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0878559245

ENVIRONMENTAL MANAGEMENT **0680/11**

Paper 1 Theory **October/November 2020**

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

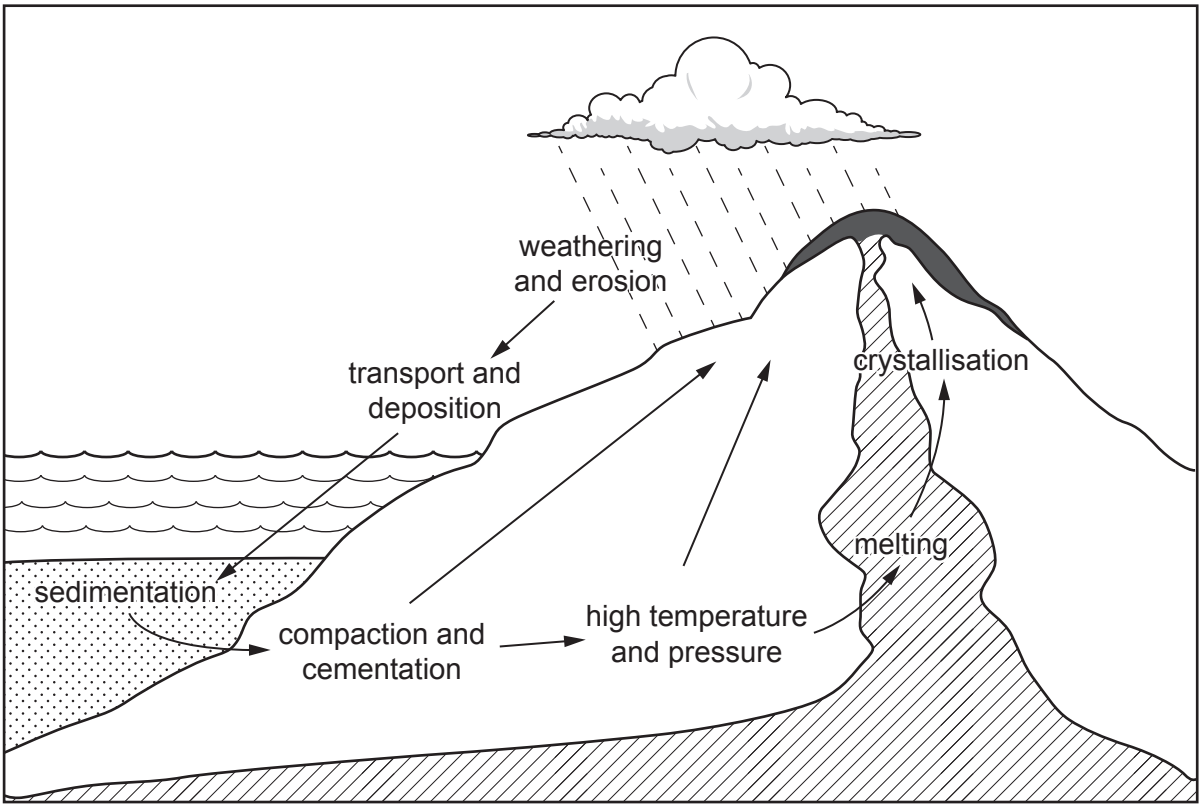
- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages. Blank pages are indicated.

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Section A

1 The diagram shows some processes in the rock cycle.



Key

magma
lava
sediment
sea
direction of process

(a) Use the diagram to describe how **sedimentary** rocks are formed.

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..... [3]

(b) A new mine is proposed near a town.

Suggest reasons why some people do **not** want a mine near to where they live.

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..... [3]

[Total: 6]

2 The photograph shows an energy resource being used to generate electricity.



(a) Name the energy resource in the photograph.

..... [1]

(b) Suggest **one** advantage and **one** disadvantage of using the energy resource shown in the photograph compared with using fossil fuels.

advantage .....

.....

disadvantage .....

.....

[2]

(c) Using electricity in a house can be expensive.

Describe **two** strategies to reduce the amount of electricity used in a house.

1 .....

.....

2 .....

.....

[2]

[Total: 5]

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3 People migrate for many reasons.

(a) Describe **three** economic reasons for migration.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) State **one** environmental reason for migration

.....

..... [1]

[Total: 4]

4 Soil erosion can be caused by wind.

(a) State **two** other causes of soil erosion.

1 .....

2 .....
[2]

(b) Give **one** impact of soil erosion on the environment.

.....

..... [1]

(c) State **two** strategies to reduce soil erosion caused by wind.

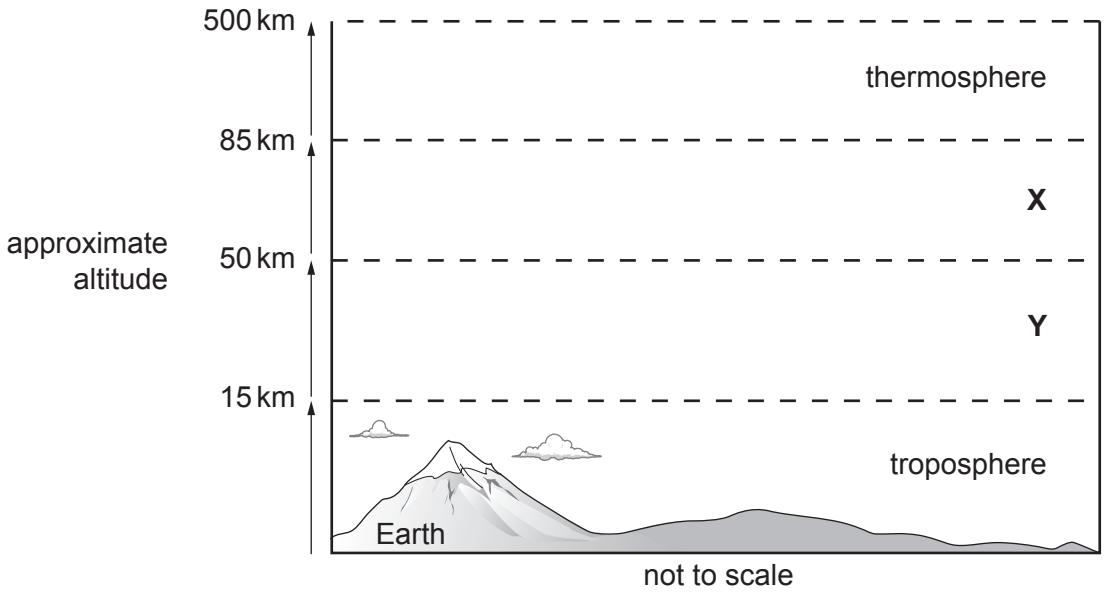
1 .....

2 .....
[2]

[Total: 5]

Section B

5 The diagram shows part of the structure of the atmosphere.



(a) (i) Name the layers of the atmosphere labelled **X** and **Y**.

X .....

Y .....

[2]

(ii) The atmosphere can be polluted by vehicle emissions. These emissions can cause acid rain.

Explain the impacts of acid rain on the environment.

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.....

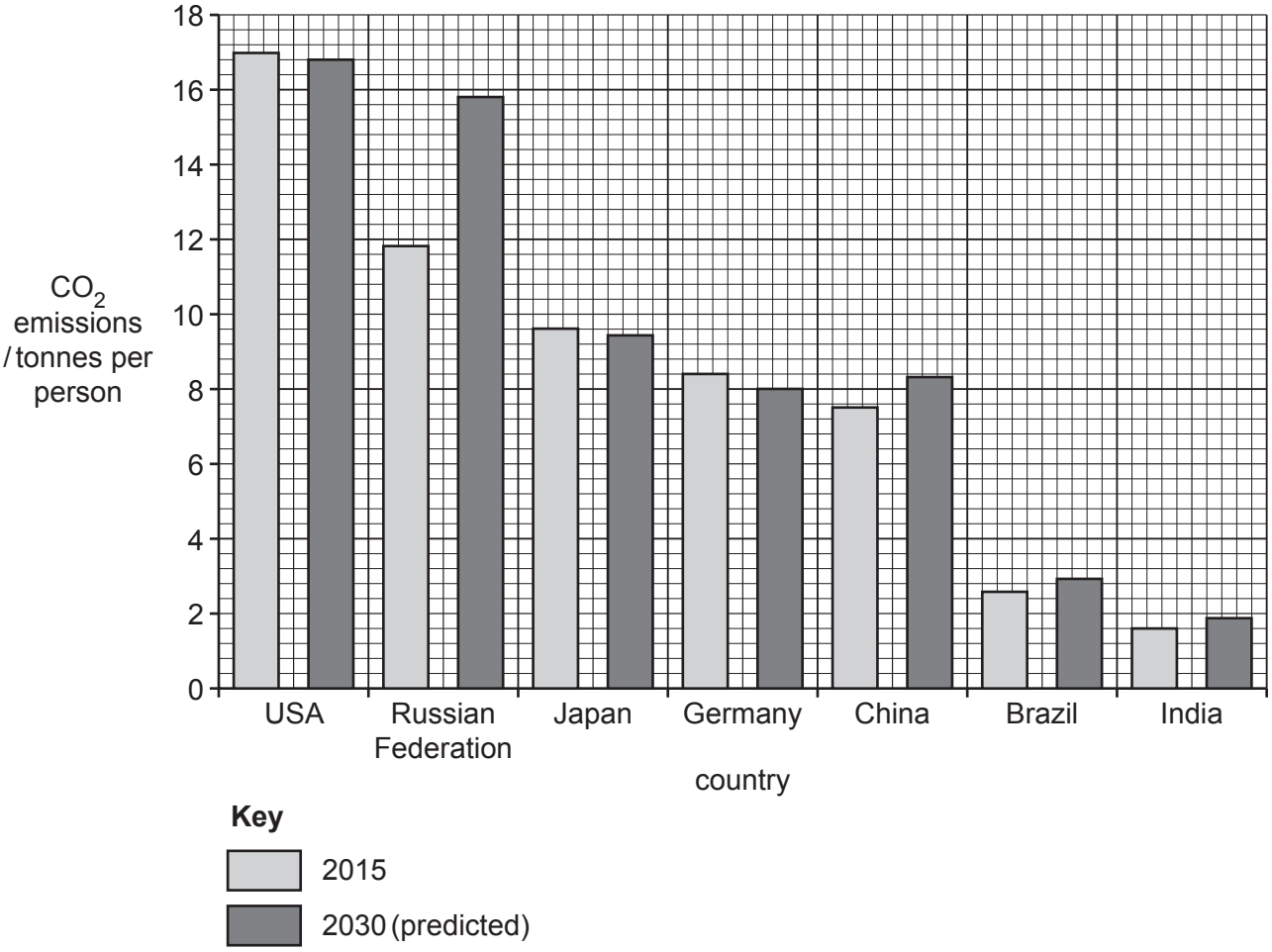
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..... [3]

(b) The bar chart shows carbon dioxide, CO_2, emissions per person in different countries in 2015 and predicted emissions per person for 2030.



(i) Name the **three** countries where the predicted CO_2 emissions per person for 2030 are lower than the CO_2 emissions per person in 2015.

1 .....

2 .....

3 .....

[1]

(ii) In 2015, the CO_2 emissions per person in China were 7.5 tonnes. In 2030, the predicted CO_2 emissions per person in China are 8.3 tonnes.

Calculate the predicted percentage increase in CO_2 emissions per person for China from 2015 to 2030.

.....% [2]

(iii) Suggest reasons why this graph **cannot** be used to predict the future global concentration of CO_2 in the atmosphere.

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..... [2]

(c) Suggest reasons why atmospheric pollution is a global problem.

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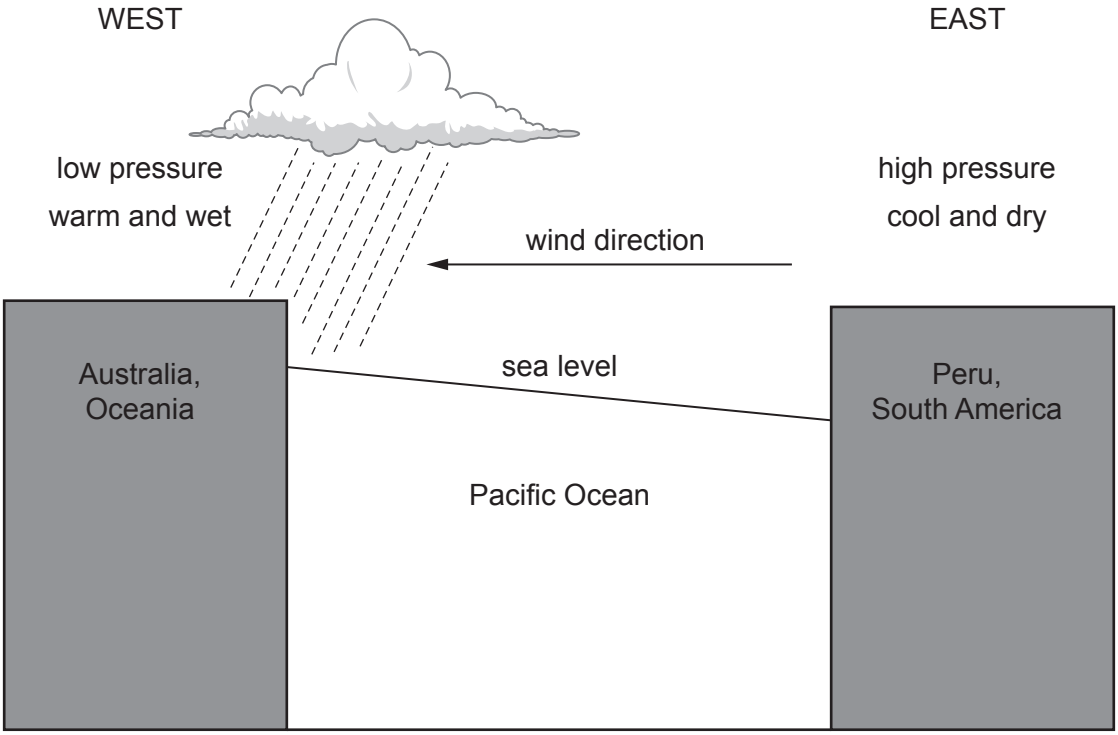
..... [3]

[Total: 13]

6 **(a)** The El Niño Southern Oscillation (ENSO) phenomenon affects the sea temperature and wind over the Pacific Ocean.

The ENSO phenomenon has three main phases: El Niño (warming phase), La Niña (cooling phase) and neutral (normal phase).

The diagram shows conditions in the **neutral** phase.



not to scale

Use the diagram to suggest reasons why the neutral phase of the ENSO phenomenon can cause flooding in **Australia**.

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..... [3]

(b) In 2017, Cyclone Debbie caused damage and flooding in Australia. Many people were injured and 14 people died.

(i) Describe the causes of a tropical cyclone.

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..... [3]

(ii) Describe ways to reduce the impacts of a tropical cyclone.

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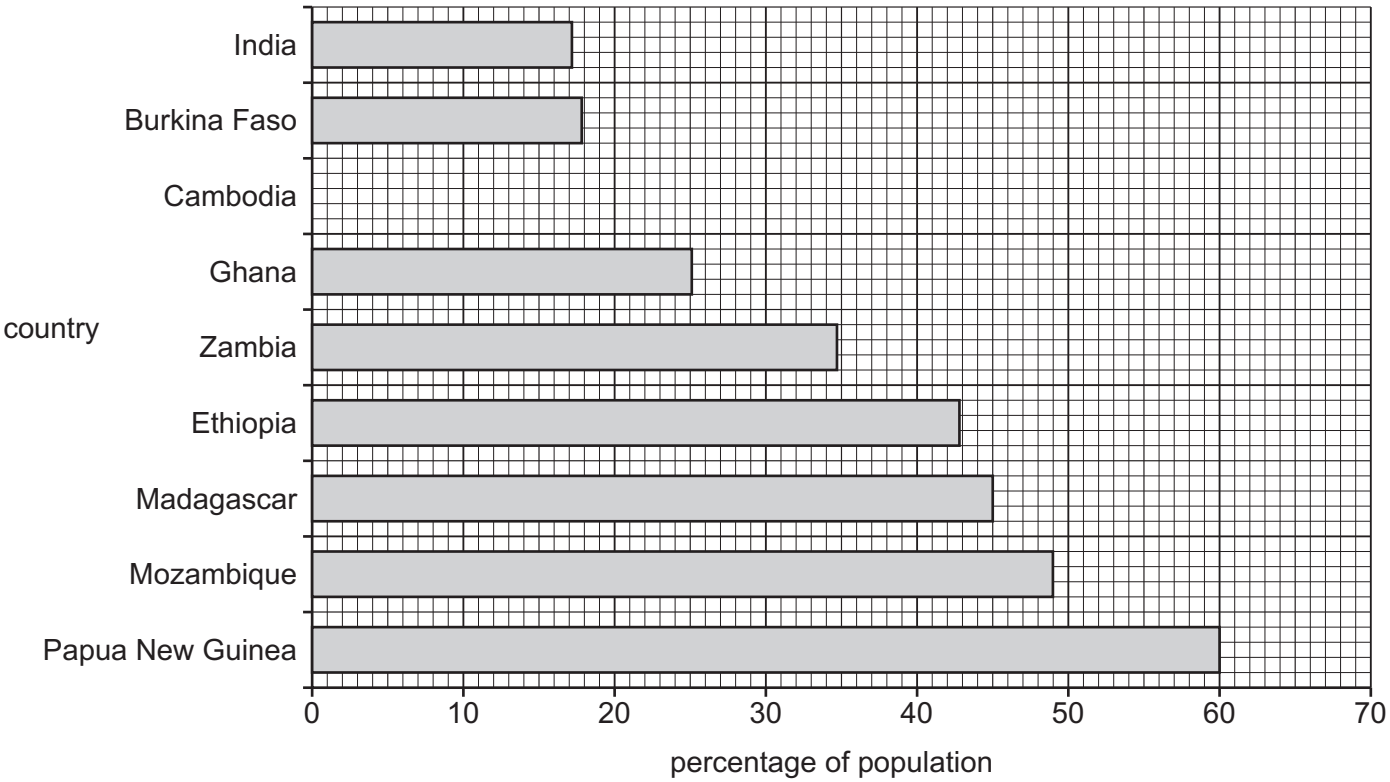
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..... [3]

[Total: 9]

7 **(a)** The bar chart shows the percentage of the population **without** access to safe drinking water in nine countries in 2016.



(i) Complete the bar chart to show that the percentage of the population of Cambodia without access to safe drinking water in 2016 was 24.5%. [1]

(ii) The percentage of the population of Japan without access to safe drinking water is 0%.

Suggest **one** reason why everybody in Japan has access to safe drinking water.

.....

..... [1]

(b) The table shows the percentage of the population of Ethiopia **with** access to safe drinking water from 2008 to 2015 and the change in percentage points from the previous year.

year	2008	2009	2010	2011	2012	2013	2014	2015
percentage of the population with access to safe drinking water	28.5	30.0	31.6	33.1	34.6	36.0	37.6	39.1
change in percentage points from previous year		1.5	1.6	.....	.....	1.4	.....	1.5

Complete the table to show the change in percentage points from the previous year in 2011, 2012 and 2014. [1]

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(c) Dam projects can provide access to drinking water.

Describe other ways dam projects can affect local people.

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..... [4]

(d) Insecticides used on agricultural land can be washed into rivers.

Describe the effects of insecticides on aquatic life in rivers.

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..... [2]

(e) Four students discuss the benefits and limitations of desalination.

Student **A**:

Desalination plants are expensive to build and run. The fresh water produced is expensive to buy. The process of desalination uses a lot of energy. We do not know what future energy costs or availability will be.

Student **B**:

Desalination produces large amounts of good-quality potable water.

Student **C**:

Desalination can be harmful to the environment. It produces a lot of salt waste, which is put back into the sea. Other harmful chemicals such as chlorine are also involved.

Student **D**:

There is a continuous supply of sea water to use for desalination because 97% of the water on Earth is in the seas and oceans.

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Do you think desalination is an effective way to produce fresh water?

Support your view with reference to the comments of the four students.

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..... [7]

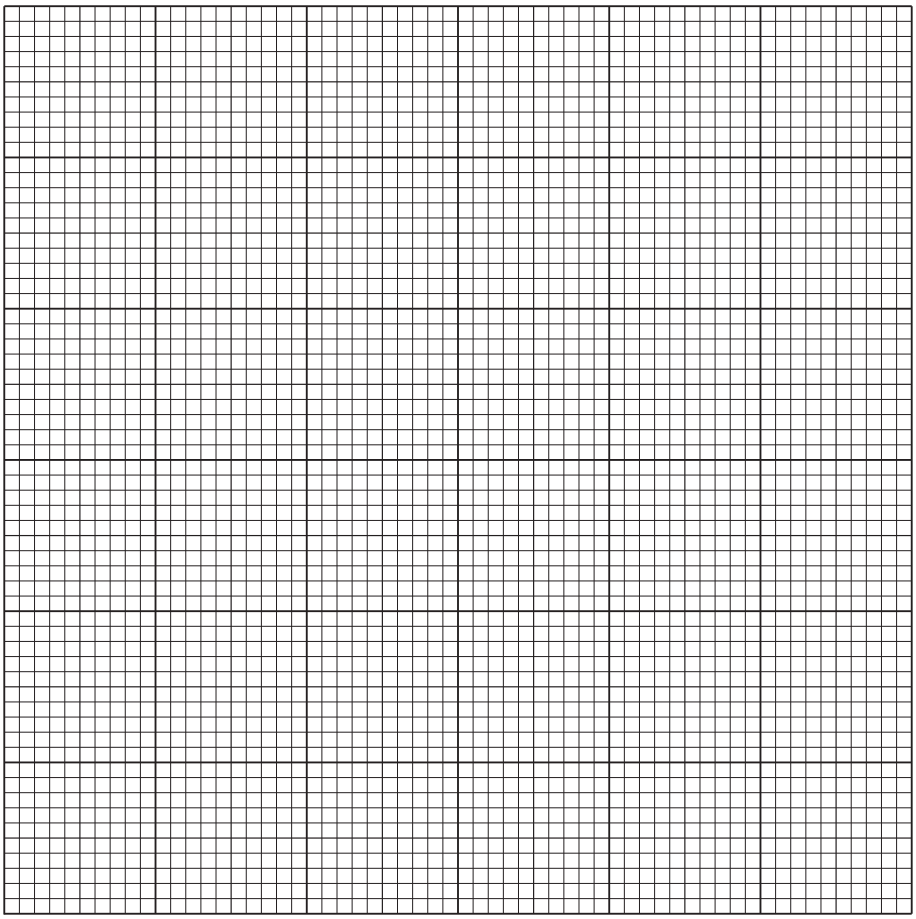
[Total: 16]

8 **(a)** The table shows the mass of farmed fish (aquaculture) produced by four countries in 2010 and 2015.

country	mass of farmed fish in 2010 / 1000 tonnes	mass of farmed fish in 2015 / 1000 tonnes	difference in mass of farmed fish / 1000 tonnes
Finland	11.7	14.8	3.1
Lithuania	3.2	4.4	1.2
Madagascar	10.8	22.6	.....
Portugal	8.2	9.3	1.1

(i) **Complete the table** by calculating the **difference** in mass of farmed fish for Madagascar between 2010 and 2015. [1]

(ii) Plot a bar chart to show the **mass** of farmed fish produced by each country in 2010 and 2015.



[4]

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(iii) Describe the trends in the mass of farmed fish from 2010 to 2015 for the four countries shown.

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..... [2]

(b) Suggest reasons why the total number of farmed fish in the world could change in the future.

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..... [2]

[Total: 9]

9 A student reads part of an article about deforestation.

Deforestation

Deforestation is happening in many parts of the world. This is causing a loss of biodiversity.

The country with the largest area of forest is the Russian Federation. It has a forested area of 8 149 300 km^2.

Brazil is second with a total forested area of 5 173 689 km^2. The rainforest in Brazil has a higher level of biodiversity than the larger forest in Russia, but this is in danger due to the high rate of deforestation.

Canada has the third largest area of forest, covering 4 916 438 km^2.

(a) Present the data from the article in a suitable table to show the area of forest in each of the countries.

[3]

(b) (i) State the meaning of *biodiversity*.

.....

..... [1]

(ii) Name **one** piece of apparatus that can be used to investigate biodiversity in a forest.

..... [1]

(iii) Suggest reasons why forest ecosystems can have different levels of biodiversity.

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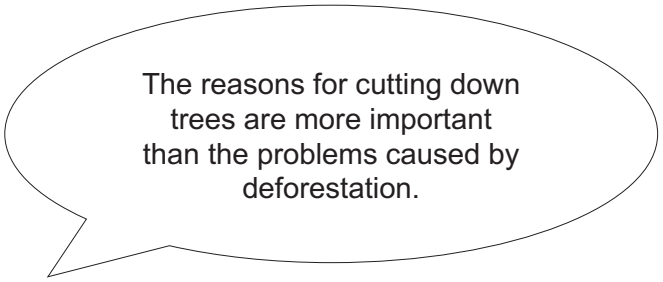
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..... [2]

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(c) The student says,



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

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..... [6]

[Total: 13]

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