

Cambridge International AS Level

CANDIDATE NAME					
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ENVIRONMENTAL MANAGEMENT

8291/13

Paper 1 Principles of Environmental Management

May/June 2022

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Section A: answer all questions.
- Section B: answer one question.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do not use an erasable pen or correction fluid.
- Do not write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [].

This document has 20 pages. Any blank pages are indicated.

Section A

Answer all questions in this section.

1 (a) Table 1.1 shows the population density for three countries.

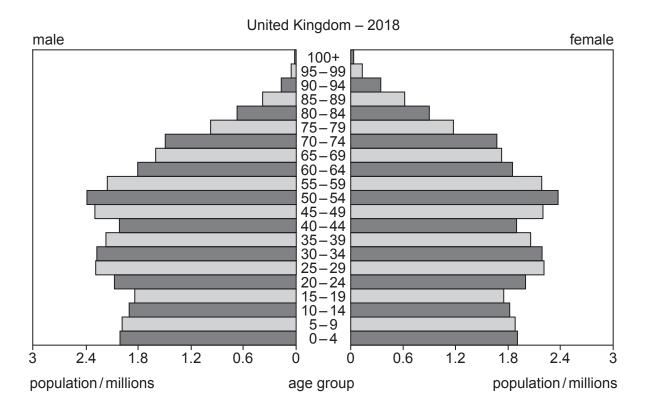
Table 1.1

country	area/km²	population in 2020	population density /people km ⁻²		
United Kingdom	241930	67 200 000	278		
France	547 557	67400000	123		
Bangladesh	130 170	164 700 000			

(i) Complete Table 1.1 by calculating the population density for Bangladesh. Give your

	answer to the hearest whole number.	[2]
(ii)	Use Table 1.1 to suggest why the United Kingdom and France have different popula densities.	tion
		[1]
(iii)	Describe four factors which influence the population density of different regions with country.	in a
		[/]

(b) Fig. 1.1 shows population pyramids for the United Kingdom (a HIC) and Mozambique (a LIC).



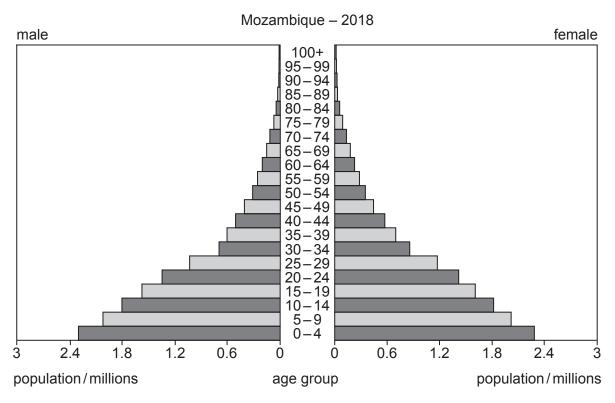


Fig. 1.1

(i)	Using Fig. 1.1, compare the population pyramids of the United Kingdom and Mozambique.
	[4]
(ii)	Suggest reasons for the differences in the population pyramids for the HIC and the LIC shown in Fig. 1.1.
	[4]
	[Total: 15]

2 (a) Table 2.1 shows four gases that cause air pollution and one source.

Table 2.1

gas	source
carbon dioxide CO ₂	combustion of fossil fuels
methane CH ₄	
oxides of nitrogen NO _x	
CFCs	

(i)	Complete Table 2.1 to show one source for each gas.	[2]
(ii)	Describe strategies for managing air pollution caused by the gases shown in Table 2.	.1.
		••••
		••••
		[4]

(iii)	Explain how the combustion of fossil fuels leads to the enhanced greenhouse effect.
	[5]

(b) Fig. 2.1 shows the carbon cycle.

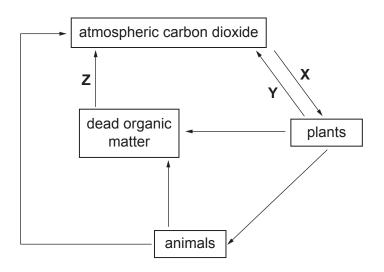


Fig. 2.1

State the processes labelled **X**, **Y** and **Z** in Fig. 2.1.

X	
Υ	
Z	

[2]

[Total: 13]

3

(a)	Tun	dra and desert are two biomes that receive very little precipitation.
	(i)	State one abiotic component, other than water.
		[1]
	(ii)	Explain, in terms of abiotic components, why mosses and lichens are the most abundant vegetation in tundra.
		[4]
	(iii)	Name the store of methane and carbon dioxide found in tundra.
		[11]

(b) Fig. 3.1 shows some nutrient transfers and stores for a desert biome.

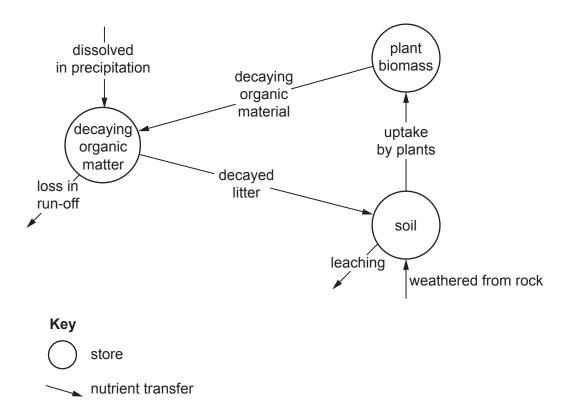
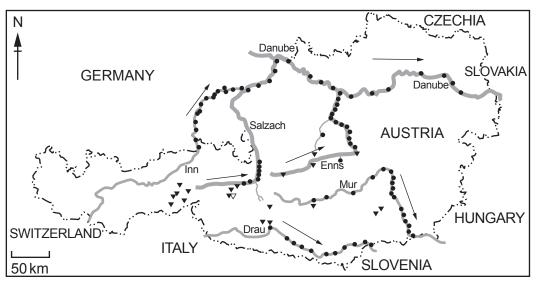


Fig. 3.1

(i)	Explain why the stores for biomass and litter are relatively small in a desert biome.	
		[4]
(ii)	Define the terms gross primary productivity and net primary productivity.	
	gross primary productivity	
	net primary productivity	
		[2]
		[4]

4 (a) Fig. 4.1 shows the current and proposed hydroelectric power production in Austria, a country in Europe.



Key

(i)

- ▼ storage power plant
- storage power plant under construction
- power plant
- river -
- → direction of river flow
- · · international boundary

Fig. 4.1

Describe how the development of hydroelectric power in Austria contributes to energy security.
[4]

	(ii)	Explain two causes of energy insecurity.	
		[4	1]
(b)		te two advantages and two disadvantages, other than energy security, of hydroelectric ver generation to the countries shown in Fig. 4.1.	С
	adv	antages	
	1		
	2		
	disa	ndvantages	
	1		
	2		
		[4	ŀ]

[Total: 12]

5

	ecent survey found that the amount of plastic waste on beaches in the United Kingdom was the ne whether or not the beach was in a marine conservation area.
(a)	Give three reasons why the marine conservation area beaches have the same amount of plastic waste as other beaches.
	1
	2
	3
	[3]
(b)	Suggest one impact of plastic waste on beach environments.
	[1]
(c)	Evaluate the success of one strategy to manage the disposal of plastic waste. Give reasons for your answer.
	[4]
	[*] [Total: 8]
	[

Section B

Answer one question.

Either

6	'The devastating Australian wild fires of 2020 are strong evidence for global climate change.'
	To what extent do you agree with this statement?
	Give reasons and include information from relevant examples to support your answer. [20]
Or	
7	Evaluate the success of strategies to manage the conservation of habitats in a location of your choice.
	Give reasons and include information from relevant examples to support your answer. [20]

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