

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

CANDIDATE NAME					
CENTRE NUMBER			CANDIDATE NUMBER		

9327936651

ENVIRONMENTAL MANAGEMENT

0680/13

Paper 1 May/June 2013

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.

Electronic calculators may be used.

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 15 printed pages and 1 blank page.



				2					
1			consists of all an area and the			and	non-living	(abiotic)	things
	(i)	Arrange the in the table.	following ecosy	stem compo	onents ar	id inte	eractions ur	nder the he	eadings
		soil	climate	anim	als	co	ompetition		
		plants	producers	co	nsumers	;	predat	tion	
	bioti	c component	abi	otic compo	nent		inter	action	
									[3]
	(ii)	Humans are and crop far	part of ecosystemers.	ems, for exai	mple hunt	er-ga	therers, nor	madic past	oralists
			hese three gro t? Explain your		u think l	nas t	he greates	t impact	on the
									[3]

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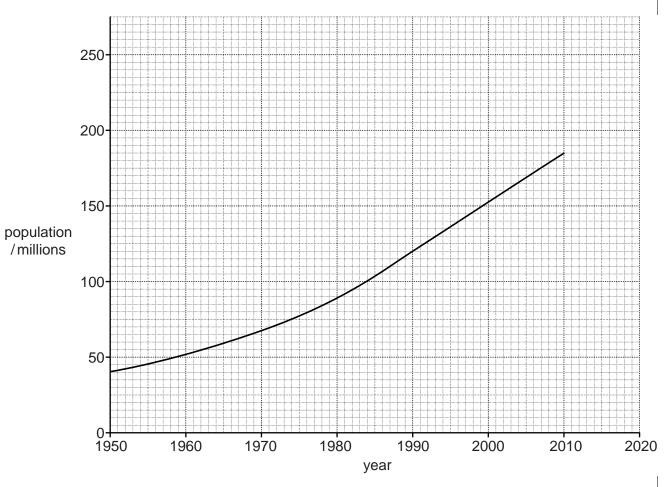
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and of the decline of insects such as bees.
Explain why these concerns exist.
woodland
bees
[4]
[Total: 10]

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2	(a)	The graph shows the population of Pakistan from soon after its independence to the
		present day.

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Three predictions for the total population 2020 have been made:

Key	
225 million	
235 million	
270 million	

(i) Plot these figures on the graph above using the lines in the key.

Put your three lines on the graph. [1]

(ii) Suggest reasons why it is difficult to predict population growth.

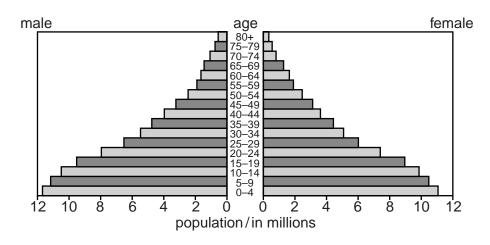
 [3]

(b) Predictions have also been made about the age structure of the population in 2020.

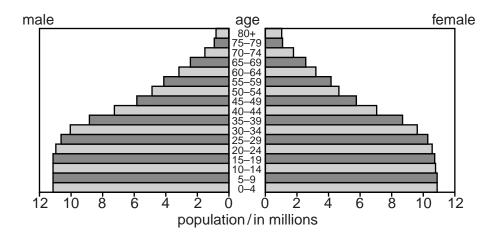
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The diagrams below show the population pyramid for 2005 and the predicted population pyramid for 2020 for Pakistan.

actual population pyramid for Pakistan 2005



predicted population pyramid for Pakistan 2020



(i)

Compare what each pyramid shows.
[3]

For Examiner's Use	Suggest what the government of Pakistan might do to prepare for the changes that may occur by 2020.	(ii)
	[3]	
	• •	
	[Total: 10]	

3 (a) Crop farming can only take place in areas where certain conditions occur. The crop is a plant, therefore it has certain requirements. Fill in the gaps in the passage below summarising the requirements of a crop for growth.

carbon dioxide

heat

For Examiner's Use

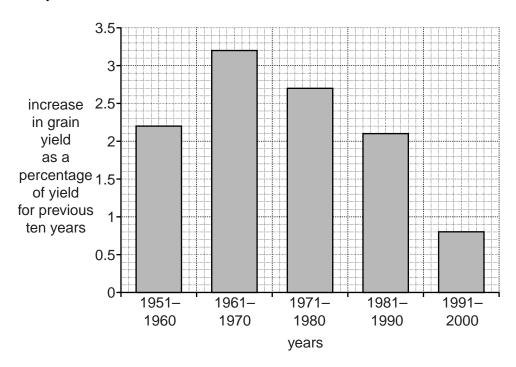
Use words from the list below. Words may be used once, more than once or not at all.

nitrate

		water	light	salinity		
(i)	In order to make	sugars, plan	ts need		from th	ne
	soil and			from the a	tmosphere. The energy f	or
	the process is pr	rovided by			from the sun. Th	ne
	temperature of th	ne area must	also be suital	ble for growth		
	To convert these	sugars into	other materia	ls, such as pr	oteins and chlorophyll, th	ne
	plants also need	l various nut	rients such a	s		,
	also obtained fro	m the soil.			[:	2]
(ii)	Which is the mai	n factor in pa	rt (i) that limit	s crop growth	ı in	
	desert,					
	tundra?				[2	2]

(b) The graph shows the changes in the improvement in world grain yields over the last half century.

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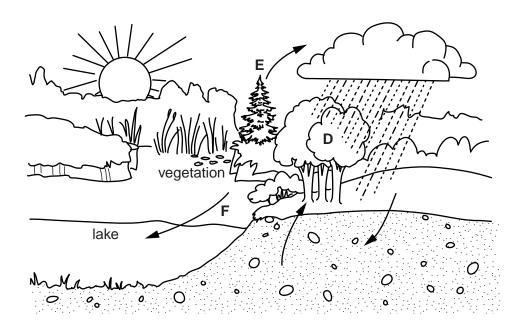


(i)	Describe and explain the changes in the improvement in grain yields shown by the graph.
	[4]
(ii)	Despite overall improvements in crop yields, the average yield of crops on many small farms in developing countries is still low. Explain why yields remain low.
	TO!
	[2]

[Total: 10]

4 (a) The diagram shows parts of the water cycle. Some processes are labelled.





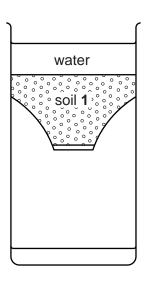
The table shows ways in which the removal of vegetation, can affect some of the water cycle processes.

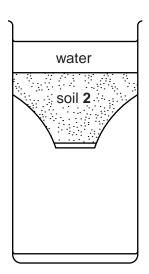
letter	name of process	change on removal of vegetation	reasons for change
D	interception	decreases	foliage blocks falling rain
E			
F			

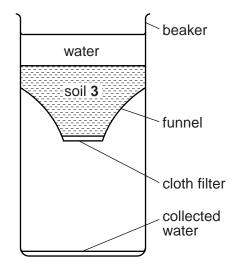
Complete the table by filling in the gaps, using your own knowledge and the water cycle diagram. The first line has been done for you. [3]

(b) Some of the properties of soils important for plant growth can be measured in the laboratory. The following apparatus was set up. The soils were already saturated.

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(i) Which soil property is being measured?

.....[1]

The following data were obtained from the experiment above.

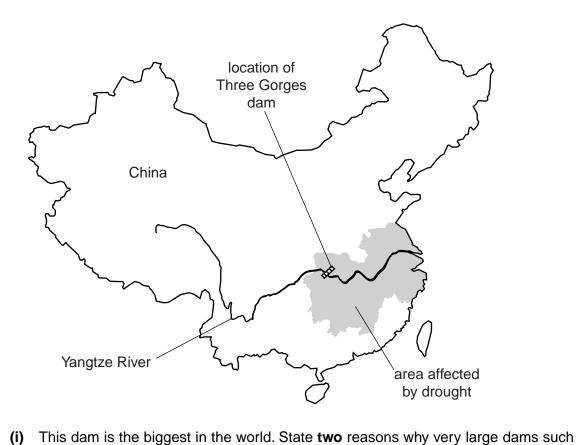
soil type	height of water collected after one hr / cm
1	5.0
2	1.5
3	0.6

Explain why a soil with equal amounts of sand, silt and clay is better for farthan a soil that is mostly sand or mostly clay. Soil that has equal amounts of sand, silt and clay compared with: soil that is mostly sand															I					<u></u>									<u></u>	1	I				<u></u>																	1						
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	th S	nar oil	th	a s na na	sc it	oi h is	l t a ⊧r	th s m	(et eo	q st	s u ly	r al	nc	ar ın	n IC	ily o	/ u	s n	a it:	n s	d 	of	o : :	s 	: ::	n ar	า 	o d 	, ,	tl <u>y</u> si	/ It	: c	a:	a <u>·</u>	y. d 	c 	:la	a <u>y</u>	y 	c 	:0	or 	n 	р 	a 	re	e 	b 	w 	/i1	th	n: 	••	. •			
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[Total: 10]

For Examiner's Use **5 (a)** The map below shows the location of the Three Gorges dam on the Yangtze River in China.

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()	as this are built.
	[2]
(ii)	Building large dams may cause problems for people living in the area.
` ,	Describe these problems.
	[3]

	(iii)	The dam was completed in 2006 and since then a severe drought has affected the area shaded on the map. Some farmers in this area blame the dam for the drought.	For Examiner's Use
		Are they right or wrong? Give your views on this.	Ose
		[3]	
(b)		re recently, the same areas of China have experienced severe flooding. Suggest sons for this flooding.	
		[2]	
		[Total: 10]	

						14			
6	(a)			-	ies on the ge ources such a		f electricity. This o	can be achieved (using
		С	oal	solar	gas	wind	wave	nuclear	
			geothe	ermal	hydro-elec	tric	biomass	oil	
				•••	•	• • • • • • • • • • • • • • • • • • • •	that meets the to meet their nee	-	esent
		(i)	Place the below.	e energy sou	irces in the I	ist above	under the correc	t heading in the	table
			unsu	stainable			sustaina	ble	
L									[3]
		(ii)	The lengt	th of time for	which the u	ngustaina	ole sources of en	erav can he evnl	
		(11)		increased.	Willon the di	isustania	ole sources or en	ergy can be expi	Oilea
			Suggest	ways in whic	h this could b	oe achieve	ed.		

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(b) The table below shows the average costs of generating electricity at power stations using gas, oil and coal and nuclear power stations in a selection of developing countries.

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[Total: 10]

	average cost of electricity from power stations using gas, oil and coal \$ per MWh	average cost of electricity from nuclear power stations \$ per MWh
construction	6.5	8.9
operation	3.4	2.6
fuel	22.0	5.3

Taking into account these costs, and other factors, state what arguments there might be for and against A a power station using coal, oil or gas and B a nuclear power station.

A

B

[4]

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