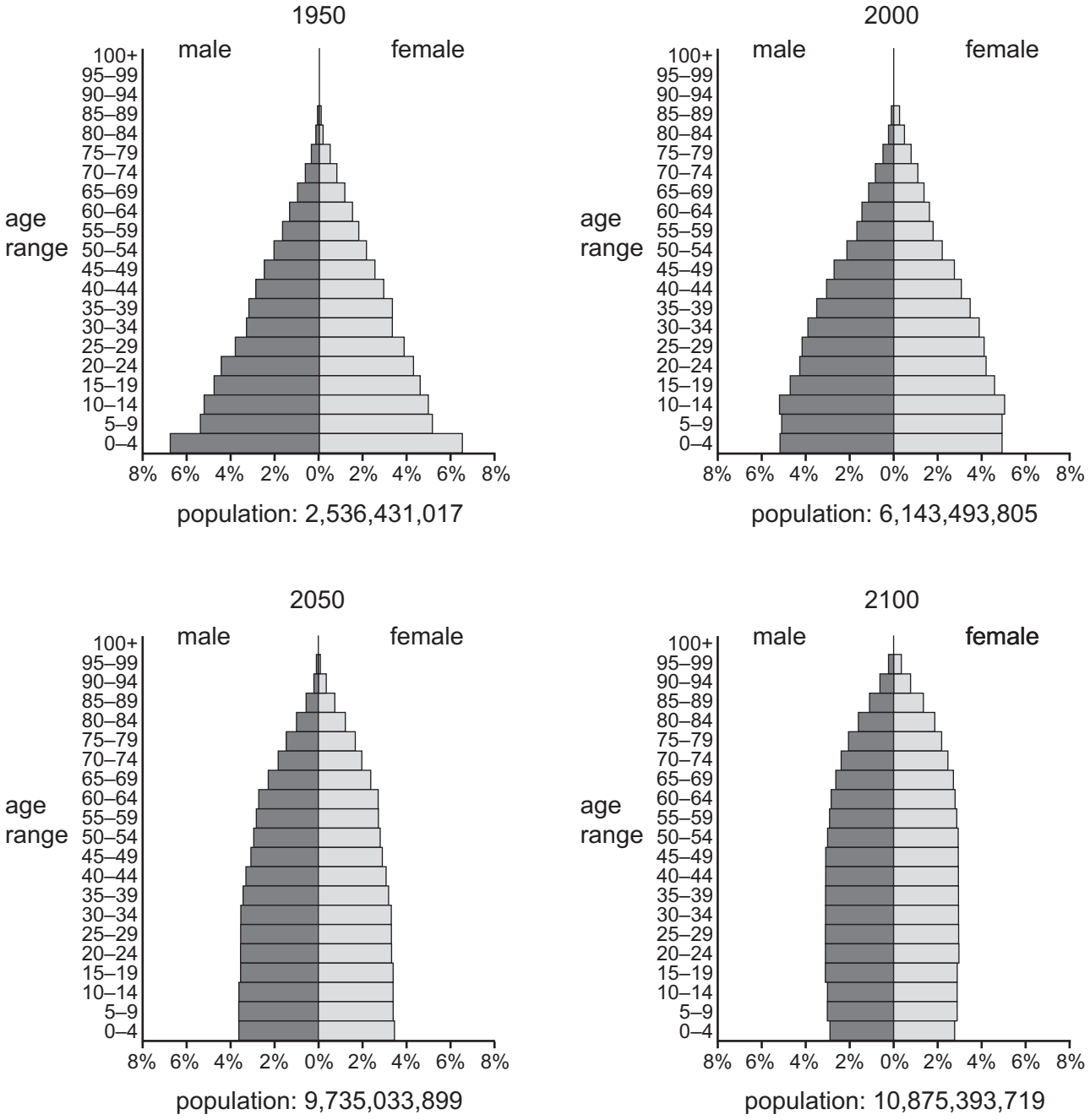
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..... [3]

[Total: 7]

2 The population pyramids show information about the world population in 1950 and 2000 and give predictions for 2050 and 2100.



(a) Calculate the predicted increase in world population from 2000 to 2100.

..... [1]

(b) Describe the trends in age distribution between 1950 and 2100.

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(c) Suggest reasons why the actual population pyramid in 2100 might be different from the predicted population pyramid in 2100.

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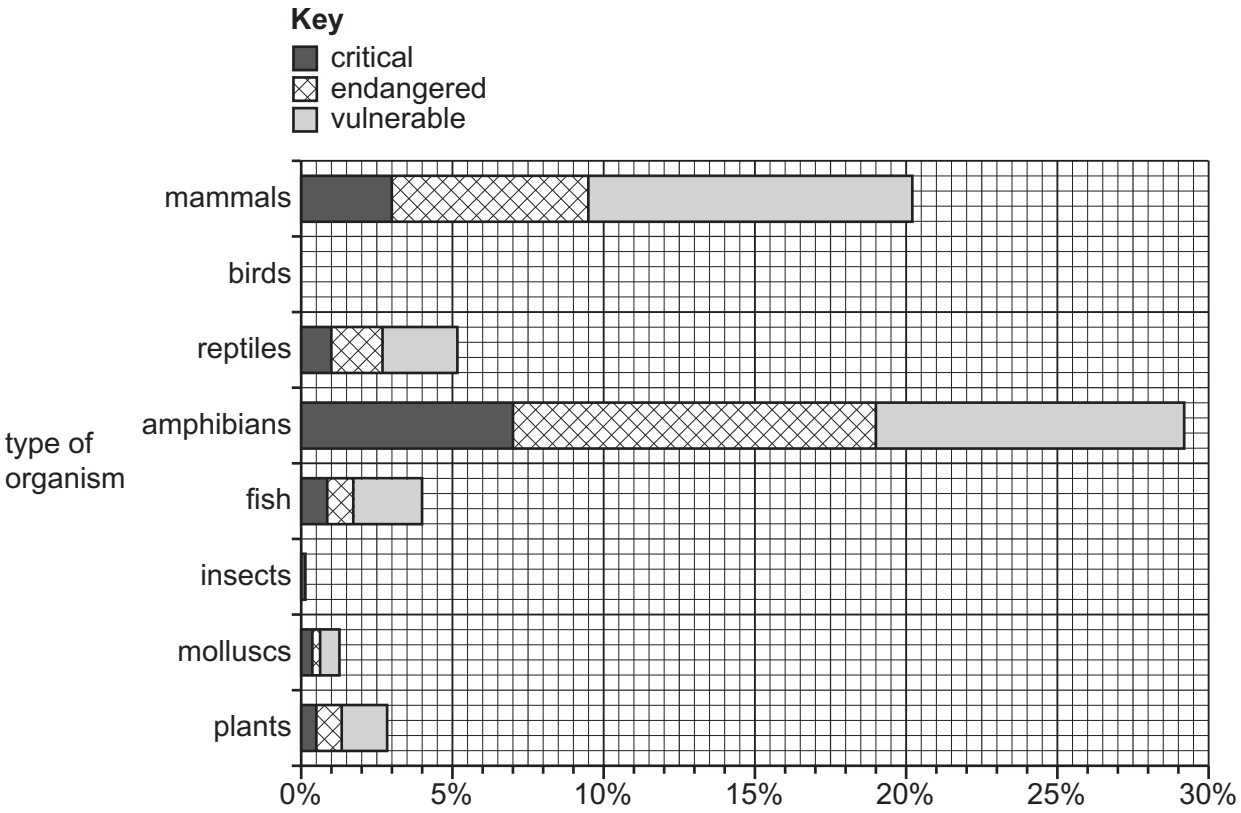
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..... [2]

[Total: 6]

3 Scientists are concerned about the rate of species extinction.

The bar chart shows the percentage of species that are under threat for different types of organism.



(a) (i) Plot the data for birds using the information in the table.

Use the key.

critical	endangered	vulnerable
2.0%	3.5%	7.0%

[4]

(ii) State the percentage of amphibian species that are classified as endangered.

..... % [1]

(b) Scientists in the United Kingdom (UK) are developing a seed bank as part of the conservation of plant species.

(i) Define the term seed bank.

.....

..... [1]

(ii) The UK seed bank will hold 75 000 different species. This is 24% of the world's number of plant species.

Calculate the number of plant species in the world.

..... [1]

[Total: 7]

Section B

4 A newspaper published an article about ocean fishing.

90% of fish stocks are under threat

Ocean fishing at current levels is not sustainable. Scientists have been studying current fishing levels and found that:

- 10% of fish stocks are underfished
- 61% of fish stocks are fully fished
- 29% of fish stocks are overfished.

The scientists are concerned that current levels of fishing will cause the extinction of fish species and affect biodiversity.

The scientists want governments to introduce greater controls on the amount of fish caught annually.

(a) Use the information in the article to complete the pie chart about fish stocks.

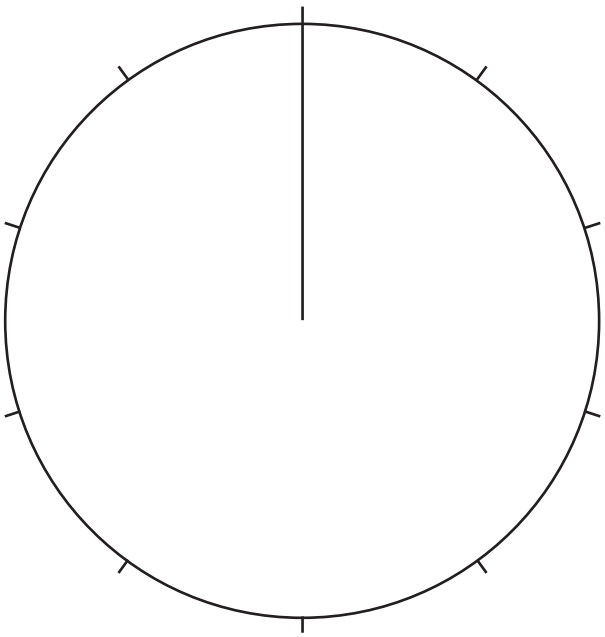
Complete the key.

Key

☐ .....

☐ .....

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[3]

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(b) Explain why the extinction of fish species will affect biodiversity of oceans.

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..... [3]

(c) **(i)** Describe strategies that governments can use to make fishing sustainable.

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..... [3]

(ii) Explain why international cooperation is needed to maintain fish stocks.

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..... [3]

[Total: 12]

5 **(a)** Use the list of words to complete the table of renewable and non-renewable energy resources.

biofuel **coal** **hydroelectric**

petroleum **solar** **uranium** **wind**

renewable	non-renewable

[3]

(b) **(i)** Describe strategies for reducing the use of energy within the home.

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..... [3]

(ii) Suggest reasons why reducing the use of energy within the home is an important environmental issue.

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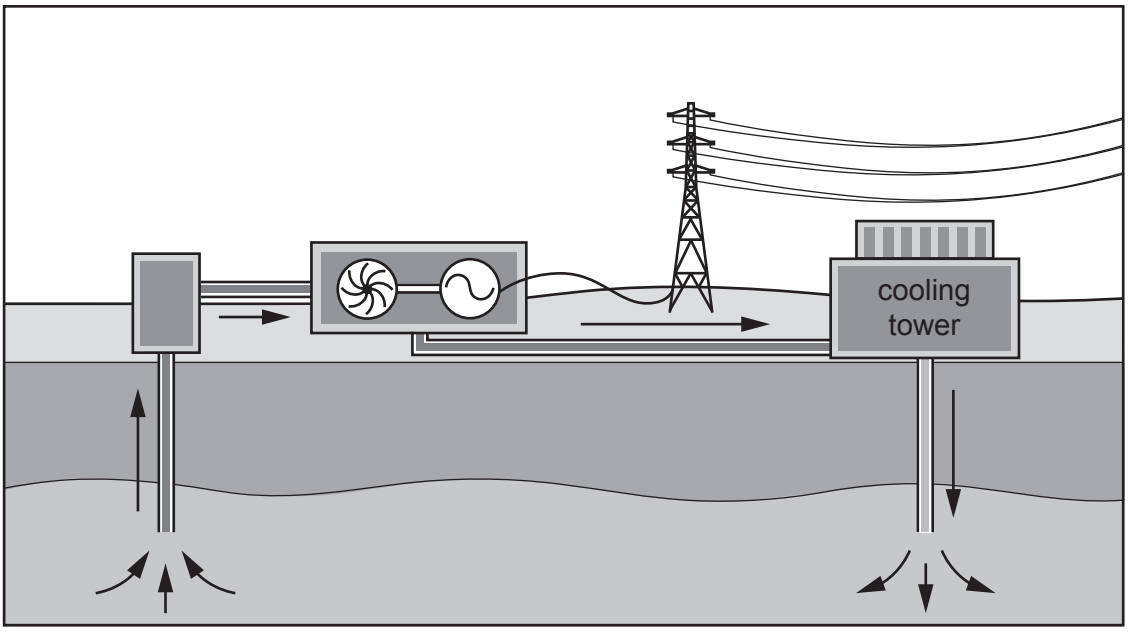
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(c) The diagram shows a geothermal power station.



(i) Use the diagram to describe how geothermal power is used to generate electricity.

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..... [4]

(ii) Suggest why geothermal power is **not** used to generate electricity in some countries.

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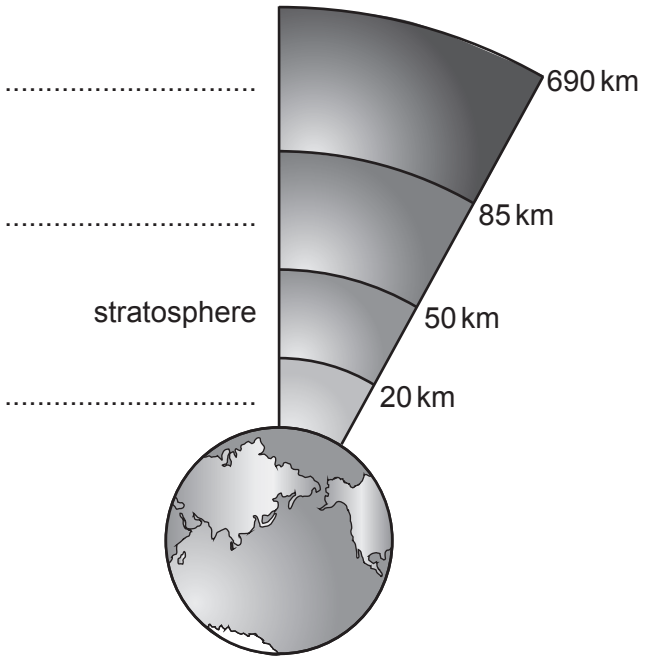
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[Total: 14]

6 The diagram shows the layers of the Earth's atmosphere.



(a) (i) Complete the diagram by labelling the layers of the Earth's atmosphere. [3]

(ii) State the height of the stratosphere above the Earth.

from …… km to …… km [1]

(iii) Draw an **X** on the diagram to show which layer has the highest concentration of ozone. [1]

(b) Describe the natural greenhouse effect.

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..... [4]

[Total: 9]

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7 **(a)** Describe the cause of an earthquake.

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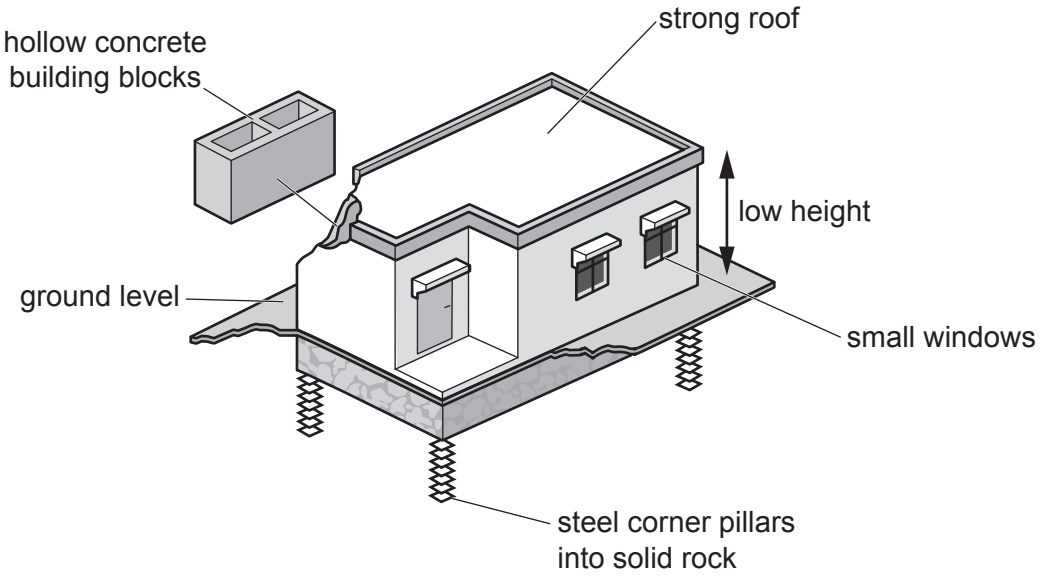
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..... [3]

(b) The diagram shows the design of an earthquake-resistant building.



Describe **three** ways that the design of the building reduces the impacts of an earthquake.

1 .....

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2 .....

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3 .....

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[3]

(c) The table shows the details of earthquakes occurring in a 14-day period in 2018.

date	country	magnitude of earthquake	number of		
			deaths	injuries	people displaced
10 Jan	Honduras	7.5	0	0	0
10 Jan	Iran	4.7	0	0	0
11 Jan	Iran	5.6	0	5	208
11 Jan	Iran	5.4	0	0	0
11 Jan	Myanmar	6.0	0	0	0
14 Jan	Peru	7.1	2	136	2003
15 Jan	Portugal	4.9	0	0	0
17 Jan	Austria	3.9	0	0	0
19 Jan	Mexico	6.3	0	0	0
20 Jan	China	4.8	0	0	0
22 Jan	India	3.0	0	0	0
23 Jan	Iran	4.5	0	0	0
23 Jan	Indonesia	6.0	2	23	2934
23 Jan	USA	7.9	0	0	0

(i) State the scale used to measure the magnitude of the earthquakes.

..... [1]

(ii) State which country experienced the most earthquakes during this 14-day period.

..... [1]

(iii) Calculate the total number of people displaced during this 14-day period.

..... [1]

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(iv) Some earthquakes with a large magnitude do **not** cause any deaths or injuries.

One reason for this could be earthquake-resistant buildings.

Suggest other reasons.

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..... [3]

(v) Suggest why people continue to live in places which are at high risk of earthquakes.

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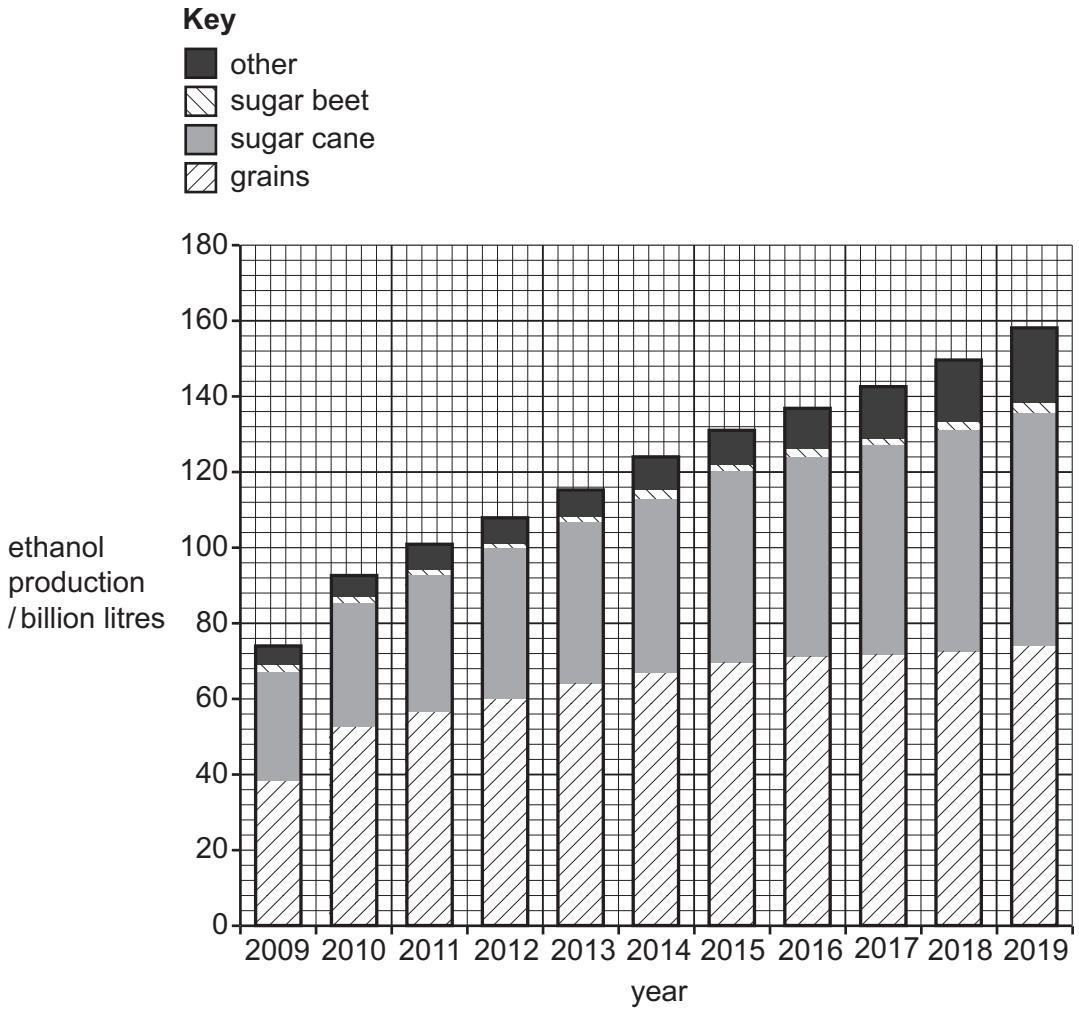
..... [3]

[Total: 15]

8 Many farmers choose to grow biofuel crops rather than food.

Some fuel crops are converted into bioethanol.

The bar chart shows the global production of bioethanol by crop.



(a) (i) Calculate the percentage change in the global production of bioethanol between 2009 and 2019.

..... % [2]

(ii) Describe the trends in the use of grains for the production of bioethanol between 2009 and 2019.

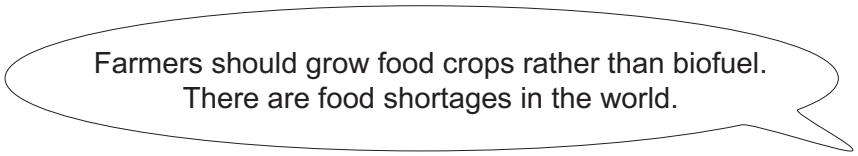
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(b) A student says:



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

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..... [6]

[Total: 10]

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