Cambridge IGCSE

Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

1730612924

ENVIRONMENTAL MANAGEMENT **0680/22**

Paper 2 **February/March 2016**

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 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 **both** 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.

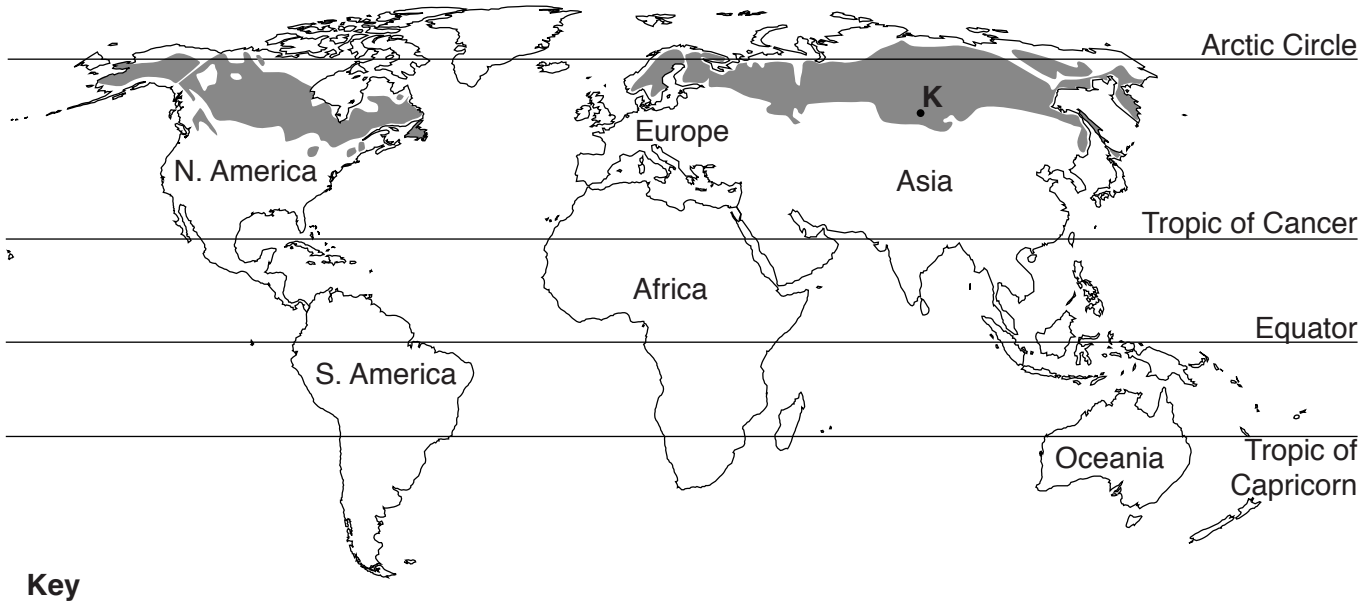
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **12** printed pages.

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CAMBRIDGE International Examinations

1 **(a)** Look at the map, which shows the location of the cool temperate climate zone.



Key

cool temperate climate zone

Describe the distribution of the cool temperate climate zone, as shown on the map.

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.....[3]

(b) Look at the table showing climate data for Krasnoyarsk. The location of Krasnoyarsk is shown by the letter **K** on the map above.

month	J	F	M	A	M	J	J	A	S	O	N	D
temperature / °C	–18	–16	–11	2	6	13	16	14	7	–1	–10	–17
precipitation / mm	4	5	3	6	25	36	31	53	43	23	13	10

(i) Calculate the annual range of temperature at Krasnoyarsk.

Space for working.

..... °C [1]

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(ii) Describe the climate of Krasnoyarsk.

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(iii) Temperatures need to be at least 6 °C for plants to grow. State the length of the growing season in Krasnoyarsk.

..... months [1]

(iv) Suggest why areas with a cool temperate climate have a low human population.

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(c) Look at the photograph of vegetation in the cool temperate climate zone.



(i) Briefly describe the vegetation shown in the photograph.

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(ii) Describe and explain how trees in the cool temperate climate zone are adapted to the climate.

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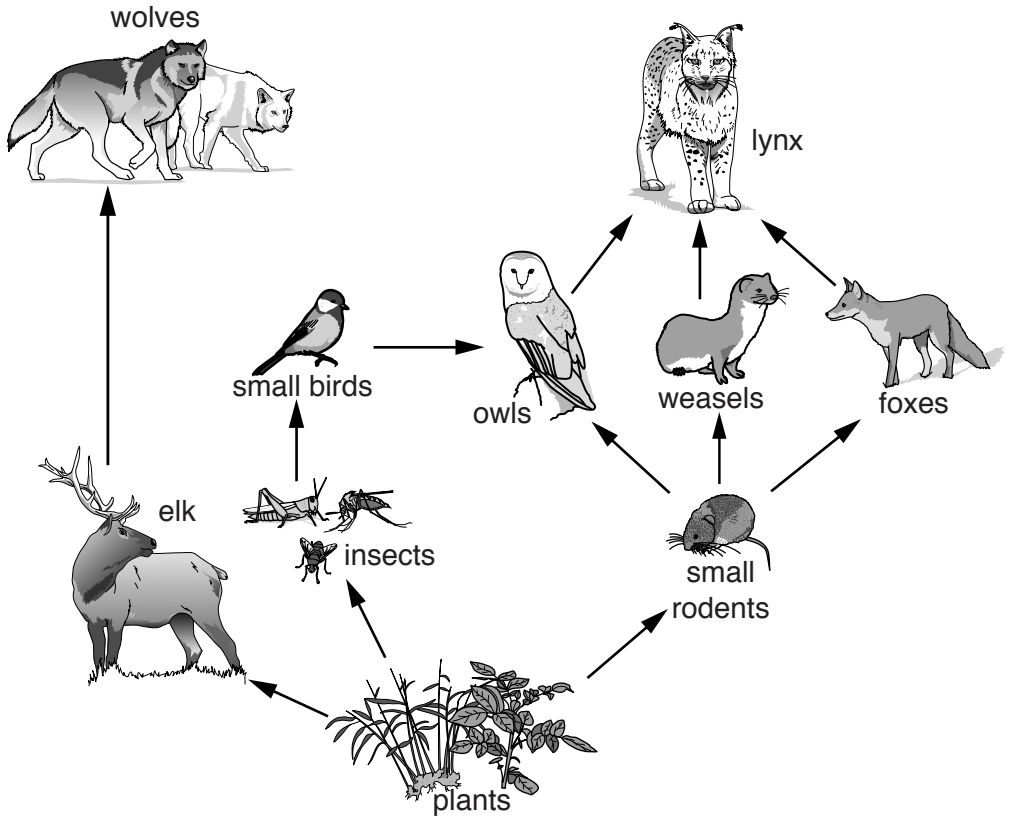
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(d) Look at the diagram of a food web in a coniferous forest ecosystem.



(i) Explain the meaning of the term *ecosystem*.

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(ii) Explain, using examples from the diagram, the difference between a producer and a consumer.

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(iii) Explain the roles of soil organisms, such as bacteria, worms and fungi, in the ecosystem.

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(iv) Some parts of the coniferous forest are under threat from logging. State **two** uses of the wood.

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(v) Describe the effects of logging on the coniferous forest ecosystem shown in the food web diagram.

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(e) 'Coniferous forests can be logged **and** the ecosystem conserved.' How far do you agree with this statement? Give reasons for your answer.

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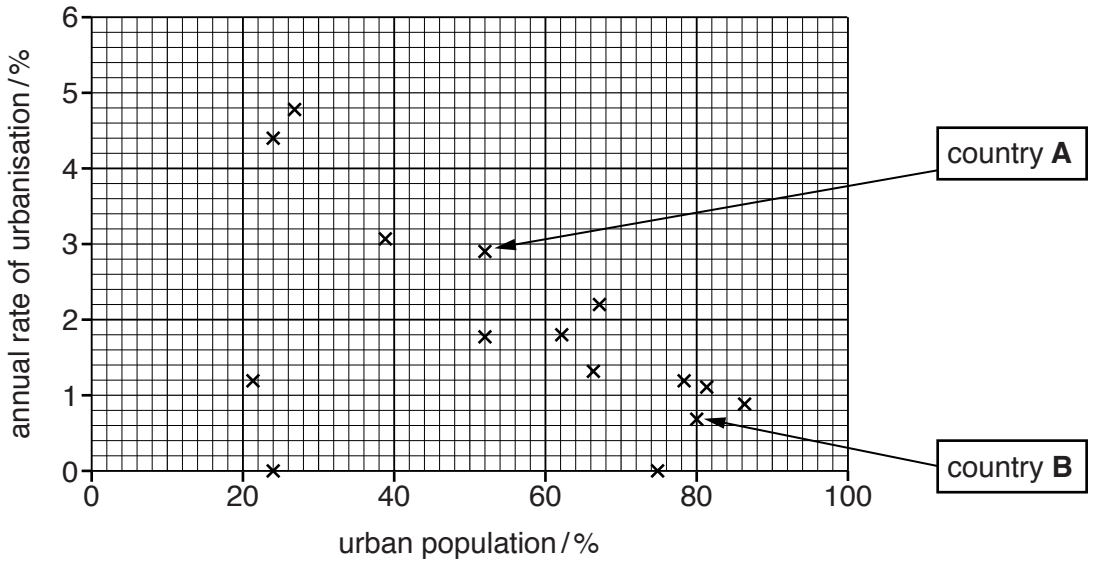
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2 **(a)** Look at the graph, which shows information about urbanisation. Each cross on the graph indicates a country. For example, country **A** has 52% of its population living in urban areas and an annual rate of urbanisation of 2.9%.



(i) State the urban population and the annual rate of urbanisation for country **B**.

urban population ..... %

annual rate of urbanisation ..... %
[2]

(ii) On the graph mark the position of Lesotho, which has 28% urban population and 3.6% annual rate of urbanisation. [1]

(iii) Describe the relationship between urban population and the annual rate of urbanisation shown on the graph.

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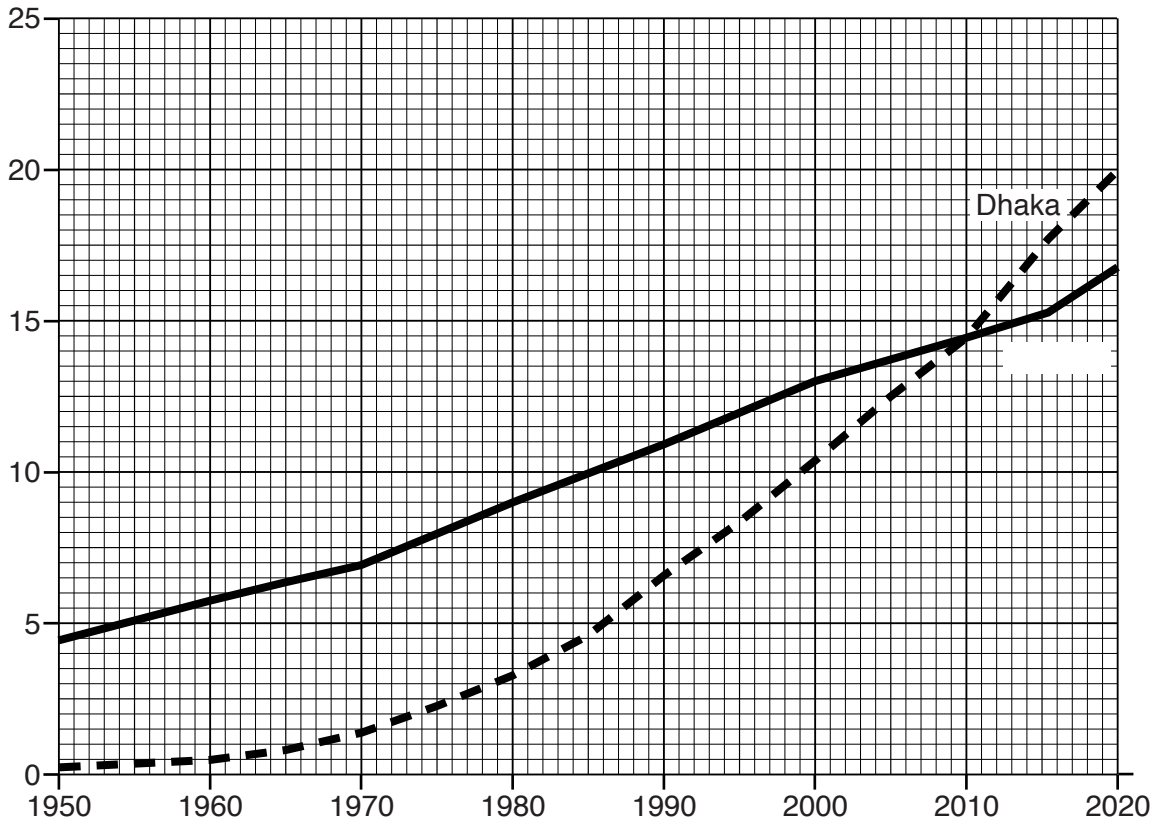
(iv) Suggest **one** reason for the relationship you have described in **(iii)**.

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(b) Look at the graph, which shows the populations of Dhaka and Kolkata, cities in developing countries. The figures after 2013 are predicted figures.



(i) State the population of Dhaka in 1970 and its predicted population in 2020.

1970 ..... million

2020 ..... million
[2]

(ii) Using data from the graph, compare the population growth of Kolkata and Dhaka.

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(iii) Explain why cities in developing countries are growing rapidly.

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(iv) Explain why the rapid growth of cities often causes high levels of air pollution and water pollution.

air pollution .....

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water pollution .....

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(v) Explain how human health problems can be caused by air pollution **and** water pollution in large cities.

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(c) Look at the table of population and water consumption figures.

country	total population / millions	national average daily water consumption / million litres	average daily water consumption per person / litres
Bangladesh	170	8500	50
India	1200	168 000	.....
USA	320	184 000	.....

(i) Complete the table by calculating the average daily water consumption per person for India and for the USA. [2]

(ii) Suggest why water consumption per person is much higher in developed countries such as the USA than in developing countries such as Bangladesh.

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(iii) Suggest reasons why water consumption per person is likely to increase in the future.

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(d) 'Desalination uses large amounts of energy, but is the best way to overcome the world shortage of fresh water.' How far do you agree with this statement? Give reasons for your answer.

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