UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

CANDIDATE NAME									
CENTRE NUMBER						CANDIDATE NUMBER				

5087379536

ENVIRONMENTAL MANAGEMENT **0680/11**

Paper 1 **October/November 2010**

1 hour 30 minutes

Candidates answer on the Question Paper.

Additional Materials: Ruler

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 a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

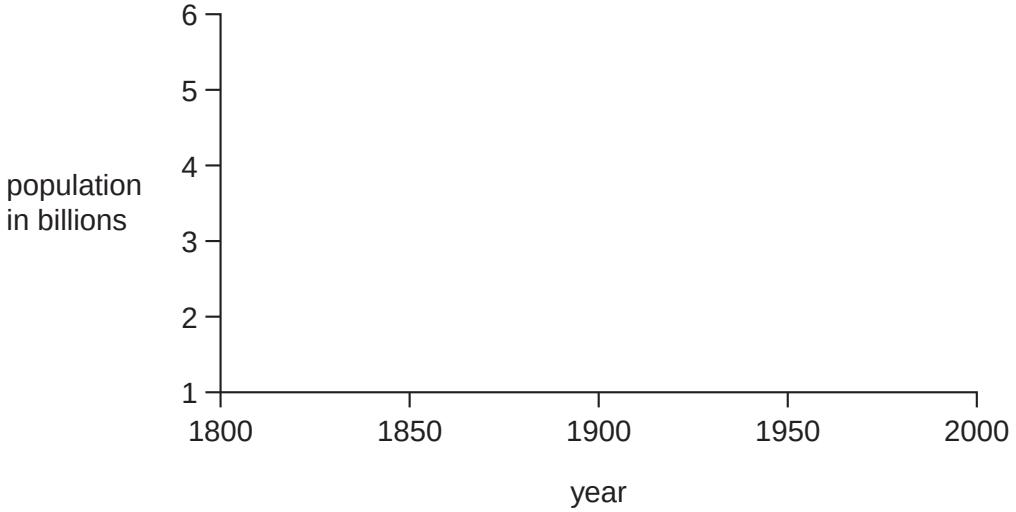
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
Total	

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

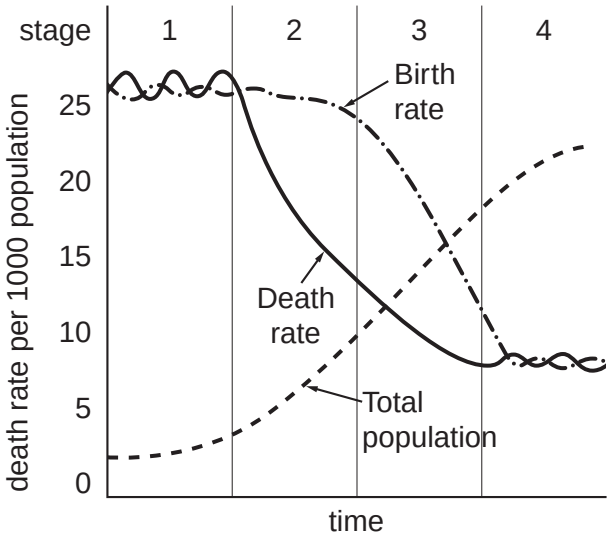
For Examiner's Use

1 (a) (i) In the axes below, draw a sketch line graph to show the way in which world population has grown over the last 200 years.



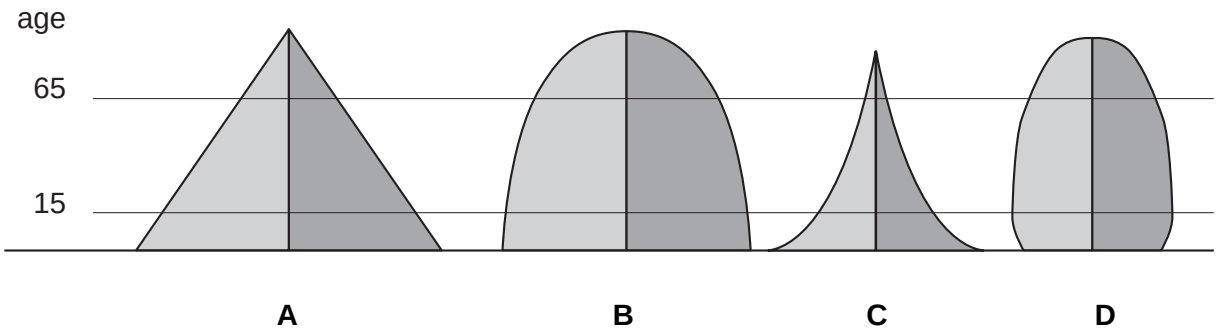
[2]

(ii) Eventually, as a country becomes more economically developed its population stops growing. Look at the diagram below which shows the Demographic Transition Model (DTM) of populations.



Diagrams A to D are sketches of the age pyramids for the stages in the DTM graph.

For Examiner's Use



Complete the table below to show the correct pyramid, **A**, **B**, **C** or **D**, for each stage of the DTM graph.

stage	pyramid letter
1	
2	
3	
4	

[4]

(b) (i) Population size can change due to migration. Migration is caused by push and pull factors.

Give an example of a health care service that is a push factor.

.....

.....

Give an example of a different health care service that is a pull factor.

.....

..... [2]

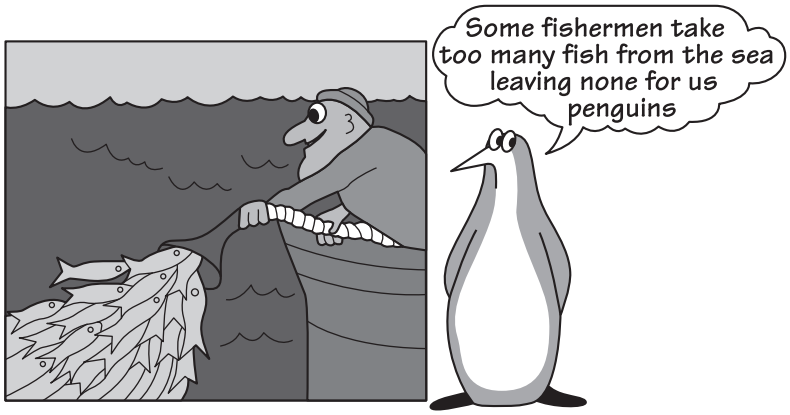
(ii) Other than health care services, state **two** other **pull** factors causing rural to urban migration.

.....

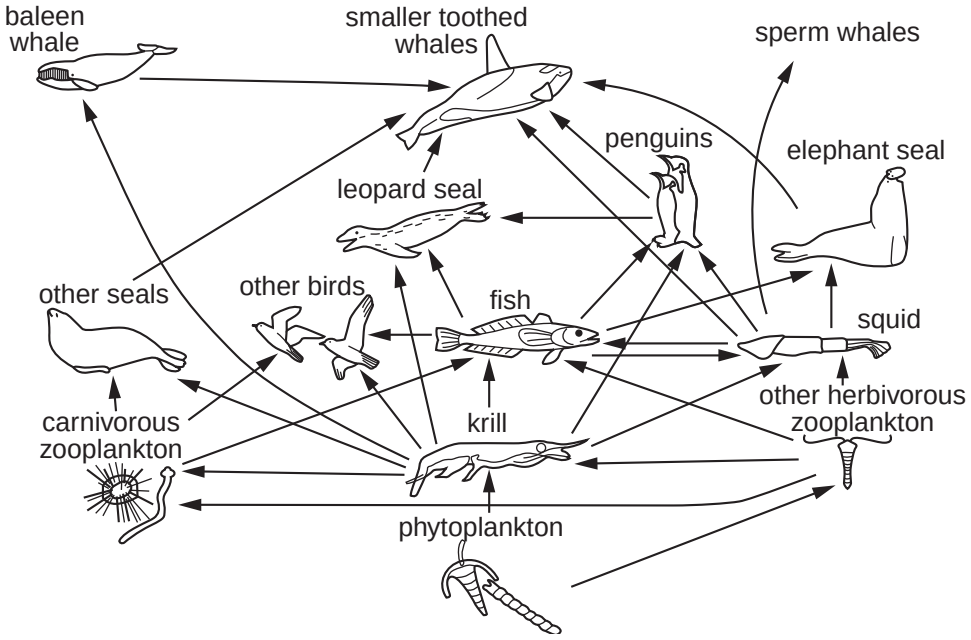
.....[2]

2 Look at the cartoon and food web diagram below.

For Examiner's Use



Antarctic Ocean Food Web



(a) (i) If the penguins cannot get enough fish to eat, what else could they feed on?

.....

..... [2]

(ii) What organism in the food web would cause greater problems to the penguins if humans removed it?

..... [1]

(iii) Apart from humans, what **four** other organisms compete with penguins for fish?

.....

.....

..... [3]

For Examiner's Use

(b) (i) Interference with food webs can have serious consequences. For example, poisons such as pesticides are put into the environment. A pond near a crop field is infested with harmful insects. The farmer sprays the field with a pesticide. Wind blows some of the pesticide onto marsh plants. Each plant receives 1 unit of pesticide which stays on it. A minnow that eats 100 marsh plants in one year ends up with 100 units of pesticide. A perch that eats 50 minnows in one year ends up with 5000 units.

Calculate how much pesticide will end up in the body of a hawk which consumes 20 perch in one year. Show your working.

..... units [2]

(ii) A build up of pesticide can cause problems to the animals at or near the top of the food chain, like the hawk. State and describe **one** way in which a farmer can control pests without using pesticides.

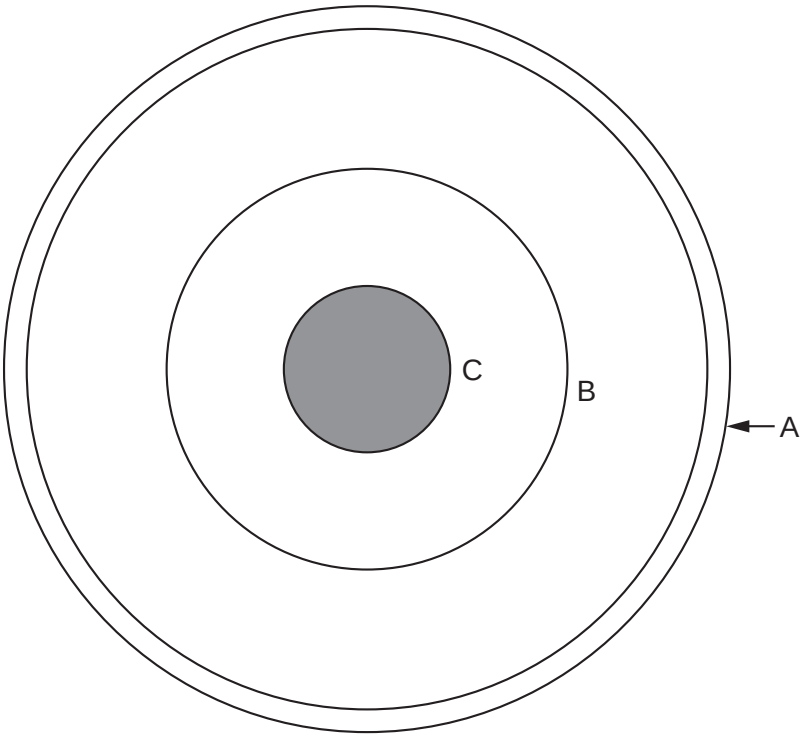
.....

.....

..... [2]

For Examiner's Use

3 (a) (i) The diagram shows a section through the Earth.



Name the layers labelled **A**, **B** and **C** on the diagram.

A .....

B .....

C .....

[3]

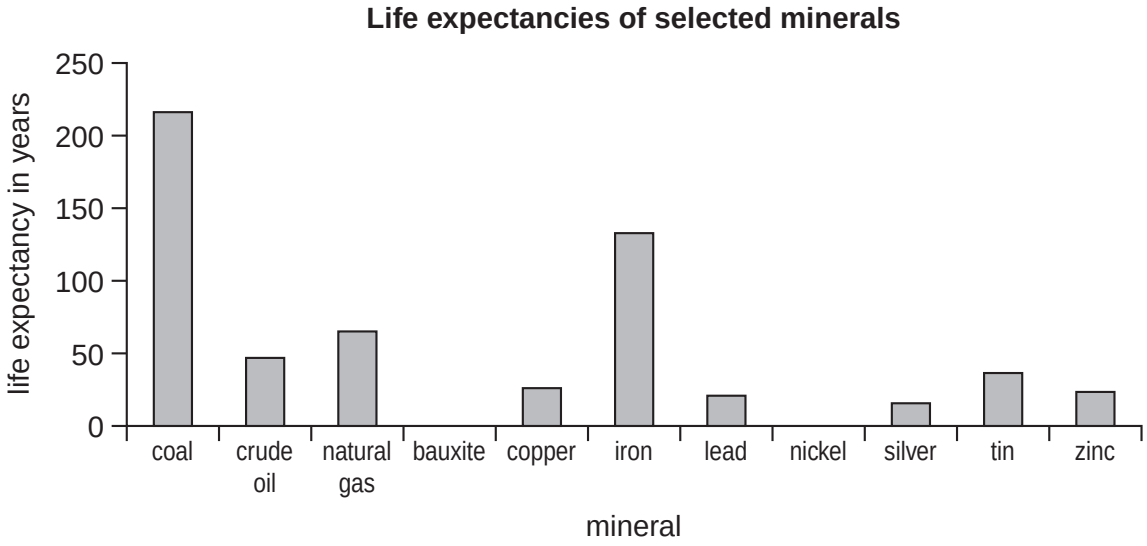
(ii) The earth consists of many kinds of rock, but they can be divided into three types. Complete the table.

type		sedimentary	metamorphic
how formed	by cooling and solidification of molten rock		by heat and pressure
example	granite		

[4]

(b) The rocks of the Earth contain reserves of many minerals, such as iron, coal and bauxite. The graph shows the 'life expectancy' of some minerals (how long they will last at present rates of use).

For Examiner's Use



(i) The life expectancy for bauxite is 202 years and for nickel 41 years.

Complete the graph for nickel and bauxite. [2]

(ii) Name the mineral which is likely to run out first.

..... [1]

For Examiner's Use

4 (a) (i) What is **weather**?

.....

.....

.....

..... [2]

(ii) Choose **two** elements of weather and explain how they can be measured accurately.

.....

.....

.....

.....

..... [4]

(b) (i) The table below gives climate data for Lusaka in Kenya. Use the data to complete the **two** graphs on the opposite page.

	month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
temperature in °C	22.5	22.5	22.5	20.5	18.5	16.5	16	18.5	22	24.5	23.5	22
rainfall in mm	186	155	100	31	4	0	0	0.3	20	22	87	156

[2]

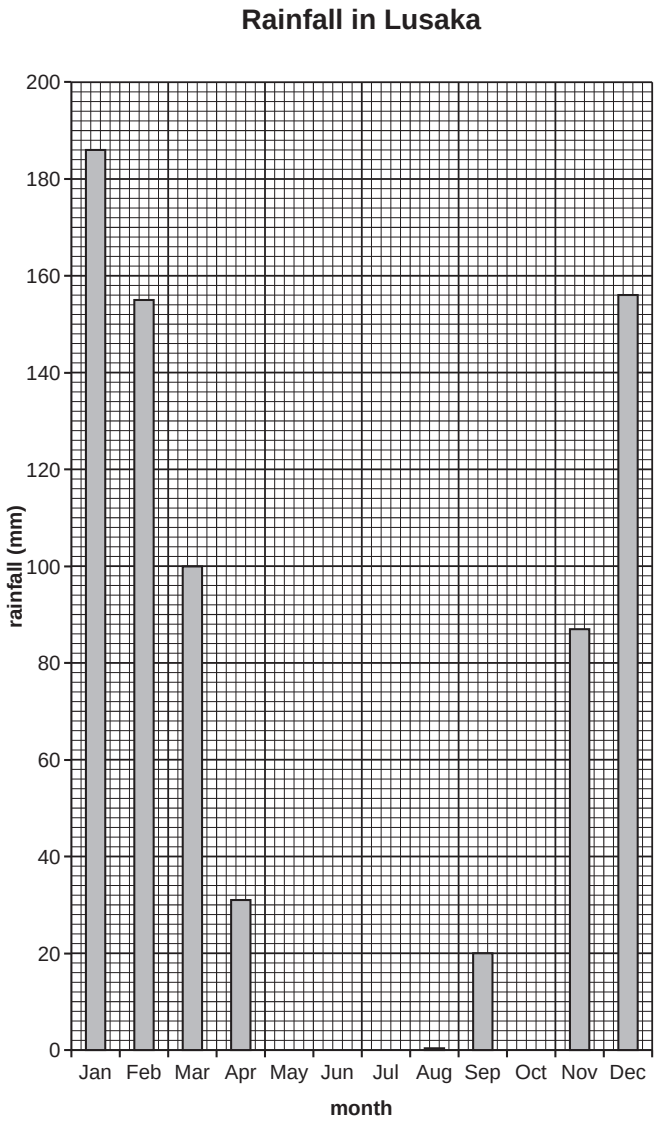
(ii) State the type of climate found in Lusaka. Give a reason for your answer.

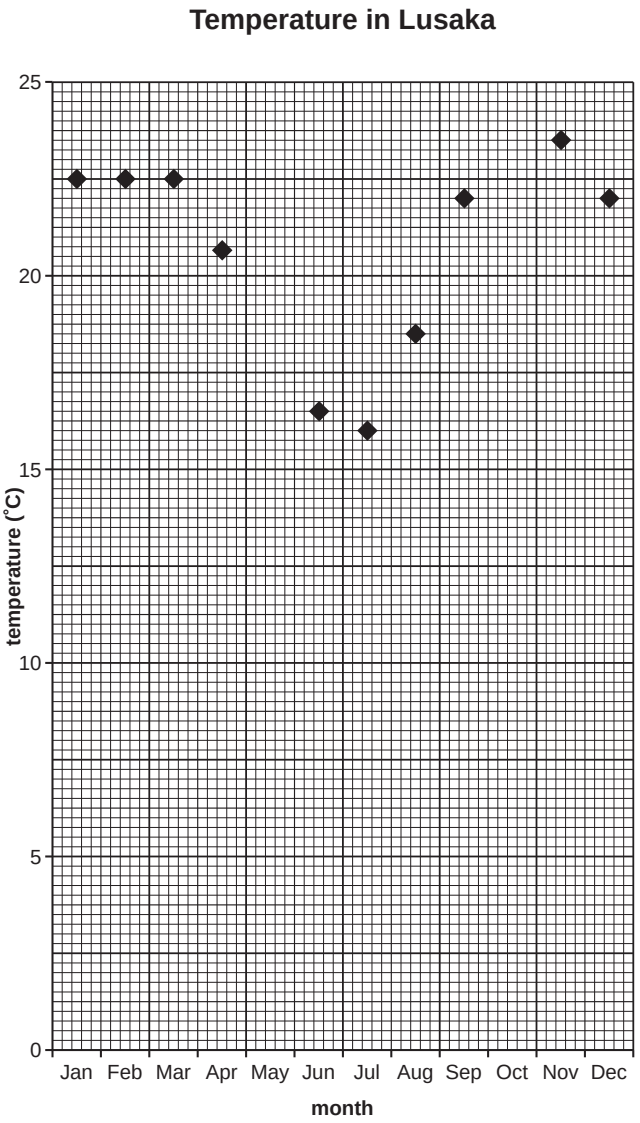
.....

.....

.....

..... [2]



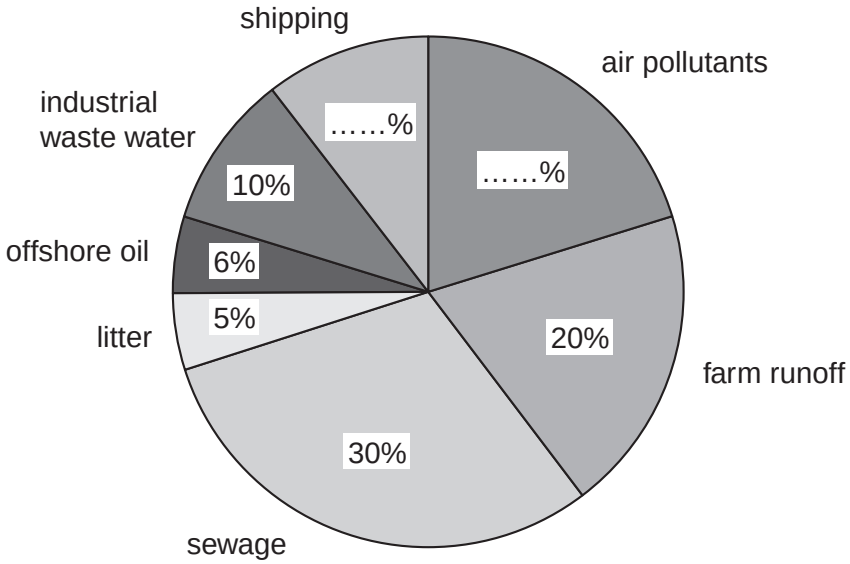


For Examiner's Use

5 Look at the pie graph.

For Examiner's Use

Pollutants Entering the Oceans



(a) (i) The percentage figures for air pollutants and shipping are missing. The figure for air pollutants is double that for shipping. Work out the missing figures and complete the chart. [2]

(ii) Sewage and farm runoff have similar effects on the ocean. Describe and explain these effects.

.....

.....

.....

.....

..... [4]

(b) (i) Why is marine pollution considered to be an international problem?

.....

.....

..... [2]

(ii) State **one** way of preventing oil spills at sea.

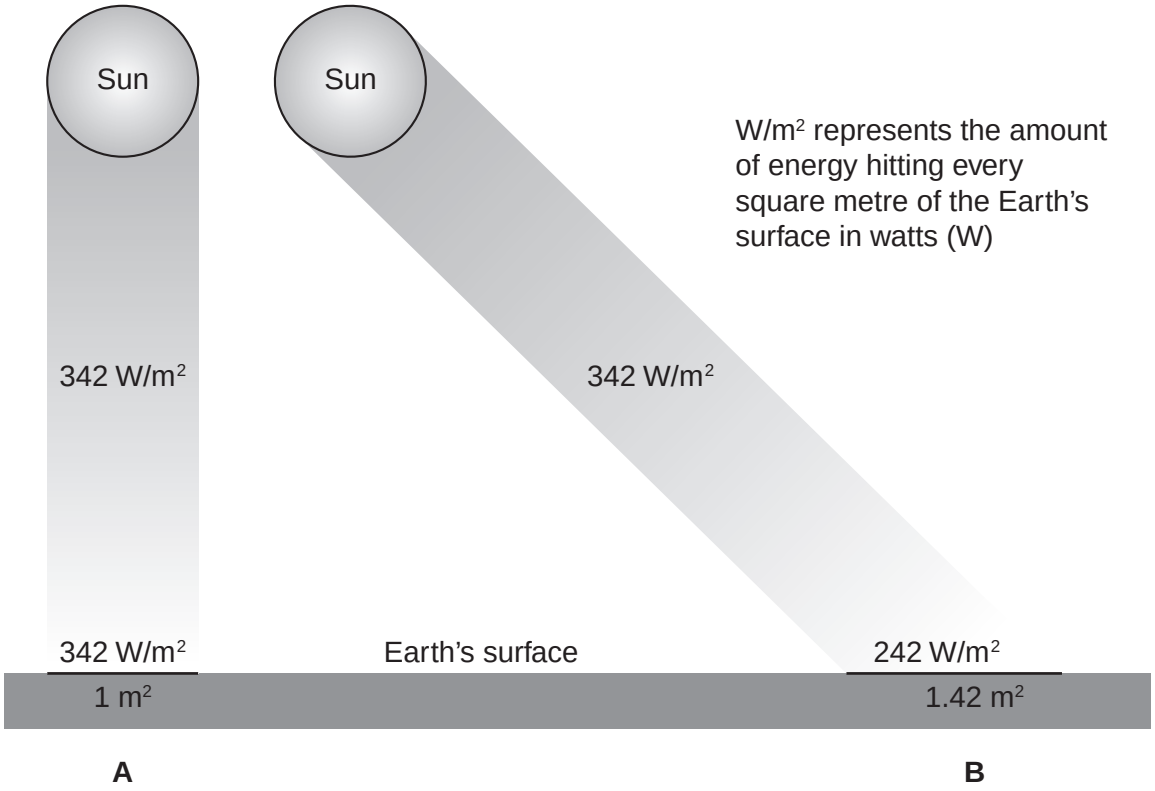
..... [1]

(iii) State **one** way of dealing with oil spills from ocean-going tankers.

..... [1]

6 Look at the following diagram showing how the Sun's rays strike the Earth at the equator, **A**, and near the poles, **B**.

For Examiner's Use



(a) (i) What is insolation?

.....[1]

(ii) How much more energy, as a percentage, strikes the Earth's surface at **A** rather than at **B**? Show your working.

..... % [2]

(iii) Because more energy is received at **A**, temperatures are higher. State **two** factors, other than distance from the equator, which can affect the temperature of a place.

.....

.....[2]

For Examiner's Use

(b) (i) Solar energy can be used as an alternative to fossil fuels. Why is it a good idea to find substitutes for fossil fuels such as coal and oil?

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.....

.....[3]

(ii) Apart from solar power, describe another source of energy that could be used as an alternative to fossil fuels.

.....

.....[2]