Human Influences on Ecosystems

Question Paper 1

Level	IGCSE
Subject	Biology
Exam Board	CIE
Topic	Human Influences on Ecosystems
Paper Type	(Extended) Theory Paper
Booklet	Question Paper 1

Time Allowed: 58 minutes

Score: /48

Percentage: /100

- 1 A researcher investigated the population growth of fish for fish farming. The researcher stocked a farmer's lake with a small number of these fish and recorded the number of fish over the next five years. The researcher's results showed that the population of fish had increased exponentially.
 - (a) (i) Use the axes to show the **exponential growth** in the population of fish.

Label the axes and draw a suitable curve.



(ii) Explain why the population of fish increased exponentially.

.....

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.....[4]

[3]

Fig. 5.1 shows the total mass of wild fish caught worldwide between 1950 and 2012 and the mass of farmed fish produced worldwide over the same period.

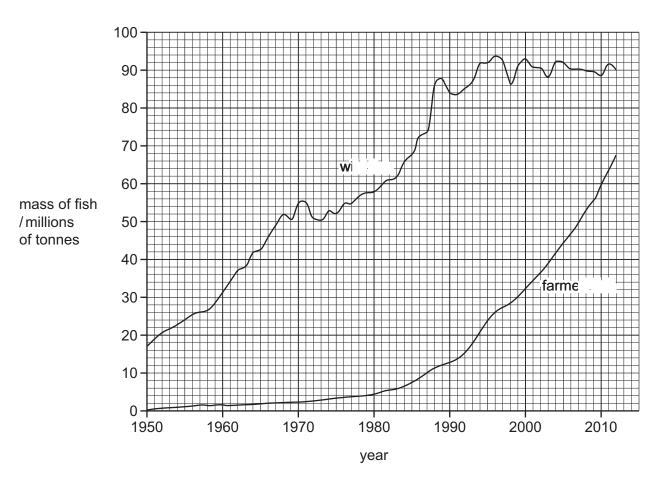


Fig. 5.1

(b) Describe the changes in the mass of wild fish caught between 1950 and 2012.

You will gain credit if you use data from Fig. 5.1.

[3]

(c)	It is predicted that wild fish stocks will decrease and become depleted because of overfish	າing.
	Suggest ways in which governments can try to maintain the stocks of wild fish.	
		501
		[6]
d)	Like fish stocks, forests can be a sustainable resource.	
, - ,	Discuss what is meant by the term <i>sustainable resource</i> , using forests as an example.	
		[3]

2 Fig. 5.1 shows an area of forest where some of the trees have been cut down.



Fig. 5.1

(a)	Explain the reasons why forests may be cut down as shown in Fig. 5.1.

[3]

(b) The loss of forests from parts of the world is assessed by satellite imagery. Table 5.1 shows data on the forests in Indonesia and Malaysia, two countries in South-East Asia which have large areas of forest.

Table 5.1

country	type of	area / thousands of hectares			
1	forest	1990	2000	2005	2010
Indonesia	natural forest	118 545	95 737	94 158	90 883
Malaysia	natural forest	20 420	19932	19317	18 649

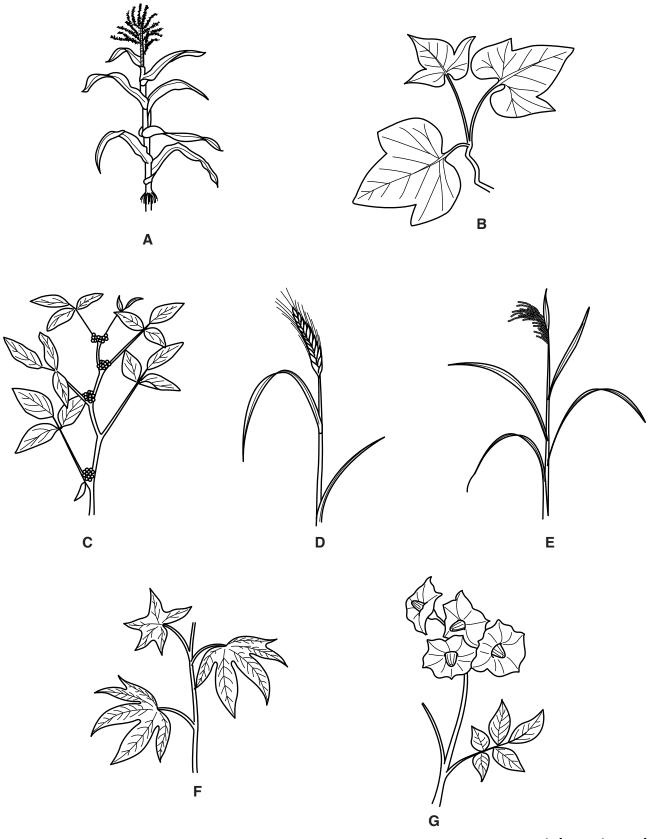
(i) Calculate the percentage loss of natural forest in Indonesia between 1990 and 2010. Show your working and express your answer to the nearest whole number.

.....% [3]

loss of natural forest in Malaysia.	
[31
[~]

	(111)	and Indonesia for oil palm plantations. Both countries have also replanted forests grow timber and other forest products.	to
		Suggest why replanted forests and plantations are less useful for conservation the natural forest.	an
			[3]
(c)	Discus	ss the effects of deforestation on areas of land.	
			[6]

3 (a) Fig. 1.1 shows seven plant species that are important crops.



not drawn to scale

Fig. 1.1

Use the key to identify each species. Write the letter of each species (A to G) in the correct box beside the key. One has been done for you.

Key

1 (a)	branched veins on leaves	go to 2	
(b)	parallel veins (not branched) on leaves	go to 3	
2 (a)	leaves divided into leaflets (look like small individual leaves)	go to 4	
(b)	leaves not divided into leaflets	go to 5	
3 (a)	flowers grouped tightly together at the top of the stalk	Triticum aestivum	
(b)	flowers grouped loosely together at the top of the stalk	go to 6	
4 (a)	large flowers located at top of stem	Solanum tuberosum	
(b)	small flowers located along the stem	Glycine max	
5 (a)	leaves have five lobes	Manihot esculenta	F
(b)	leaves have three lobes	Ipomoea batatas	
6 (a)	flowers above youngest leaf	Zea mays	
(b)	flowers bend down below youngest leaf	Oryza sativa	

[3]

(b)	The pattern of the veins on the leaves was used in the key to separate the monocotyledonous
	crop plants and eudicotyledonous (dicotyledonous) crop plants shown in Fig. 1.1.

State **one** other feature that could be used to identify monocotyledonous plants from eudicotyledonous plants.

.....[1]

(c) The leaves of some crop plants are not eaten but are used to make paper. This reduces

deforestation because fewer trees are cut down for making paper. Deforestation has negative effects on soil ecosystems.			
(i)	Describe the negative effects of deforestation on soil ecosystems.		
	[4]		
(ii)	Paper recycling can reduce deforestation.		
	Outline how paper can be recycled.		
	[3]		
	[Total: 11]		