Cambridge IGCSE

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER				

ENVIRONMENTAL MANAGEMENT

0680/21

Paper 2

May/June 2017

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.

CAMBRIDGE
International Examinations

[Turn over

1 (a) State a weather instrument used to measure:

temperature ....

wind speed ....

atmospheric pressure ....

rainfall. .... [4]

(b) The climate graph shows data for a weather station in a savanna climate.
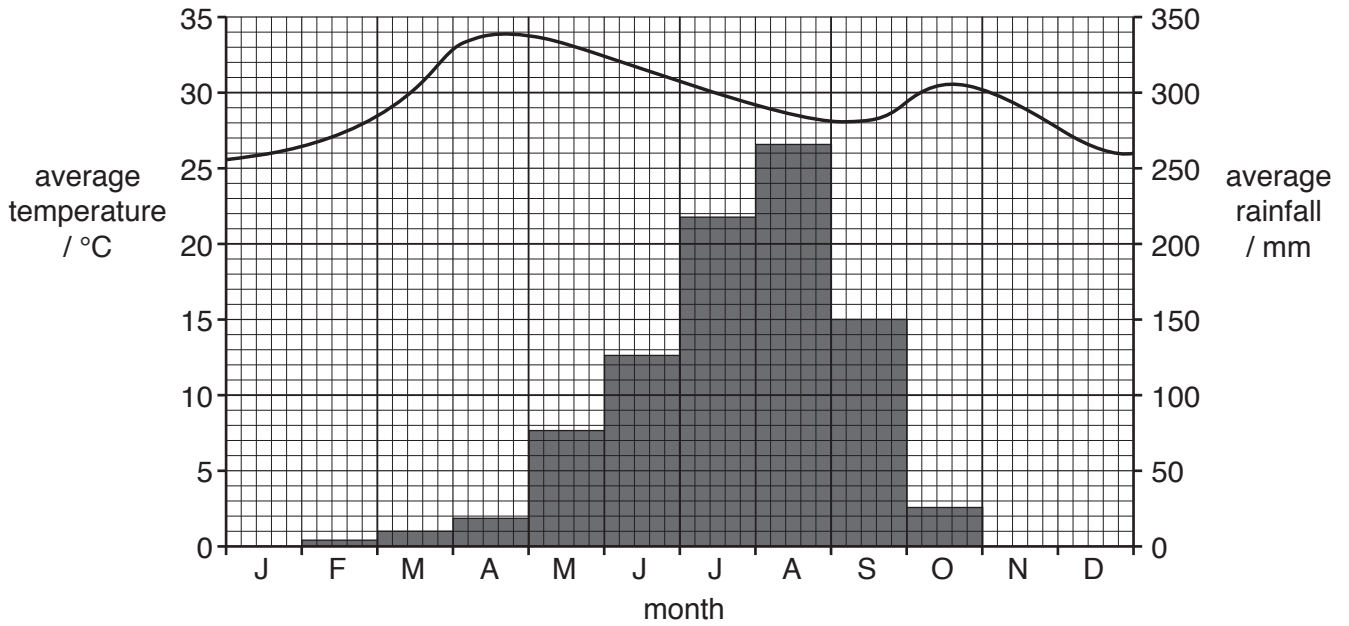
(i) State the highest monthly rainfall and the month in which it occurs.

rainfall .... mm

month .... [2]

(ii) In the dry season monthly rainfall is less than 30 mm.

State the length of the dry season for this weather station.

.... months [1]

(iii) Describe the temperature pattern during the year.

....

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....

....

....[3]

(c) The photograph shows a giraffe grazing on savanna vegetation in the dry season.

(i) Describe the vegetation shown in the photograph.

....

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....

....

....[3]

(ii) Suggest how the vegetation will change in the wet season.

....

....

....

....[2]

(iii) The photograph shows producers and a consumer.

Define both these terms.

producer ....

....

consumer ....

....
[2]

(iv) Parts of the savanna are increasingly being grazed by goats and cattle.

Suggest how this will affect the ecosystem shown in the photograph.

....

....

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....

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....

....[4]

(d) The graph shows the population of Kenya from 1950 to 2015.

(i) State the population of Kenya in 1950 and in 2015.

population in 1950 .... million

population in 2015 .... million

[2]

(ii) Use the graph to predict the population of Kenya in 2030.

.... million [1]

(iii) Explain why population growth continues to increase rapidly in many developing countries.

....

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....

....[4]

(e) The graph shows a population pyramid for Kenya in 2014.

age / population pyramid for Kenya showing male and female populations by age group from 0–4 to 85–89, with population in millions on the x-axis from 4 to 0 (male) and 0 to 4 (female).

(i) Complete the population pyramid by drawing in the two missing bars.

male age 20–24	2.0 million
female age 5–9	3.1 million

[2]

(ii) Suggest problems Kenya's government may face because of the population structure shown in the population pyramid.

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....[4]

(f) 'Reducing the world's population growth is the best way to solve environmental problems.'

How far do you agree with this statement? Give reasons for your answer.

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....[6]

2 **(a)** The map shows the location of coral reefs.

(i) Describe the location of coral reefs as shown on the map.

....

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....

....[3]

(ii) Suggest **one** reason why coral reefs are not found in the North Atlantic Ocean or the North Pacific Ocean.

....

....[1]

(b) The graph shows the number of coral species and the number of fish species living on reefs.
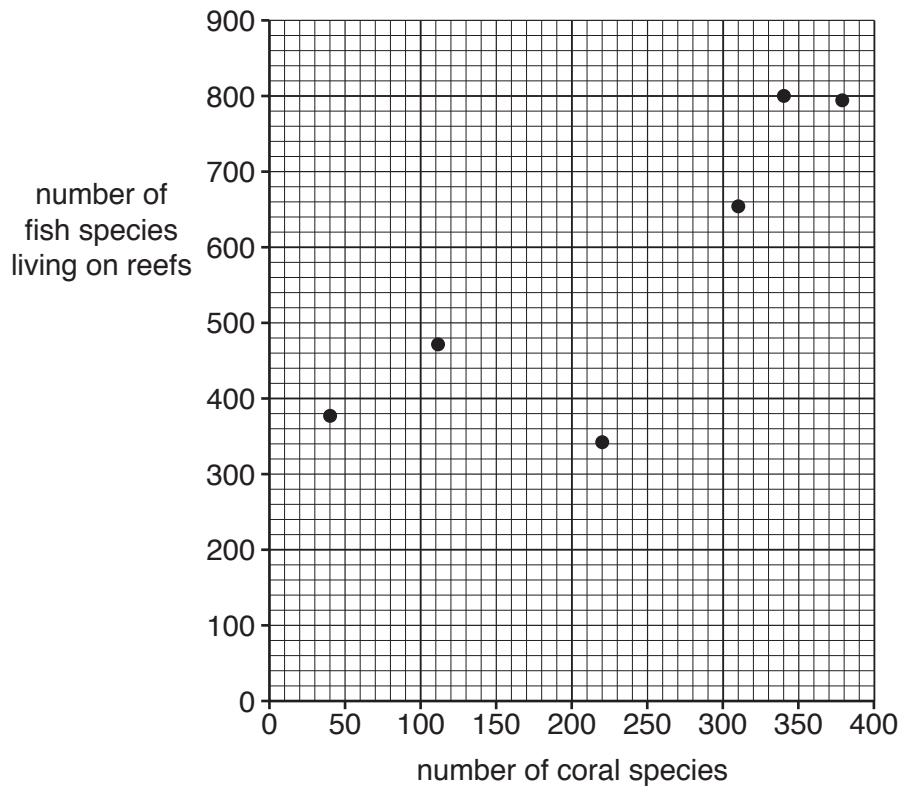
Describe the relationship between the number of coral species and the number of fish species living on reefs.

....

....

....

....[2]

[Turn over

(c) The graph shows the percentage of coral reefs at risk from overfishing.

Key

▨ low risk

⦂ medium risk
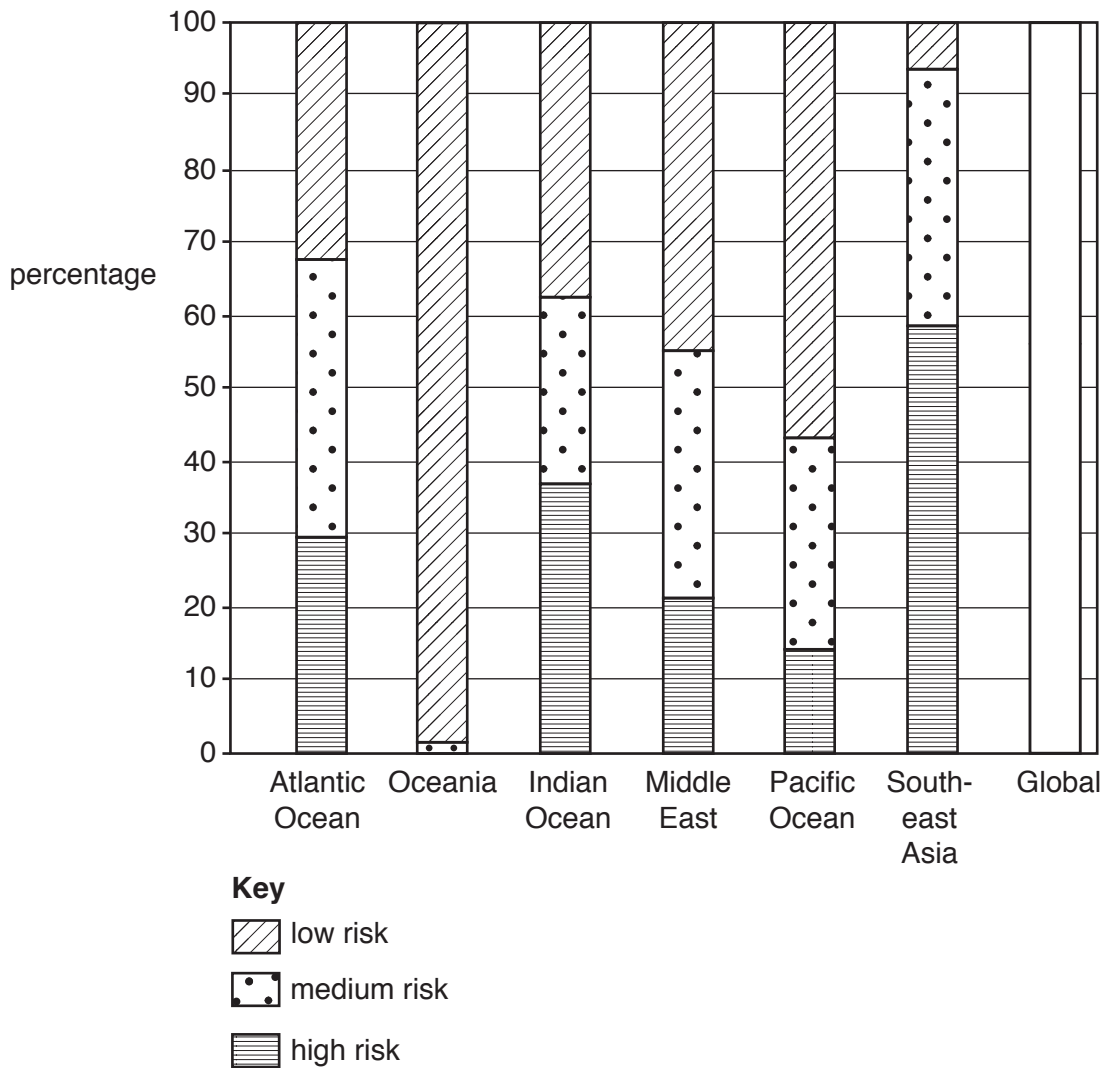
▤ high risk

(i) Complete the global column using the following figures.

high risk	27%
medium risk	30%
low risk	43%

[2]

(ii) Use the graph to complete the following paragraph.

The area where coral reefs are at least risk from overfishing is ....

The reefs in Southeast Asia are most at risk from overfishing, with .... % at

high risk and just 7% at .... risk. [3]

(iii) Suggest why the risk to coral reefs from overfishing is higher in some areas than in others.

....

....

....

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....[3]

(iv) Give **one** reason why the fish catch from the oceans has increased.

....

....[1]

(v) Describe strategies that can be used to reduce overfishing.

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....[4]

(d) The diagram shows a simplified food web for a coral reef.

sharks

birds

seals

predatory
fish

invertebrates

fish

crown-of-thorns
starfish

corals

zooplankton

phytoplankton
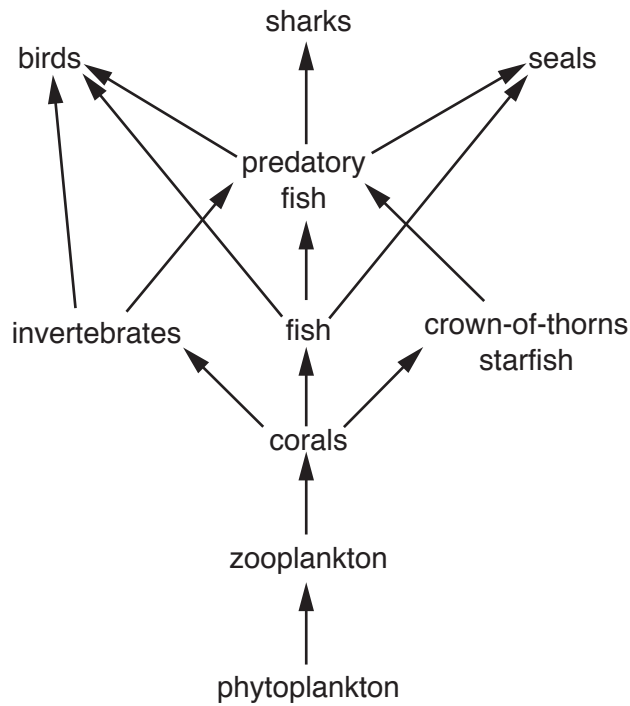
(i) State the producer in the food web shown.

....[1]

(ii) Complete the food chain diagram.

seals

phytoplankton
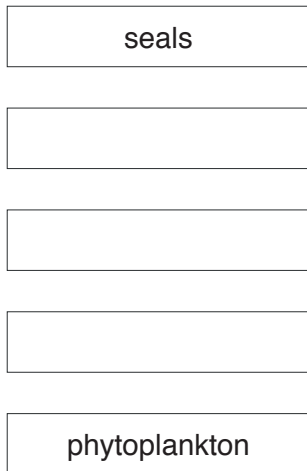
[3]

(iii) Describe the changes to the food chain in **(ii)** if the number of seals decreased.

....

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....[3]

(iv) Crown-of-thorns starfish have few predators because they are covered in spines and contain a chemical which tastes unpleasant. In one year each starfish can consume $6\,m^2$ of coral.

Explain why crown-of-thorns starfish can destroy coral reefs.

....

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....[2]

(e) The map shows a coastal area.
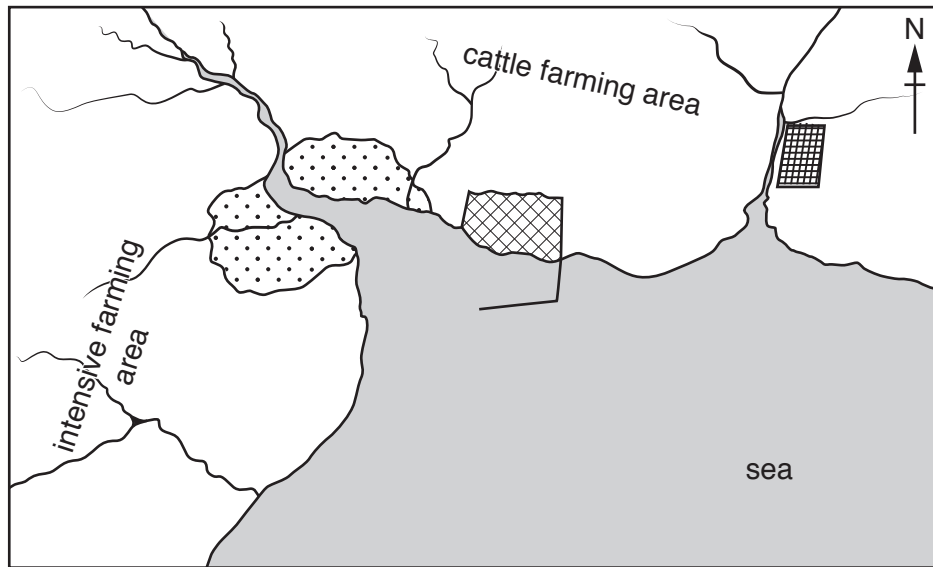
not to scale

Key

☐	city
☒	oil refinery
▦	lead mine and processing plant
⌗	rivers
⌐	harbour

Explain how each of the following may damage life in the sea.

the oil refinery ....

....

....

....

farming ....

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lead mining and processing ....

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[6]

(f) Explain why marine pollution is difficult to control.

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....[6]

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