Human influences on ecosystems – 2020 IGCSE 0610

1. Nov/2020/Paper_11/No.39

Yeast carries out anaerobic respiration, making carbon dioxide and ethanol as end products.

Which end products can be used to make biofuel and bread?

	biofuel	bread
A	carbon dioxide	carbon dioxide
B	carbon dioxide	ethanol
C	ethanol	carbon dioxide
D	ethanol	ethanol

2. Nov/2020/Paper_11/No.40

What is the effect of replacing tropical rainforest with plantations of oil palm trees, which are grown as crop plants?

A increased carbon dioxide in the atmosphere

B increased flooding

C reduced number of species

D reduced pollution

3. Nov/2020/Paper_12/No.38

What can be used to reduce competition between crop plants and weeds?

A fertilisers

B herbicides

C insecticides

D pollinators

4. Nov/2020/Paper_12/No.39

Large areas of forest are cut down in order to clear the land for other uses.

If the land is **not** replanted with trees or crops, what effect does this have on the atmosphere?

A Carbon dioxide remains the same.

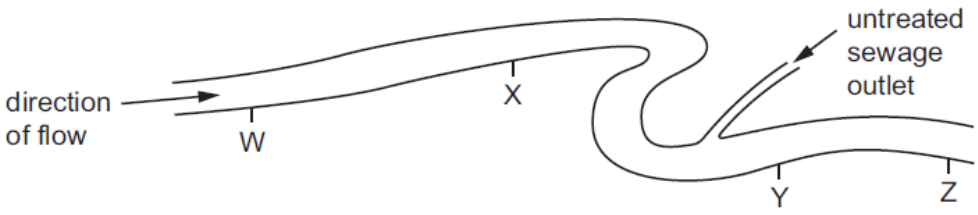
B Carbon dioxide increases.

C Oxygen increases.

D Water vapour increases.

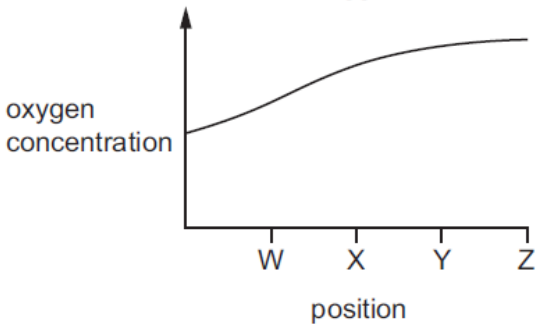
5. Nov/2020/Paper_12/No.40

The diagram shows four positions on a river where water samples were taken.

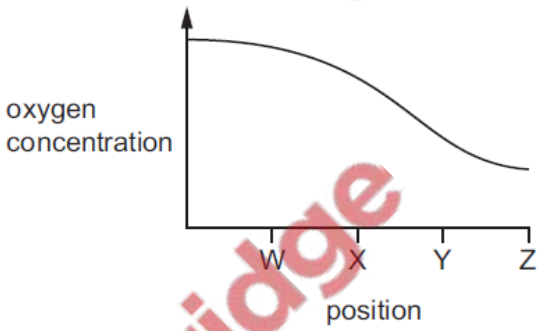


Which graph shows oxygen concentrations in the river?

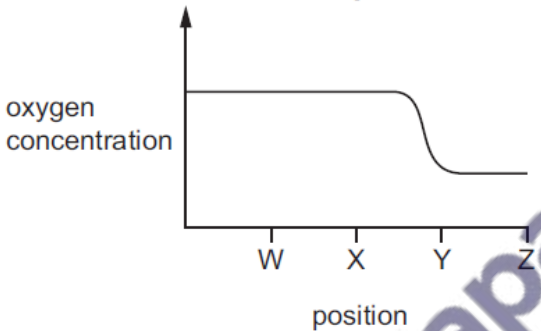
A



B



C



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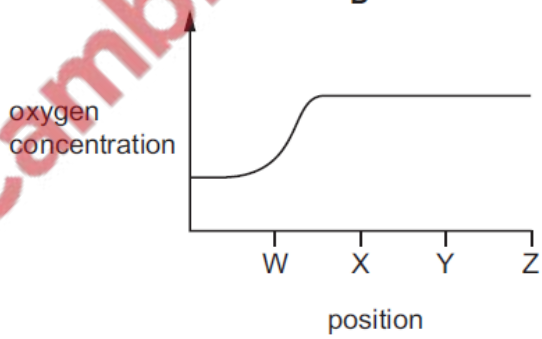
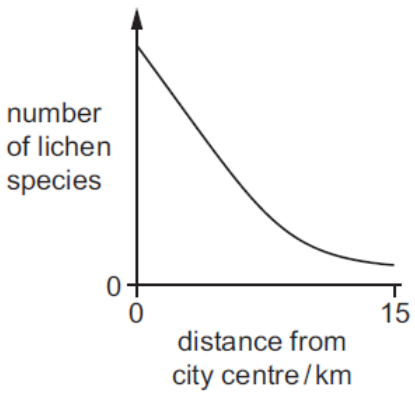


6. Nov/2020/Paper_13/No.39

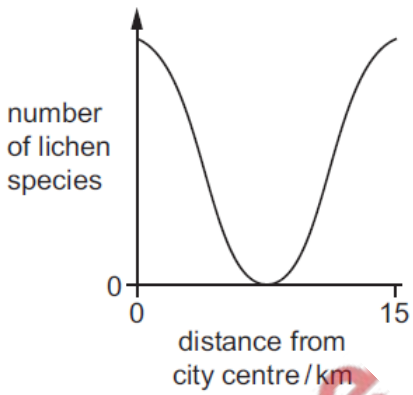
Lichens are organisms that do **not** grow well in polluted air.

Which graph shows the change in the number of lichen species from the centre of a polluted city to the unpolluted countryside 15 km away?

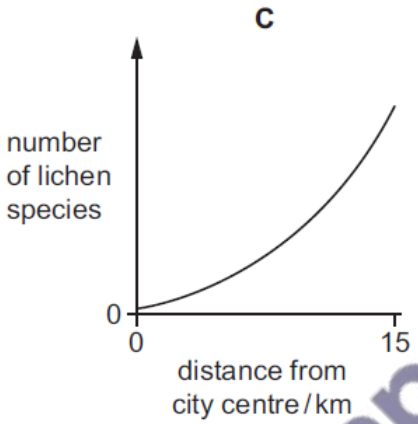
A



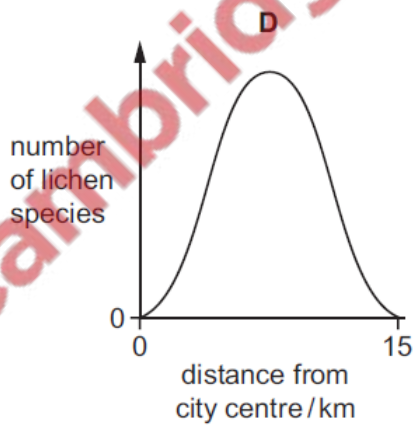
B



C



D



7. Nov/2020/Paper_13/No.40

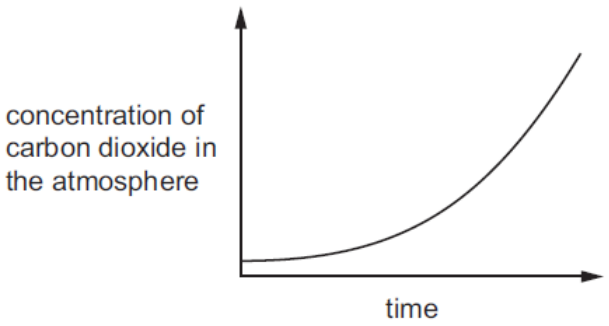
Three human activities are listed.

1 burning fossil fuels

2 deforestation

3 replanting forests

Which activities can cause the change shown in the graph?



A 1, 2 and 3 **B** 1 and 2 only **C** 1 only **D** 2 and 3 only

8. Nov/2020/Paper_21/No.40

The number of Atlantic bluefin tuna fish found in the Atlantic Ocean has significantly decreased in the last 50 years.

Which method would make the biggest improvement in the conservation of tuna fish stocks?

A decreasing the size of holes in fishing nets

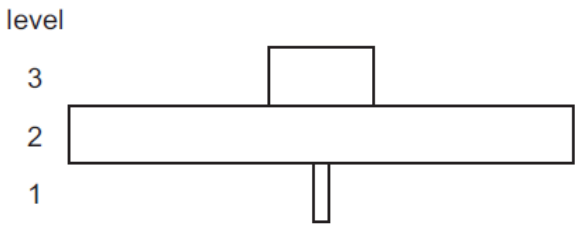
B genetic engineering of tuna

C introducing fishing quotas

D selective breeding of tuna

9. Nov/2020/Paper_22/No.35

The diagram shows a pyramid of numbers.



What is the correct description of the trophic levels?

	trophic level		
	1	2	3
A	producers	primary consumers	secondary consumers
B	producers	secondary consumers	tertiary consumers
C	secondary consumers	primary consumers	producers
D	secondary consumers	tertiary consumers	producers

10. Nov/2020/Paper_22/No.36

Bacteria are active in the nitrogen cycle.

Which process in the nitrogen cycle is carried out by nitrifying bacteria?

A the conversion of nitrogen gas to ammonia

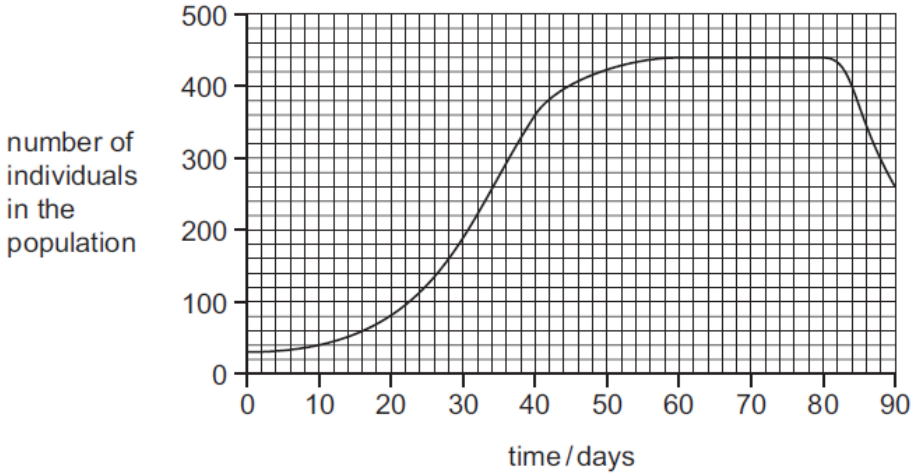
B the conversion of nitrogen gas to nitrates

C the conversion of ammonia to nitrates

D the conversion of nitrates to nitrogen

11. Nov/2020/Paper_22/No.37

The diagram shows a population growth curve.



How long does the population remain in the stationary phase?

A 8 days

B 12 days

C 23 days

D 48 days

12. Nov/2020/Paper_22/No.39

What is an example of sustainable use of resources?

A allowing only young fish to be caught

B cutting down a forest and not replanting trees

C controlling the number of fish caught with quotas

D planting deforested areas with one species of crop plant

13. Nov/2020/Paper_23/No.39

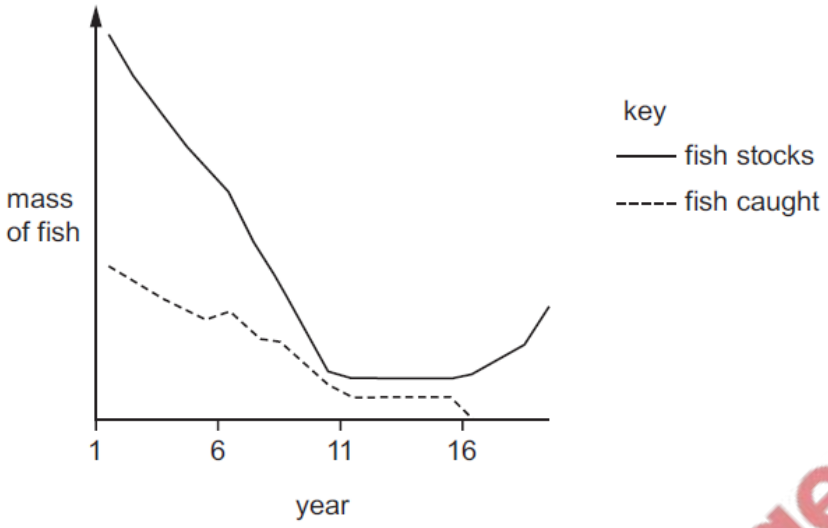
The table shows some of the processes that occur during eutrophication.

Which row shows the correct increase or decrease of each process?

	nitrate ion availability in the water	light availability in the water	rate of respiration by decomposers	oxygen availability in the water
A	increases	decreases	decreases	increases
B	increases	decreases	increases	decreases
C	decreases	increases	increases	increases
D	decreases	increases	decreases	decreases

14. Nov/2020/Paper_23/No.40

The graph shows the effect of fishing on fish stocks over 20 years. In year 11, a fishing quota was introduced followed by a total ban on fishing in year 16.



What effects did these conservation measures have on the fish population?

A The fish population became extinct.

B The fish population started increasing immediately after the fishing quota was introduced.

C The fish population started increasing only after a total ban on fishing was introduced.

D There was no effect on the fish population.

15. Nov/2020/Paper_32/No.5

Recycling rates in one country were monitored every ten years.

The percentages of different types of recycled materials were recorded.

Fig. 5.1 shows the results.

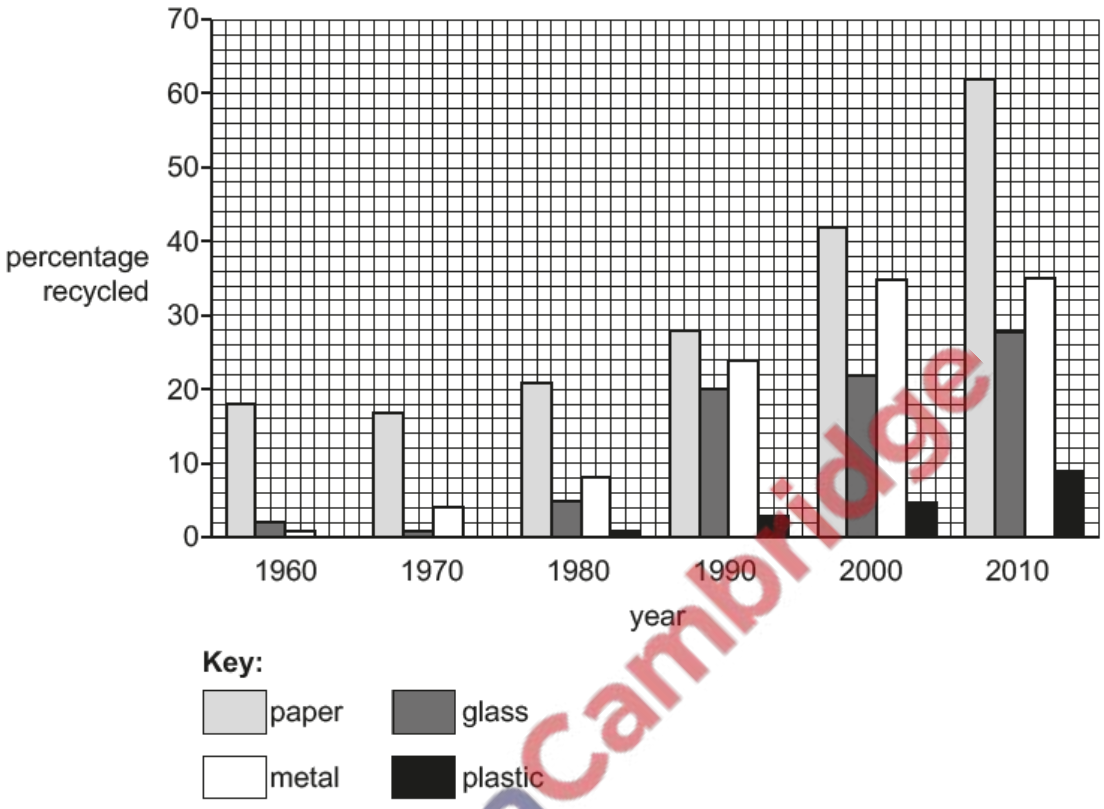


Fig. 5.1

(a) Complete the sentences using the data shown in Fig. 5.1.

The general trend shows that between 1970 and 2000 the percentage of materials recycled has ..... . The most commonly recycled material is ..... .

In 1970 ..... was **not** recycled.

The percentage of ..... recycled did not change between 2000 and 2010.

[4]

(b) Calculate the increase in the percentage of glass recycled between 1960 and 1990.

..... % [1]

[Total: 5]

16. Nov/2020/Paper_32/No.9

Fig. 9.1 is a photograph of a fish farm. Fish are kept in small cages in the sea and are fed.

This is an example of intensive livestock production.

Fig. 9.1

(a) Describe the negative impacts of intensive livestock production.

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.....

.....

..... [3]

(b) Define the term sustainable resource.

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.....

..... [2]

(c) Circle **two** examples of sustainable resources from the list.

coal	**fish stocks**	**natural gas**	**crude oil**	**forests**	[1]

[Total: 6]

17. Nov/2020/Paper_32/No.4

(a) Complete the sentences about human influences on ecosystems.

Use words from the list.

Each word may be used once, more than once, or not at all.

deforestation	**fertilisers**	**herbicides**
insecticides	**livestock**	**monoculture**
pectinases	**pollinate**	**pollute**

When one type of crop of the same species is grown on a large scale it is called a

..... .

Chemical ..... add mineral ions to the soil to increase the yield of crops.

Weeds can be killed by ..... .

Crop damage by insects can be reduced by the use of ..... . One disadvantage is that this kills useful insects which ..... flowers.

[5]

(b) State the names of **two** greenhouse gases that are produced as a consequence of farming.

1 .....

2 .....

[2]

[Total:7]

18. Nov/2020/Paper_42/No.6

(a) Researchers investigated four different insecticides to determine how effective they were at removing three different species of insects, **A**, **B** and **C**, from crop plants.

They tested different concentrations of each insecticide to find the minimum dosage required to remove 95% of each insect population in two hours.

Each insecticide had the same cost per gram.

The results are shown in Table 6.1.

Table 6.1

species of insect	minimum dosage required /mg per dm^3			
	insecticide **1**	insecticide **2**	insecticide **3**	insecticide **4**
A	3	51	5	58
B	31	27	2	75
C	10	2	3	65

(i) Use the information in Table 6.1 to decide which **one** of the four different insecticides and which dosage would be the best choice for removing insects **A**, **B** and **C** from a field of crop plants.

Explain your choices.

insecticide ..... dosage .....

explanation .....

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.....

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[3]

(ii) Discuss factors, other than dosage, that should be considered to prevent the insecticide damaging the environment.

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..... [3]

(b) (i) Describe the advantages to farmers of using insecticides.

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..... [2]

(ii) Farmers also use other chemicals on their crop plants.

State the names of chemicals, other than insecticides, that are used by farmers on crop plants **and** explain their benefits.

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..... [3]

(c) Insecticides are often made from chemicals that occur naturally in plants. Tobacco plants are one example of this.

(i) Suggest why having a natural insecticide is an adaptive feature of plants.

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..... [1]

(ii) Describe why people find it difficult to stop smoking tobacco.

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..... [2]

(iii) State the names of **two** diseases that can be caused by smoking tobacco.

1 .....

2 .....

[2]

(iv) State the name of the component of tobacco that can damage alveoli.

..... [1]

[Total: 17]