

Cambridge Assessment International Education

Cambridge International General Certificate of Secondary Education

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

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ENVIRONMENTAL MANAGEMENT

0680/11

Paper 1 Theory

October/November 2019

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 in the spaces at the top of this page.

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 15 printed pages and 1 blank page.



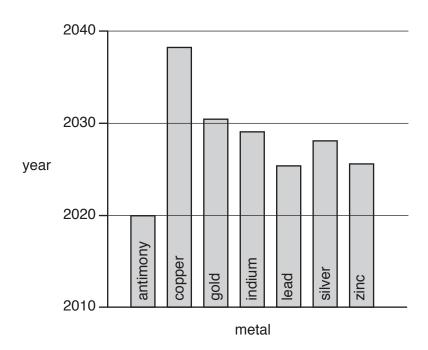
Section A

	Many	minerals	are in sl	hort supply	and new	mineral	deposits need	to be f	found.
--	------	----------	-----------	-------------	---------	---------	---------------	---------	--------

	the air.
	Suggest how photographs taken from the air might help to locate mineral deposits.
	[2]
(b)	Describe one other method of exploration for finding new mineral deposits.

(a) One method of exploration for finding new mineral deposits is using photographs taken from

(c) The bar chart shows estimates of when some metals are predicted to run out. The estimates were made in 2010.



(i)	Identify which metal is predicted to run out first.	

(ii) Identify the metal(s) that are predicted to still be available after 2030.

[Total: 5]

2 ((a)	An ecos	ystem c	onsists (of abiotic	and	biotic	compo	nents.
_ ,	\ - -/		,			••••			

Complete the ecosystem table, using the following words.

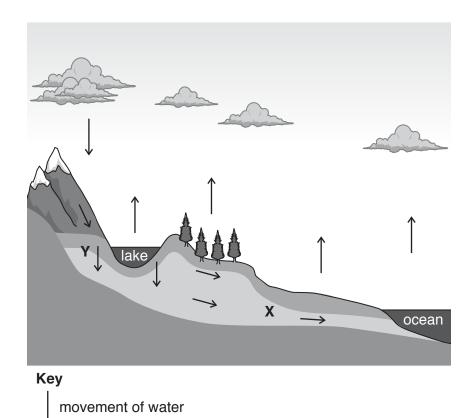
bacteria	fungi	insects	light
oxygen	plants	soil pH	temperature

ecosystem				
biotic components				

Describe how changes in the availability of water may affect plant growth in an ecosystem.
[3
[Total: 6

[3]

3 The diagram shows part of the water cycle.



(a) (i) State the water store shown at X.

	(ii)	State the process shown at Y .	[1]
(b)	Nan	ne two different types of precipitation.	[1]
	2		 [2]

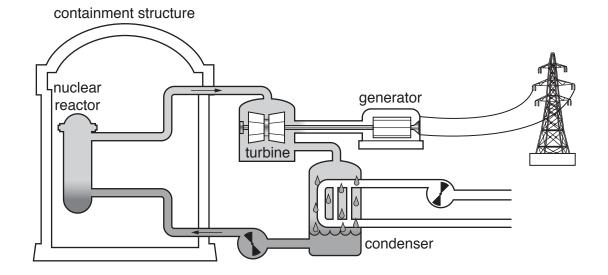
[Total: 4]

Atm	nospheric pollution may be harmful to humans.
One	e example of atmospheric pollution is smog.
(a)	Explain how smog is formed.
	[3]
(b)	State two ways smog is harmful to human health.
	1
	2
	[2]
	[Total: 5]

4

Section B

5 The diagram shows some of the processes used to generate electricity in a nuclear power station.



(a)	ose the diagram to describe now electricity is generated within a nuclear power station.	
		•••
	[/	4]
(b)	Describe three reasons why using nuclear power to generate electricity is better for the environment than using coal.	ie
	1	
	2	
	3	
	[[3]

				[3
		power station is expensive. The tab ear power station.	le shows the percen	tage costs fo
		costs	percentage costs	
		steam supply system	12	
oguinmont	ocata	generating equipment	12	
equipment	COSIS	mechanical equipment	16	
		instrumentation and control system	8	
		building materials	12	
other costs	5	labour		
		design	10	
		fuel	3	
		total	100	
(i) Comple	ete the	able by calculating the percentage cos	st for labour.	[′
(ii) The po	wer sta	tion is predicted to cost 14 billion USD	to build.	
Calcula	ate the t	otal equipment costs for building the p	ower station.	
				USD [2
		ver station creates radioactive waste. difficult.	The management of	f this waste i
The mo	ost danç station v	gerous waste costs 93 000 USD per m will produce 12 m ³ of the most dangero	³ to manage. It is esti ous waste each year.	mated that th
power		estimated cost of managing this waste	ner vear	
power	ate the e	stimated cost of managing this waste	por your.	
power	ate the e		por your.	HeD to

6 The table shows official data on the world fish catch from 2006 to 2014.

year	2006	2007	2008	2009	2010	2011	2012	2013	2014
wild fish catch / million tonnes	90.0	90.3	89.7	89.6	88.6	90.4	89.9	88.8	90.4
farmed fish catch / million tonnes	47.3	49.9	52.9	55.7	59.9	63.6	67.1	71.5	75.9
total fish catch / million tonnes	137.3	140.2	142.6	145.3	148.5	154.0		160.3	166.3

(a)	(i)	Complete the table by calculating the total fish catch in 2012.	[1]
	(ii)	Compare the trends in fish catch from 2006 to 2014.	
			[3]
	(iii)	Suggest two reasons for the changes in the farmed fish catch between 2006 and 2014	4.
		1	
		2	
			[2]
(b)	Oth	ner than fish farming, describe ways fish stocks in the ocean can be maintained.	

(८)	A scientist disagrees	with the official	data nrovidad	about the world fish	catch
(6)	A solelilist disagrees	with the official	uala provided	about the world list	caton.

The fish catch is not recorded accurately.

My calculations suggest that the

My calculations suggest that the actual catch might be an extra 32 million tonnes per year.

Suggest **three** reasons why the actual fish catch might be greater than the official data in the table.

1	
•	[3

[Total: 12]

7 The article is from a newspaper reporting on local flooding in Malawi, a country in Africa.

Floods in Karonga District, Malawi

Four people died and three people are still missing after flooding on 4th April 2017. Officials say that 5520 households were affected and about 1075 hectares of crops were damaged.

The Vice President of Malawi visited the area and assured the people that the government will do everything it can to support them. Experts predict the long term effects of this flood will result in more deaths.

A road bridge was washed away in the floods, causing major traffic problems and affecting delivery of emergency supplies.

Similar floods occurred in the north of the country in April 2016. At least 12 people died and 9000 were left homeless. Earlier in 2017, floods hit the Malawi capital after a river burst its banks following six hours of heavy rain.

(a) Complete the table using information from the article about the flood on 4th April 2017.

number of people killed	
number of households affected	
area of crops damaged	

		[3]
(b)	Explain why experts predict that the number of deaths will increase in the long term.	
		[3]
		1 7 1

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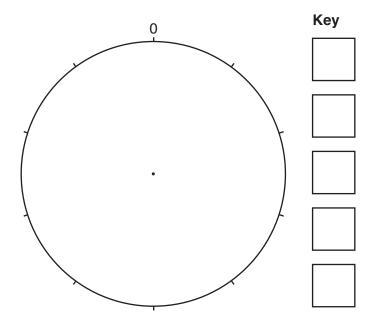
(c)	The government of Malawi are developing a plan to reduce the impact of future floods.				
	Describe three ways the impact of flooding can be reduced.				
	1				
	2				
	3				
	[3]				
	[Total: 9]				

8 The table contains data on phosphate fertiliser use with different crop types.

crop type	percentage world phosphate fertiliser use
grains	44
oil seeds	18
fruit and vegetables	8
sugar and cotton	4
other crops	26

(a) Complete the pie chart and the key to show the data in the table.

Phosphate fertiliser use with different crop types



(b) There has been an increase in the use of phosphate fertilisers in the last 20 years.

Give two reasons for this increase.

1		
2		

[4]

[2]

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(c) The fact sheet presents an argument for not eating meat for environmental reasons.

-	4		
HЯ	ct	ch	eet

Not eating meat is the future of food production.

It takes 7 kg of grain to produce 1 kg of beef. This gives a ratio of 7:1 for beef.

The ratio for chicken is 2:1.

Producing meat also uses a large quantity of water; 15415 litres for 1 kg of beef.

Meat production also releases CO₂; 27kg of CO₂ for 1kg of beef.

It is more efficient to obtain food from plants rather than animals; $1 \, \text{kg}$ of lentils releases only $0.9 \, \text{kg}$ of CO_2 .

(i)	Calculate the difference in carbon dioxide released by the production of 1kg of beef compared with 1kg of lentils.
	kg [1]
(ii)	Suggest why the production of chicken is less expensive than the production of beef.
	[1]
(iii)	One animal in a herd of beef cattle produces 375 kg of beef.
	Calculate the volume of water needed to produce this mass of beef.
	litres [1]
(iv)	Suggest two reasons why some farmers continue to raise livestock rather than grow crops, even if it is more efficient to grow crops.
	1
	2
	[2]

[Total: 11]

(a) The map shows changes to the population in Australia between 2015 and 2016. 9

			N A	
Ō	1000		population increas population increas population increas population increas population decreas	e 0.5-1.5% e <0.5%
(i)	km Describe the changes to the po	opulation in Australia	a between 2015 and 2016	
				[3]
(ii)	Suggest reasons for the chang	ges to the population	n in Australia between 201	5 and 2016.
				[2]
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(b)	State three ways a country can manage the growth of its population.	
	1	
	2	
	3	
		[3]
(c)	'A growing population is good for the environment and the economy of a country.'	
	How far do you agree with this statement? Give reasons for your answer.	
		[6]

[Total: 14]

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