Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

0022242652

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 Theory **October/November 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 [ ].

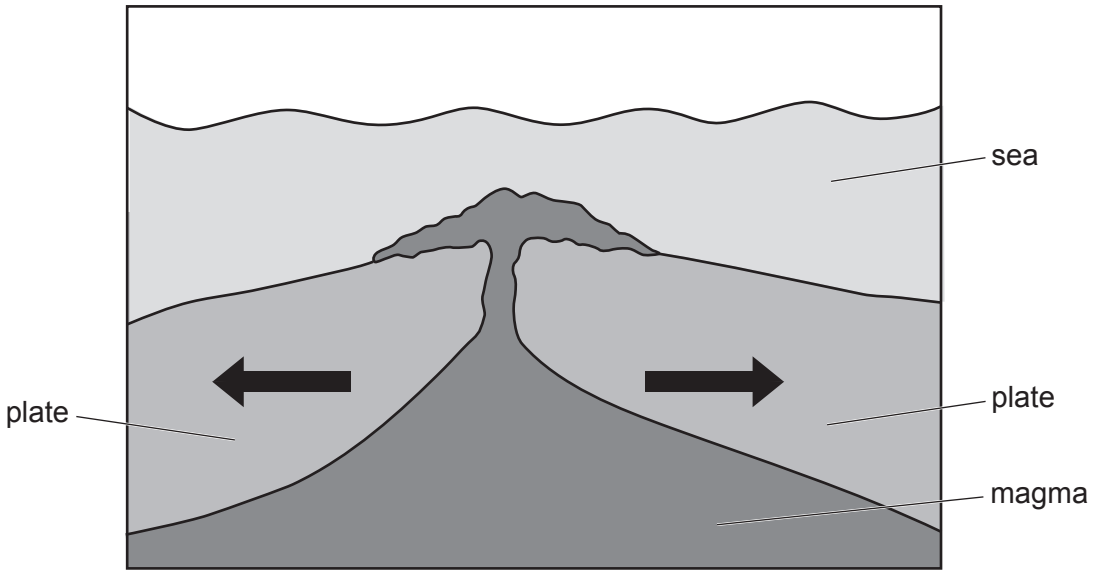
This document has **20** pages. Any blank pages are indicated.

[Turn over

Section A

1 The Earth's crust is made up of tectonic plates.

The diagram shows a constructive plate boundary.



(a) Describe what is happening at this constructive plate boundary.

.....

.....

.....

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.....

..... [3]

(b) Describe the impacts of an earthquake on people living near a plate boundary.

.....

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.....

.....

..... [3]

[Total: 6]

2 **(a)** A poster from a national advertising campaign to encourage people to have more children is shown.

> Save our country!
>
> Raise a child.
>
> The population of our country is falling! We need more children for a secure future.

(i) State the name of the type of national population policy this campaign is promoting.

..... [1]

(ii) An advertising campaign is one strategy to increase national birth rate.

Suggest **two** other strategies to increase national birth rate.

1 .....

.....

2 .....

.....

[2]

(b) Suggest reasons why death rates are lower in some countries than in others.

.....

.....

.....

..... [2]

[Total: 5]

3 Ozone layer depletion is sometimes referred to as 'the hole in the ozone layer'.

(a) State **one** chemical responsible for ozone depletion.

..... [1]

(b) State **one** impact of ozone depletion on people.

..... [1]

(c) Describe a strategy to reduce ozone depletion.

.....

.....

.....

..... [2]

[Total: 4]

4 Overfishing has resulted in the depletion of many marine fish populations.

(a) State **two** strategies used to manage the number of fish caught at sea.

1 .....

2 .....
[2]

(b) Over the last 50 years, there has been a large increase in farming marine fish species.

Farming marine fish species helps reduce overfishing.

(i) State **two** other benefits of farming marine fish species.

1 .....

2 .....
[2]

(ii) Suggest **one** problem associated with farming marine fish species.

.....

..... [1]

[Total: 5]

[Turn over

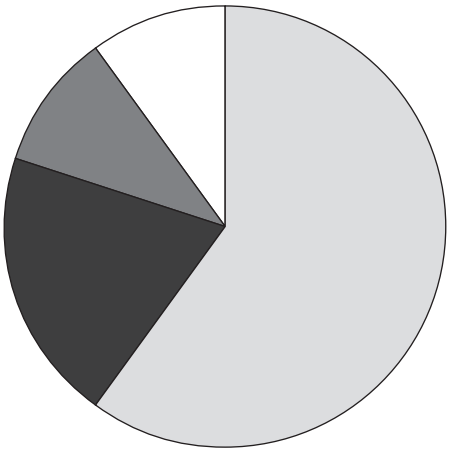
Section B

5 **(a)** The pie charts show the composition of two soils: a sandy soil and a clay soil.

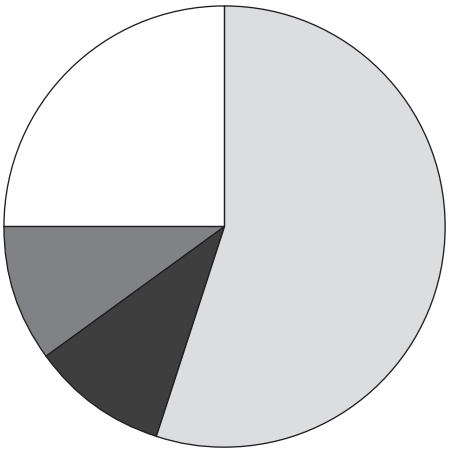
Key

- mineral particles
- air
- organic content
- water

sandy soil



clay soil



(i) State which soil has the larger content of mineral particles.

..... [1]

(ii) Suggest which soil has better drainage. Give reasons for your answer.

.....

.....

.....

..... [2]

(iii) Suggest the benefits to a farmer of having organic matter in soil.

.....

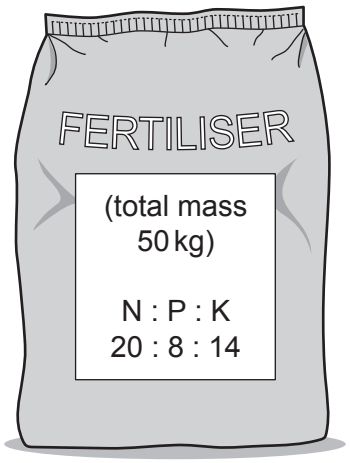
.....

.....

..... [2]

(b) The drawing shows the label on a bag of fertiliser.

The label shows the ratio of N : P : K content.



(i) State the name of the mineral ion represented by K.

..... [1]

(ii) The N value represents the percentage of nitrate ions in the fertiliser.

Calculate the total mass of nitrate ions in this bag of fertiliser.

..... kg [1]

(iii) Suggest reasons why farmers use fertilisers with different ratios of N : P : K.

.....

.....

.....

..... [2]

[Total: 9]

[Turn over

6 In 2017, there were an estimated 219 million people infected with malaria worldwide.

(a) Complete the sentences about how malaria is spread.

Use the words from the list.

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

female	**human**	**male**
mosquito	**parasite**	**vector**

Mosquitoes are the ..... for malaria.

Specifically, malaria is spread by the ..... *Anopheles* mosquito.

When an infected mosquito bites an uninfected person, the malaria ..... is passed into the ..... bloodstream, making the person infected.

This cycle of transmission is continued when an uninfected mosquito bites an infected person.

[4]

(b) One example of a strategy to control malaria is draining swamps.

Draining swamps reduces the number of areas where mosquitoes can breed.

Describe **two** other strategies to control malaria.

strategy 1 .....

.....

.....

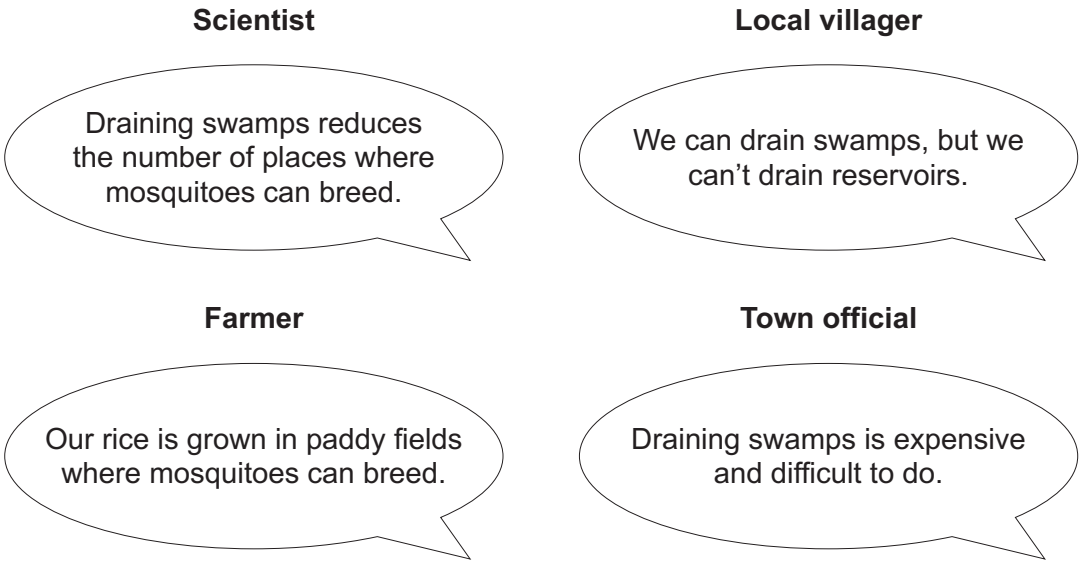
strategy 2 .....

.....

.....

[4]

(c) Four people comment on the strategy of draining swamps to control malaria.



Suggest whether draining swamps is an effective strategy to control malaria.

Support your view by referencing and adding to the comments made by the four people.

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.....

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..... [4]

[Total: 12]

[Turn over

7 **(a)** The bar chart shows the percentage of species threatened with extinction for some groups of organisms.

The bar chart is **not** complete.

Content removed due to copyright restrictions.

(i) Complete the bar chart to show that 31% of species in the sharks and rays group are threatened with extinction. [1]

(ii) The total number of species assessed was 98 149. Of these, 27% are threatened with extinction.

Calculate the number of species threatened with extinction.

..... [1]

(iii) Suggest why the number of species threatened with extinction may increase in the future.

.....

.....

.....

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..... [3]

(iv) Describe how zoos can help the conservation of species.

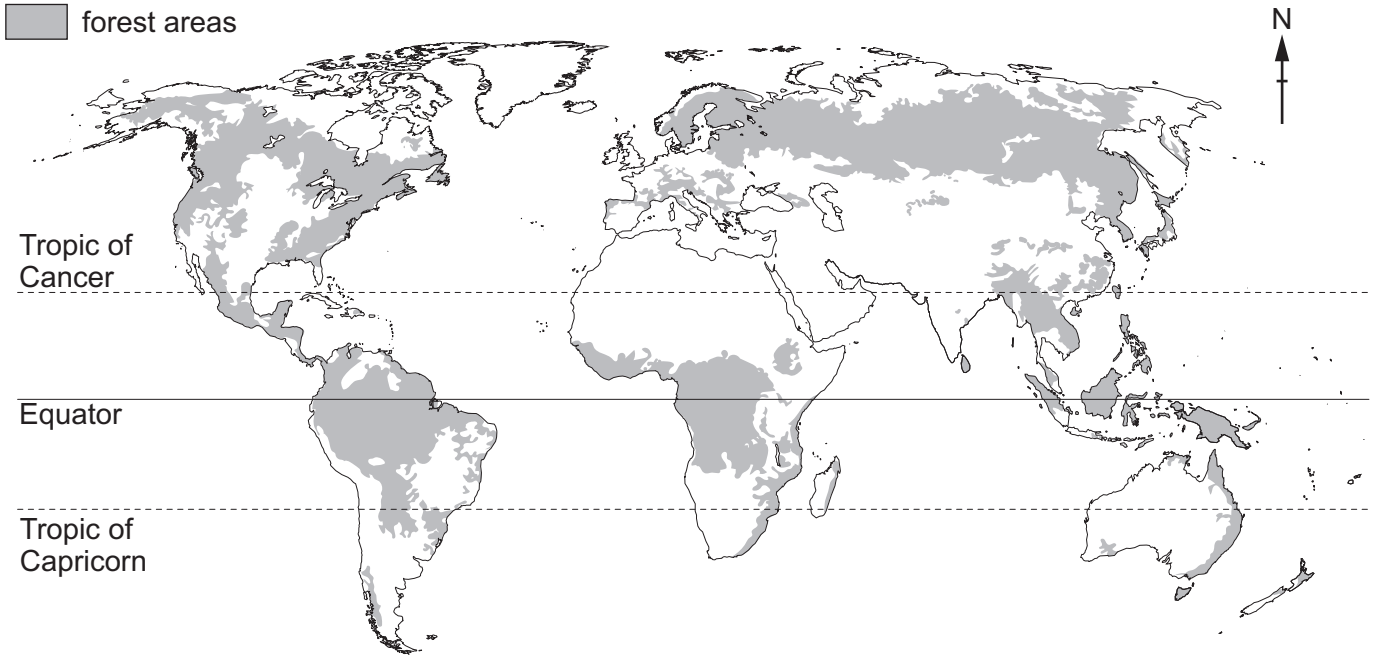
.....

.....

.....

..... [2]

(b) The map shows the main areas of forest around the world.



(i) Describe the distribution of forest areas around the world.

.....

.....

.....

.....

.....

..... [3]

(ii) Trees in a forest prevent soil erosion.

Describe how trees prevent soil erosion.

.....

.....

.....

..... [2]

(iii) Describe causes of deforestation.

.....

.....

.....

..... [2]

[Total: 14]

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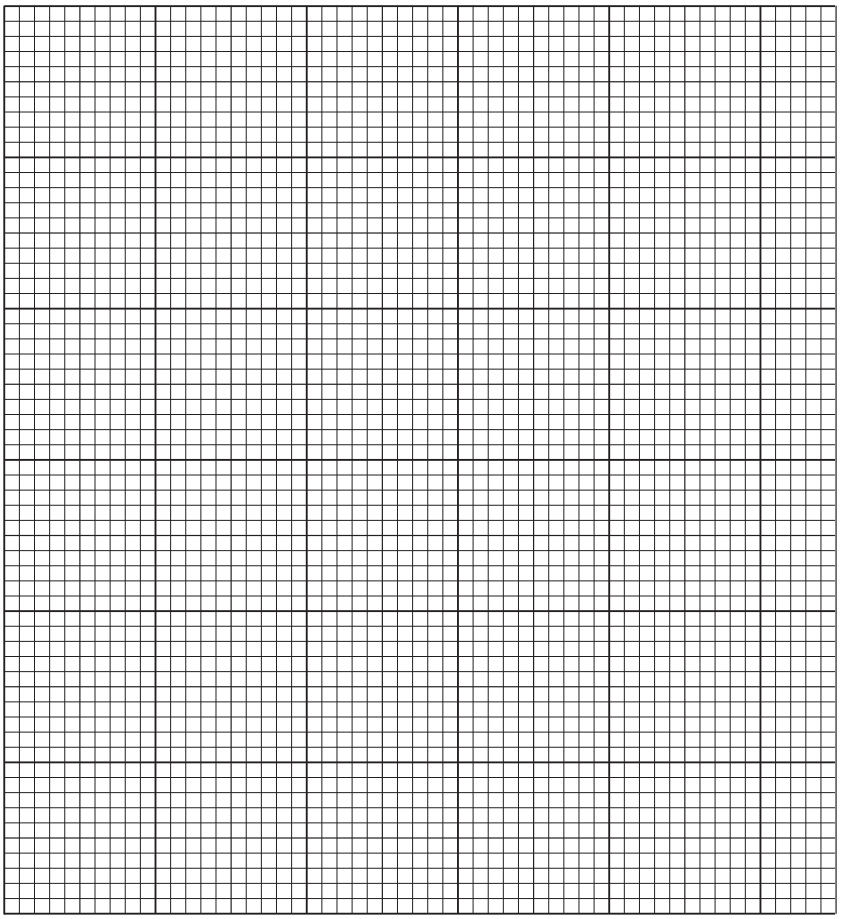
8 The table shows energy consumption by resource for Canada in 2007 and 2017.

The table is **not** complete.

year	energy consumption / million tonnes of oil equivalent (MTOE)						
	oil	**natural gas**	**coal**	**nuclear**	**hydro-electric**	**other renewables**	**total**
2007	106.0	150.2	25.7	21.0	83.2	2.7	.....
2017	108.6	99.5	18.6	21.9	89.8	10.3	348.7

(a) On the grid, plot a bar chart of energy consumption **in 2017** for the six resources shown in the table.



[4]

(b) (i) Complete the table to show the total energy consumption in 2007. [1]

(ii) Suggest **two** reasons for the change in total energy consumption between 2007 and 2017.

1 .....

.....

2 .....

.....

[2]

(iii) Suggest reasons why there was only a small change in nuclear energy consumption between 2007 and 2017.

.....

.....

.....

..... [2]

(c) Suggest why the energy consumption of a more economically developed country (MEDC) is usually greater than a less economically developed country (LEDC).

.....

.....

.....

..... [2]

[Total: 11]

9 **(a)** A student reads a blog about mineral extraction.

> We need minerals for many things, and mining is the primary method of extraction.
>
> - Since 1980, the amount of minerals extracted worldwide has increased by 60%.
> - In 2008, the annual amount of extraction was 62 billion tonnes.
>   This is eight times the amount extracted in 1900.
> - It is estimated that annual extraction will be 100 billion tonnes by the year 2030.
>
> The aim of modern mining is to be sustainable. This means meeting our needs without compromising the needs of future generations. There should be a balance between economic development, environmental protection, community benefits and government responsibilities.

(i) The annual amount of extraction in 2008 was 62 billion tonnes.

Calculate the annual amount of extraction in 1900 in billion tonnes.

..... billion tonnes [1]

(ii) Suggest reasons why it is important that modern mining is sustainable.

.....

.....

.....

..... [2]

(iii) Describe strategies for the sustainable use of minerals.

.....

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.....

.....

.....

..... [3]

(iv) State **two** strategies for restoring landscapes damaged by mineral extraction.

1 .....

2 .....

[2]

(b) A mining company is going to open a new quarry. A person living in a nearby village says:

> Some people in my village are unhappy about the quarry being opened, but I think everybody should be pleased there is going to be a new quarry.

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

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..... [6]

[Total: 14]

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