

CANDIDATE  
NAME

--

CENTRE  
NUMBER

--	--	--	--	--

CANDIDATE  
NUMBER

--	--	--	--



**ENVIRONMENTAL MANAGEMENT**

**0680/12**

Paper 1

**October/November 2017**

**1 hour 30 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.

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.

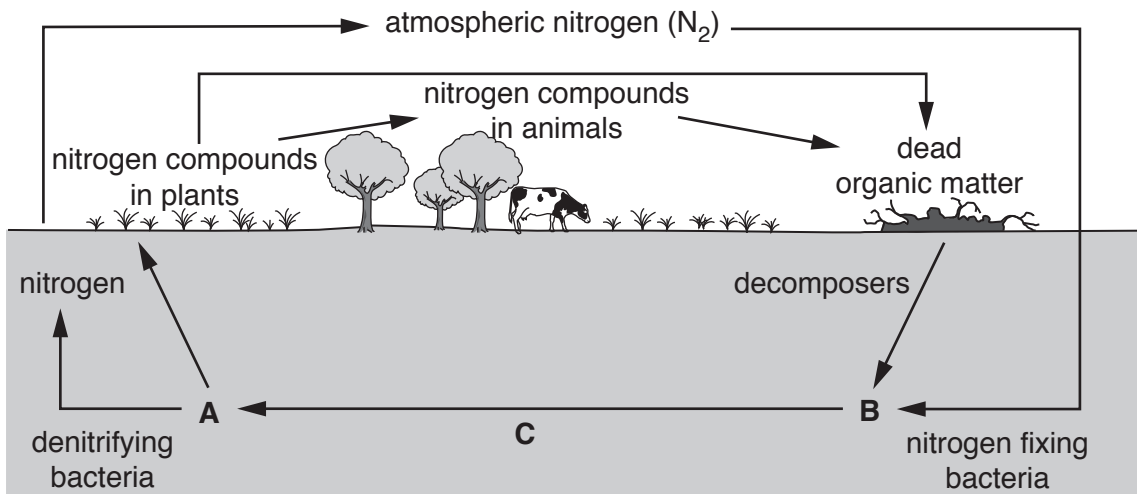
You may lose marks if you do not show your working or if you do not use appropriate units.

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 **14** printed pages and **2** blank pages.

1 The diagram shows the nitrogen cycle.



(a) (i) Match the letters, **A**, **B** and **C**, with the words in the list.

- ammonia .....
- nitrate .....
- nitrification .....

[2]

(ii) Explain why plants need nitrogen compounds.

.....  
 .....  
 .....  
 ..... [2]

(iii) If crop plants do not absorb enough nitrogen compounds, crop yields may be low. A farmer may use fertilisers to improve crop yield.

Explain **one** problem caused by the overuse of fertilisers.

.....  
 .....  
 .....  
 .....  
 ..... [4]

(iv) Suggest **one** way crop yields may be improved without the use of fertilisers.

.....

.....

.....

.....[2]

2 In 2015 a United Nations report stated that:

*‘Since 1990 2.1 billion people have gained access to improved sanitation. But 2.4 billion are still using unimproved sanitation facilities.’*

At the time of this report, the world population was 7 billion.

(a) (i) Calculate the number of people in the world with improved sanitation in 2015.

Space for working.

..... billion [1]

(ii) Calculate the percentage of the world population that used unimproved sanitation in 2015. Give your answer to one decimal place.

Show your working.

..... % [2]

(iii) Explain why access to clean fresh water is better in urban areas than it is in rural areas in some countries.

.....  
.....  
.....  
.....  
.....  
.....  
..... [3]

(b) (i) Circle **one** disease that is carried to humans by a vector. [1]

**bilharzia**      **cholera**      **malaria**      **typhoid**

(ii) Describe strategies used to control a named vector.

name of vector .....

strategies.....

.....

.....

.....

..... [3]

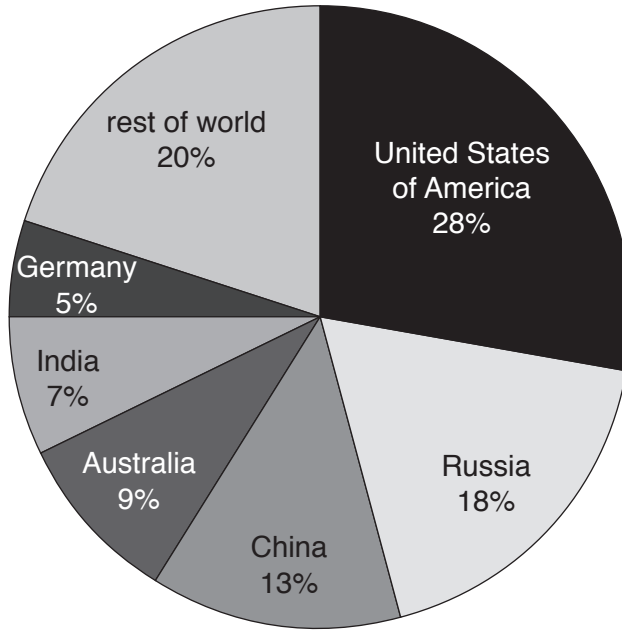
3 (a) (i) State **two** energy sources that are alternatives to fossil fuels.

1 .....

2 .....

[1]

The pie graph shows world production of coal by country in 2015. A large proportion of this coal is used to generate electricity.



(ii) Name the **two** countries which together account for nearly 50% of world coal production.

.....

.....[1]

(iii) World coal production in 2015 was 8000 million tonnes.

Calculate how many million tonnes of coal were produced by Australia in 2015.

Show your working.

.....million tonnes [2]

- (b) Transport is one of the biggest contributors to poor air quality. Electric cars are thought to offer a solution. The photograph shows a charging point for an electric car.



A website states that:

*'Electric cars are 100% emission free so if you drive one you are helping to provide better air quality for you, your family, and your community.'*

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

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[3]

- (ii) Describe how householders in developed countries could reduce their contribution to air pollution.

.....

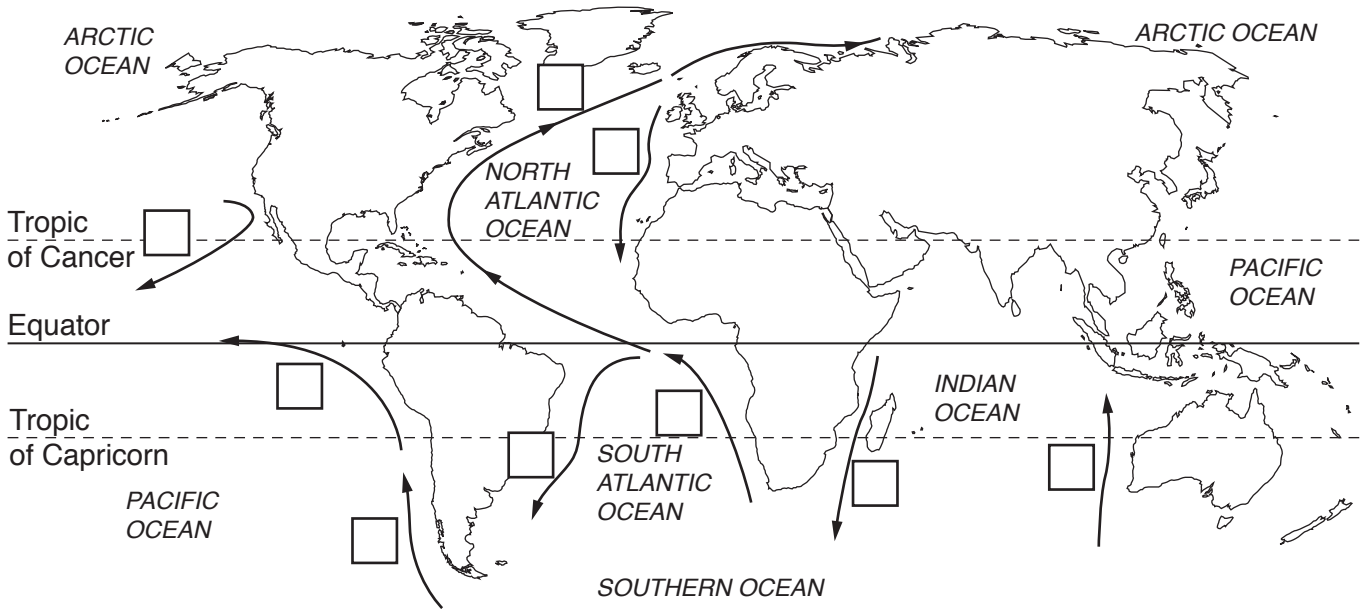
.....

.....

.....[3]



4 The map shows some major ocean currents.



- (a) (i) Label, in a box on the map, **one** cold current as C. [1]
- (ii) Label, in a box on the map, **one** warm current as W. [1]
- (iii) Explain how an ocean current can increase fish populations.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....[4]

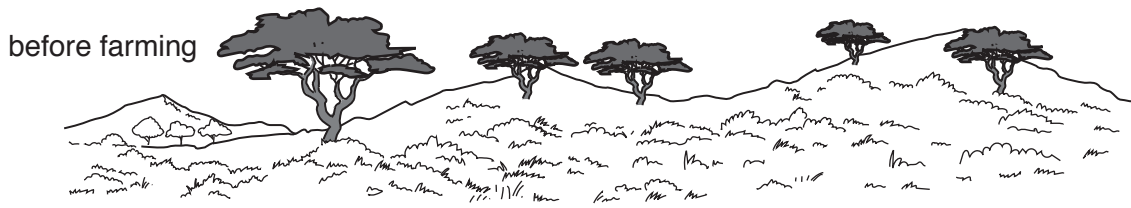
(b) (i) State **one** way in which pollution with raw sewage might affect water quality in the ocean.

.....  
.....[1]

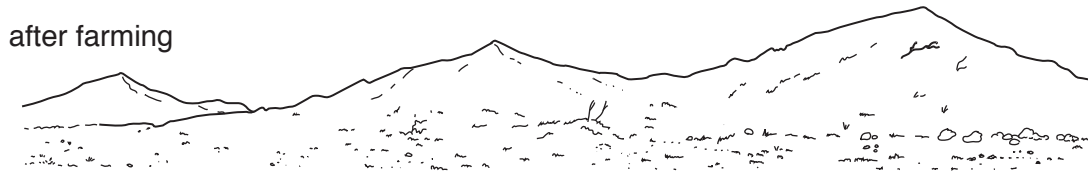
(ii) Explain how raw sewage can be managed to reduce its effects on water quality.

.....  
.....  
.....  
.....  
.....  
.....[3]

- 5 This diagram shows an area of land before it was farmed.



This diagram shows the same area after 20 years of farming.



- (a) Describe and explain how the land has changed.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

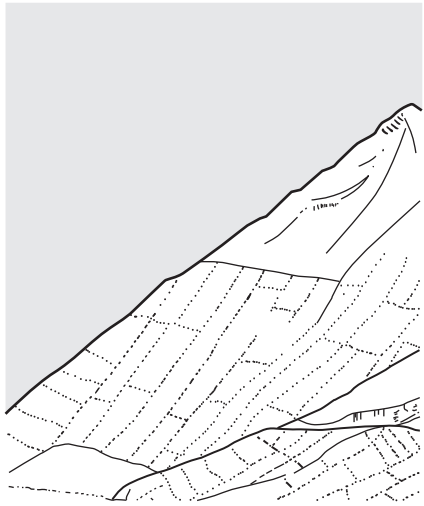
.....[4]

(b) (i) One land management strategy is terracing.

Draw and label a diagram to show the hillside after terracing.

[2]

before terracing



after terracing

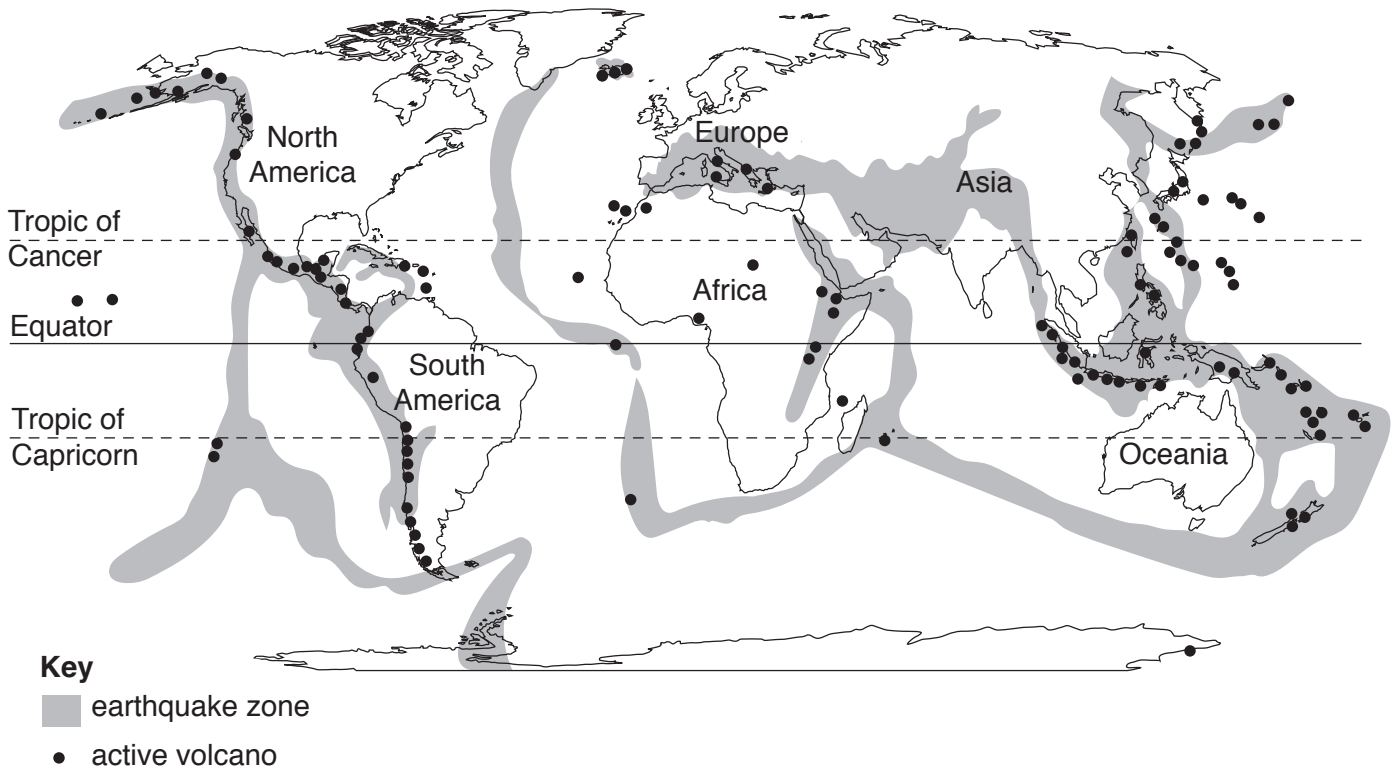
(ii) Explain how terracing reduces soil erosion.

.....  
.....  
.....  
..... [2]

(iii) Describe other benefits of terracing.

.....  
.....  
.....  
..... [2]

6 The map shows the world distribution of volcanoes and earthquake zones.



(a) (i) Compare the distribution of earthquake zones with that of volcanoes.

similarities .....

.....

.....

differences .....

.....

.....

[3]

(ii) Explain how an understanding of volcanic eruptions can reduce their impact on communities.

.....

.....

.....

.....

.....

.....

[3]

**(b) (i)** Nuclear energy does not contribute to acid rain or an increased global temperature.

Name **one** source of energy which does contribute to both of these problems.

.....[1]

**(ii)** Describe some of the problems which are associated with nuclear power.

.....  
.....  
.....  
.....  
.....  
.....  
.....[3]



**BLANK PAGE**

---

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 International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at [www.cie.org.uk](http://www.cie.org.uk) after the live examination series.

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