Cambridge IGCSE

Cambridge Assessment International Education
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME	
CENTRE NUMBER	
CANDIDATE NUMBER	

4323327911

ENVIRONMENTAL MANAGEMENT **0680/12**

Paper 1 Theory **February/March 2019**

1 hour 45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

Electronic calculators may be used.
You may lose marks if you do not show your working or if you do not use appropriate units.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

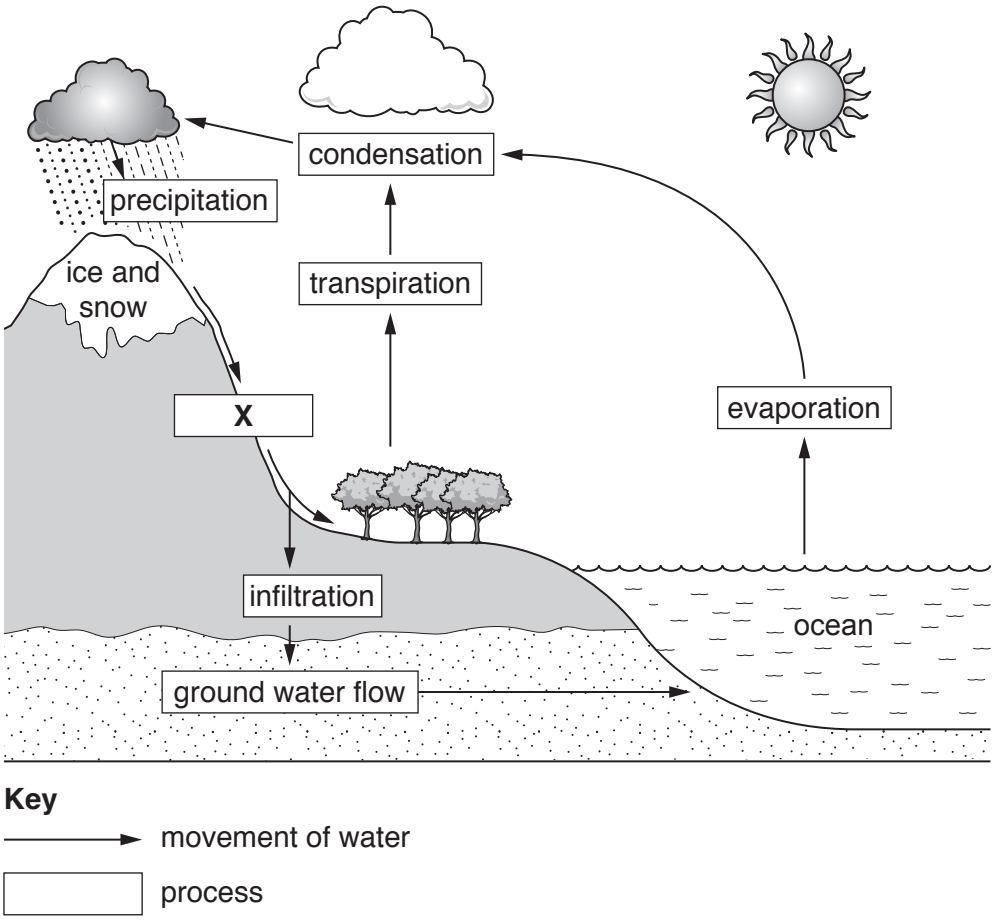
This document consists of **20** printed pages and **4** blank pages.

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Section A

1 The diagram shows part of the water cycle.



(a) State the process at **X** in the diagram.

..... [1]

(b) Describe the processes leading to the precipitation in the diagram.

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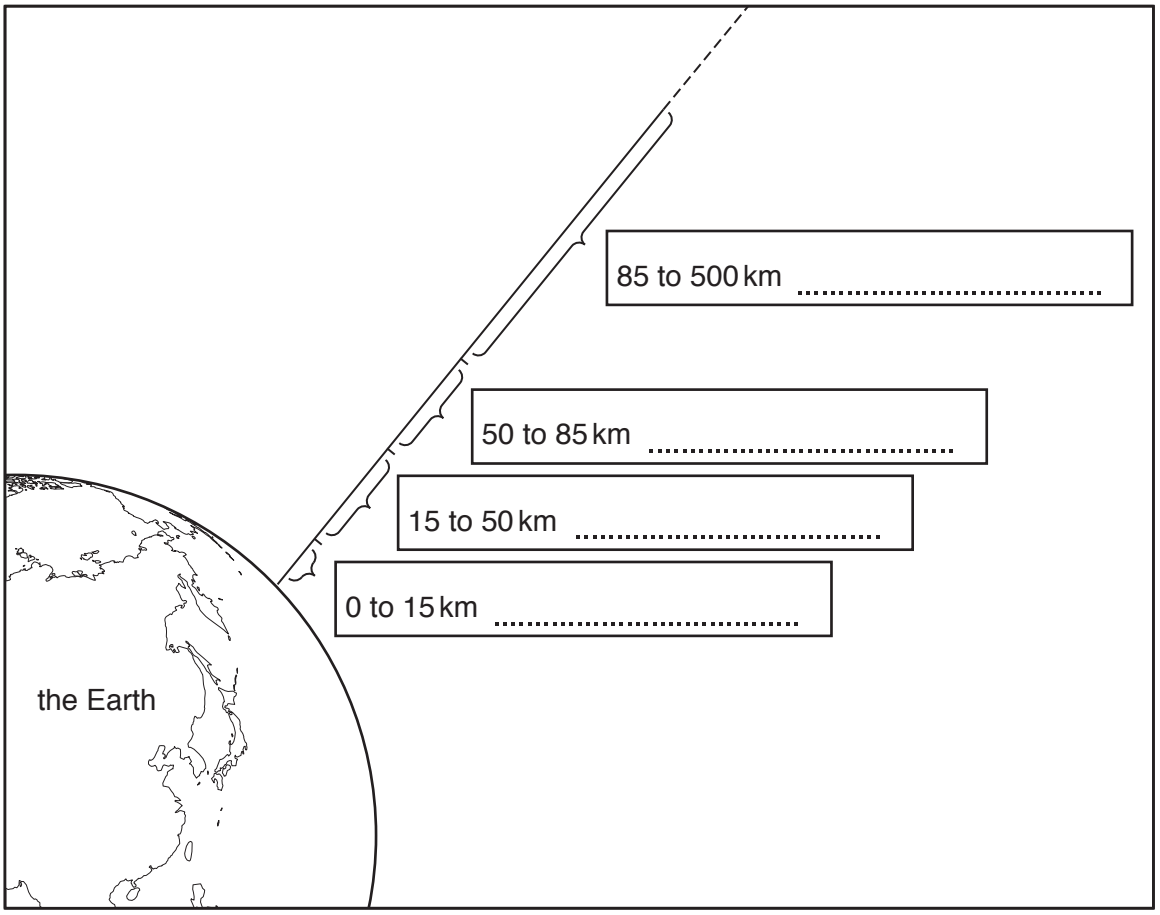
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..... [4]

[Total: 5]

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2 The diagram shows the approximate altitude of the first four layers of the Earth's atmosphere.



(a) Complete the diagram by labelling the four layers.
Use words from the list.

mesosphere **stratosphere** **thermosphere** **troposphere**

[3]

(b) The ozone layer is part of one of the layers of the atmosphere.

CFCs have depleted the ozone layer.

Describe the impacts of ozone depletion.

.....

.....

.....

..... [2]

[Total: 5]

3 During 2011 the world population reached seven billion. The world's population continues to increase.

(a) State **two** strategies for controlling population growth.

1 .....

.....

2 .....

.....

[2]

(b) The increasing population means that there is a shortage of food in some parts of the world.

(i) Describe how the use of fertilisers can increase agricultural yields.

.....

..... [1]

(ii) Describe how the overuse of fertilisers can impact river ecosystems.

.....

.....

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..... [3]

[Total: 6]

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4 **(a)** Describe **two** advantages of using nuclear power rather than using fossil fuels to generate electricity.

1 .....

.....

2 .....

.....

[2]

(b) Explain how people can reduce the consumption of electricity in the houses they live in.

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.....

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..... [2]

[Total: 4]

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Section B

5 In October 2016, Hurricane Matthew hit Haiti. About 1000 people died and nearly 175 000 people were made homeless. Winds reached 230 km / h and caused storm surges, which led to widespread flooding.

(a) The table shows the categories of hurricanes.

category	wind speed in km / h	damage caused
1	119–153	minimal
2	154–177	moderate
3	178–208	extensive
4	209–251	extreme
5	> 252	catastrophic

Determine the category of Hurricane Matthew when it hit Haiti.
Give a reason for your answer.

category .....

reason .....
[1]

(b) Some people from Haiti spoke about the preparation for, and management of, Hurricane Matthew.

Person **A**:
Before the hurricane, I lived in a shelter I had made myself. Lots of us lived like this. There were no building regulations. All the shelters were completely destroyed as soon as the hurricane started. I will have to build a new shelter.

Person **B**:
The roads into our village were destroyed by landslides and they were covered with flood water. No one came to help us for days. The country doesn't have enough money to help everyone.

Person **C**:
I didn't know what to do when the hurricane hit. No one had told us how to prepare. We had no mobile phone signal and all the power lines were down, so we had no idea what was happening.

Person **D**:
We lived outside for days. The only help we got was from a charity. They gave us plastic sheets for shelter and some food.

Person **E**:
Since the hurricane, a charity has given us early warning hurricane sirens. The maintenance of the solar-powered sirens is paid for by using them as charging stations for mobile phone users.

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(i) Do you think Haiti had an effective strategy for managing the impacts of Hurricane Matthew?

Support your view with reference to the comments made by the different people.

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..... [6]

(ii) Suggest why people were concerned about water-related diseases after Hurricane Matthew.

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..... [3]

(c) Hurricane Matthew destroyed most of the crops in Haiti and people were not able to replant crops for many months.

Suggest the consequences of this for the people of Haiti.

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..... [3]

(d) Suggest reasons why people live in areas that are often hit by hurricanes, despite the dangers.

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..... [2]

[Total: 15]

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6 In 2015, a new tungsten mine was opened in the United Kingdom. Tungsten is a metal used in many industries.

Before the mine opened, the United Kingdom imported the majority of its tungsten from overseas. The new mine will be the fourth-biggest tungsten mine in the world. The tungsten is found very close to the surface.

There is an increased world demand for tungsten.

The new mine created approximately 200 jobs in the local area.

The photograph shows this type of mining.



(a) (i) State the type of mining shown in the photograph.

..... [1]

(ii) Explain why this type of mining is suitable for the new tungsten mine.

.....

..... [1]

(b) Describe **three** impacts of this mine on the local area.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(c) Recycling is one strategy for the sustainable use of rocks and minerals.

Describe another way rocks and minerals can be used sustainably.

.....

..... [1]

(d) A student read an article in a scientific journal about e-waste.

> **E-waste**
>
> E-waste consists of electrical and electronic equipment and their components, which have been thrown away rather than being reused.
>
> E-waste is difficult to manage because it is made-up of many different components, many of which are toxic. Typical toxins include heavy metals such as mercury, chromium and lead, acidic gases from burning plastics and CFCs from refrigeration units. These toxins can have negative environmental and health effects. Some e-waste contains useful metals such as tungsten, gold, silver, iron, aluminium and copper.
>
> Some countries have take-back systems where consumers can safely recycle their e-waste and even have their e-waste collected from their homes. However, most e-waste is incinerated, buried as land-fill or dumped illegally.

(i) Describe what is meant by e-waste.

.....

..... [1]

(ii) Suggest and explain **two** negative effects of e-waste.

1 .....

.....

.....

2 .....

.....

.....

[2]

(iii) Suggest how countries can reduce the negative impact of e-waste.

.....

.....

.....

..... [2]

(e) The article also contained some data about e-waste.

> The total global e-waste generated in 2014 was 41.9 million tonnes (Mt) and 50.0 Mt in 2018. In 2014, e-waste contained 1.00 Mt of lamps; 6.30 Mt of screens; 12.8 Mt of small electronic equipment; 3.00 Mt of small information technology items; 11.8 Mt of large electronic equipment and 7.00 Mt of refrigeration equipment.

(i) Calculate the percentage increase in e-waste from 2014 to 2018.

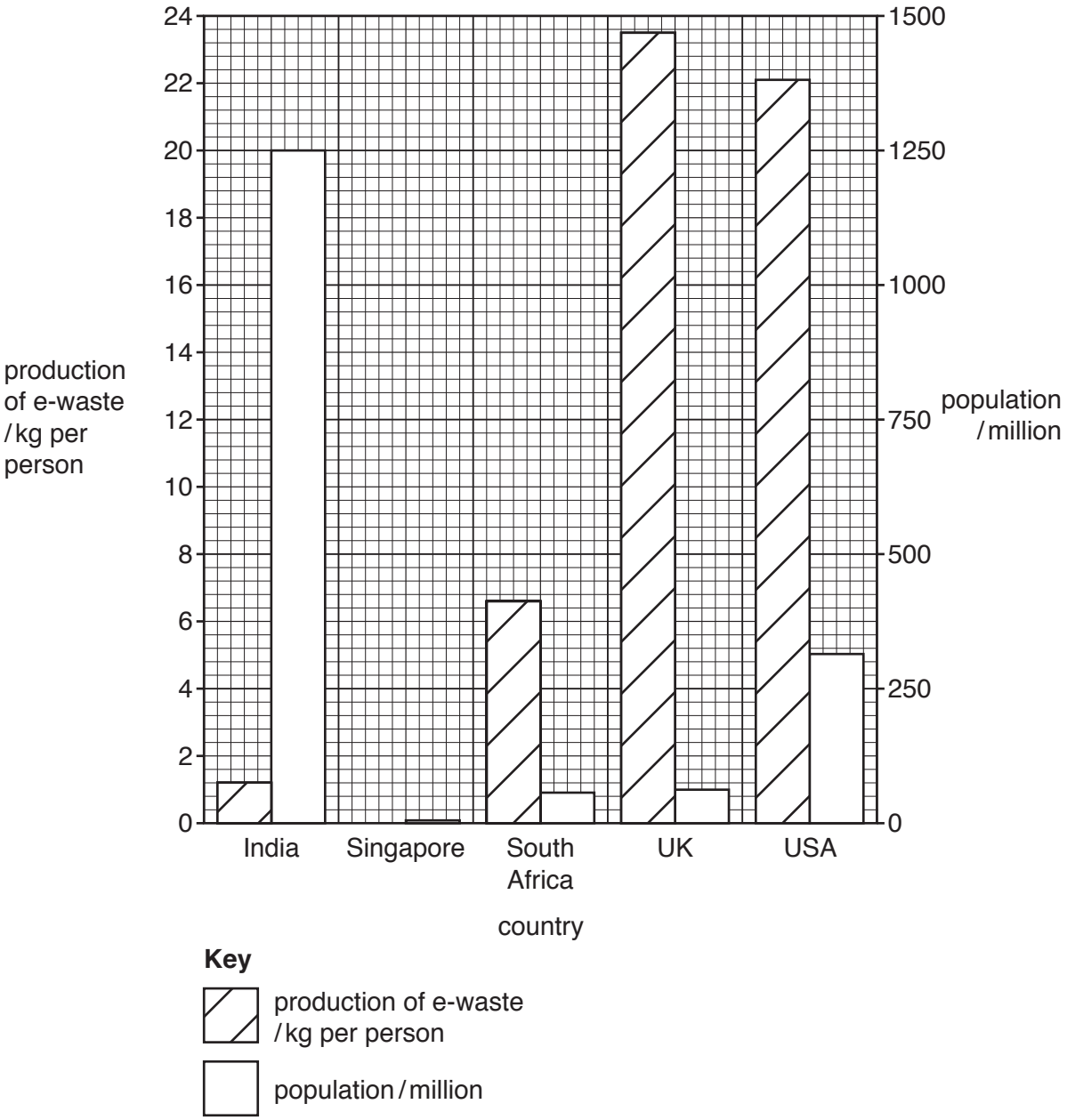
..... % [2]

(ii) The student wants to summarise the data in the article to show the types of equipment e-waste contained in 2014.

Record the data in a suitable table.

[3]

(f) The bar chart shows the average amount of e-waste produced per person for some countries in 2014. It also shows the population of these countries in 2014.



(i) Use the key to complete the bar chart for Singapore, to show that 19.6 kg per person of e-waste was produced in 2014. [1]

(ii) Use the bar chart to determine the country which produces the most e-waste.

Explain how you determined your answer.

country .....

explanation .....

.....

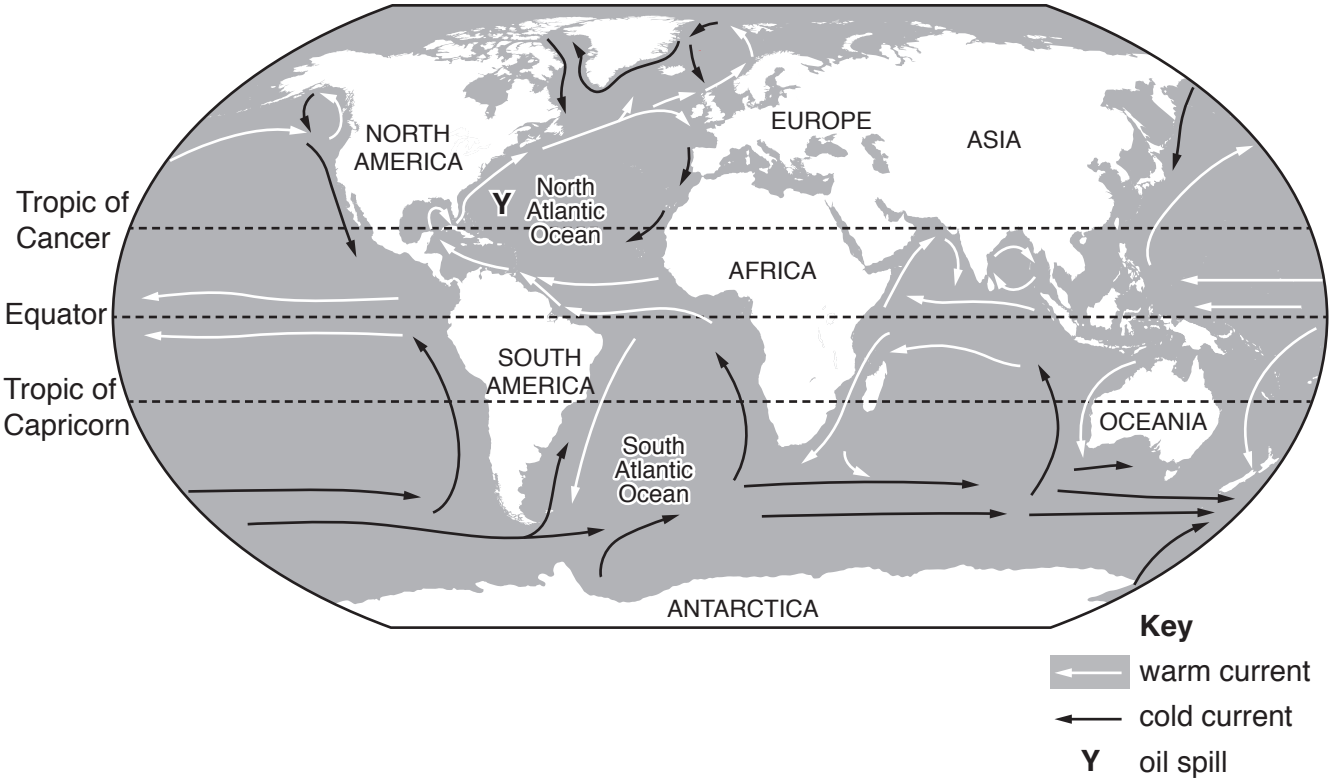
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[Total: 19]

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7 The map shows major ocean currents.



(a) Use the map to answer the following questions.

(i) Describe the major ocean currents in the Atlantic Ocean.

.....

.....

.....

.....

.....

..... [3]

(ii) Explain why an oil spill at location **Y** would be of international concern.

.....

.....

.....

..... [2]

(iii) Large fish populations are found off the west coast of southern Africa.

Explain why.

.....

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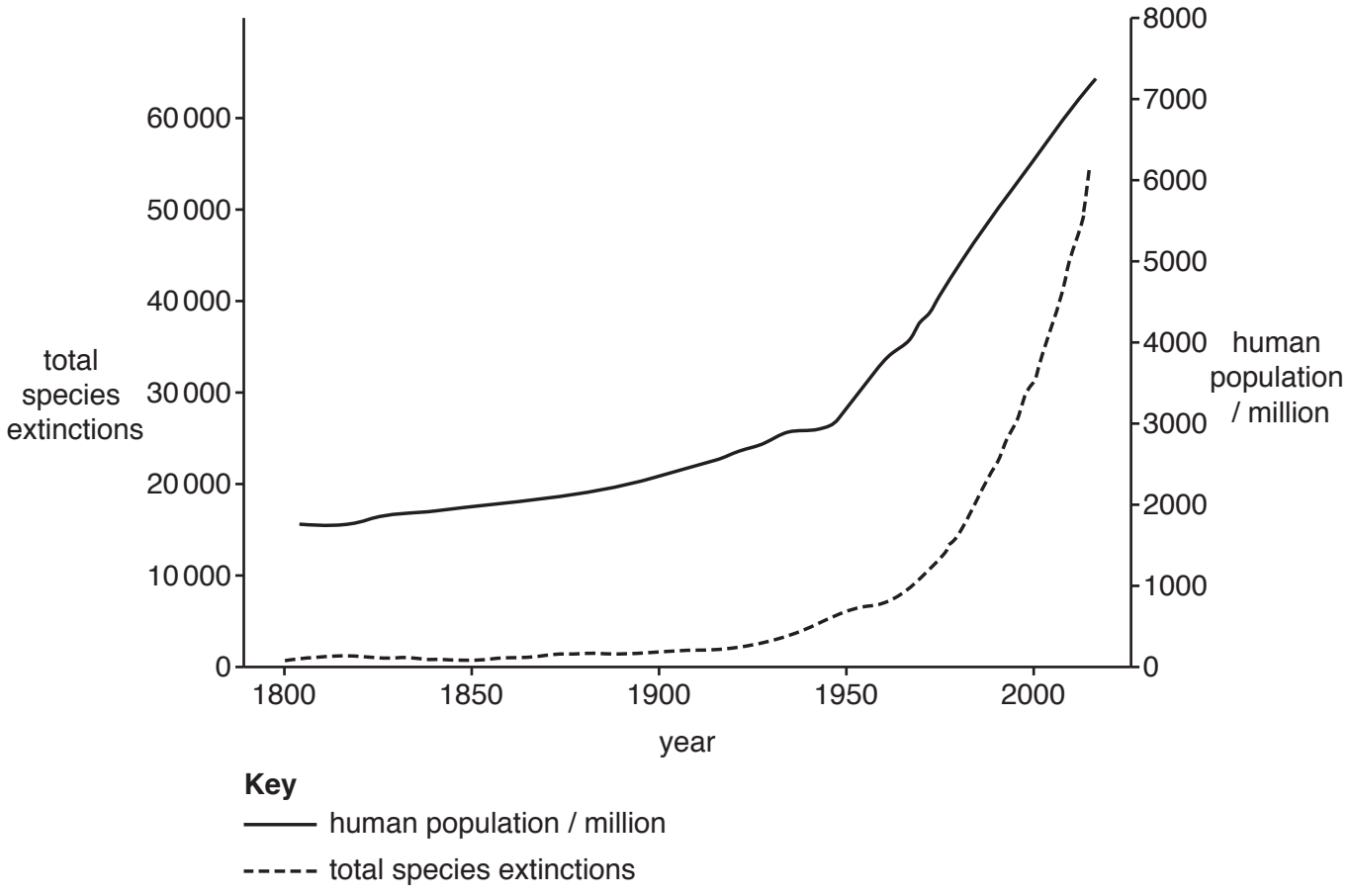
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(b) Eight out of ten of the world's most populated cities are coastal. Over half of the world's population lives within 200 km of the coastline.

More than 10% of the world's population depend on fisheries for their livelihood.

The graph shows the trend in human population and the trend in total species extinctions.



Some people are concerned about the exploitation of fisheries.

To what extent do you agree with this concern? Use the information to support your answer.

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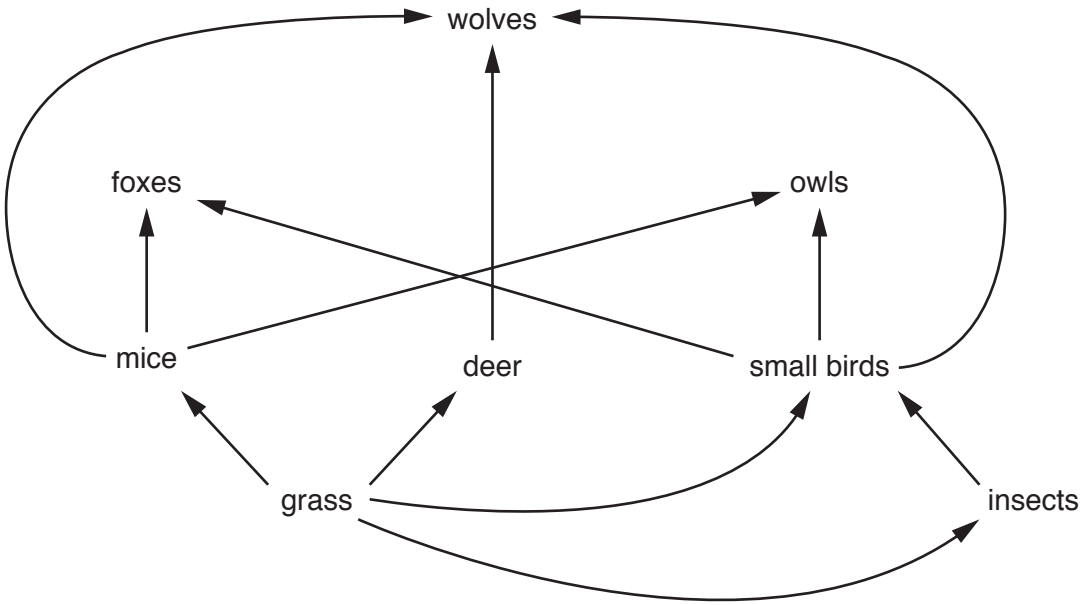
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..... [4]

[Total: 11]

8 The diagram shows part of a food web.



(a) (i) Write **one** food chain from this food web.

..... [1]

(ii) Determine the **greatest** number of trophic levels shown in the food web.

..... [1]

(b) Plants, such as grass, get their energy from the Sun.

(i) Write the word equation for this process.

..... [2]

(ii) Soil is a medium for plant growth.

Complete the table to describe the features of a sandy soil.

feature of soil	description of sandy soil
ease of cultivation	easy
organic content	.....
water content	.....
drainage	.....

[3]

(c) The photograph shows the result of the planned burning of an area of forest in Canada.



Suggest **one** possible benefit and **one** negative effect of clearing land by burning existing vegetation.

benefit .....

.....

negative effect .....

.....

[2]

(d) ‘The sustainable management of forests should be a global environmental priority.’

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

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..... [6]

[Total: 15]

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