

Human influences on ecosystems – 2021 IGCSE 0610

1. **Nov/2021/Paper_11/No.40**

What is an effect of an increase in the use of insecticides?

- A decreased competition between crop plants and weeds
- B decreased numbers of extinctions
- C decreased numbers of pollinators
- D decreased use of fertilisers

2. **Nov/2021/Paper_13/No.37**

Which combination of factors would cause the greatest reduction in the population growth of an animal species?

	disease	food source	predators
A	decrease	decrease	decrease
B	increase	decrease	increase
C	decrease	increase	decrease
D	increase	increase	increase

3. **Nov/2021/Paper_13/No.40**

What is meant by a sustainable resource?

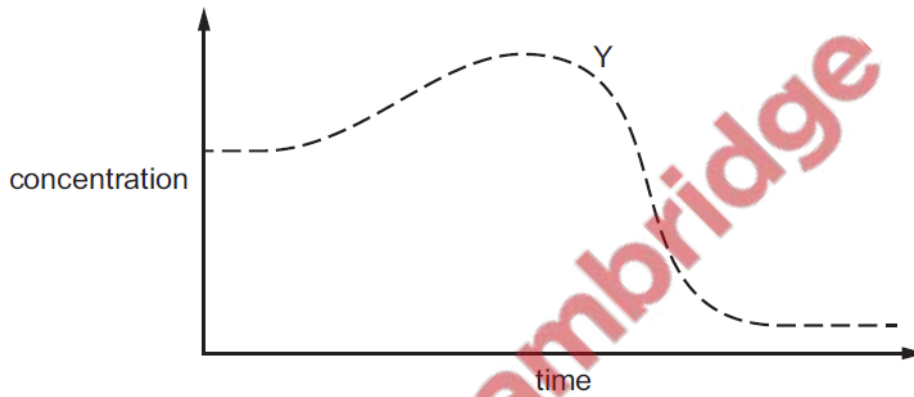
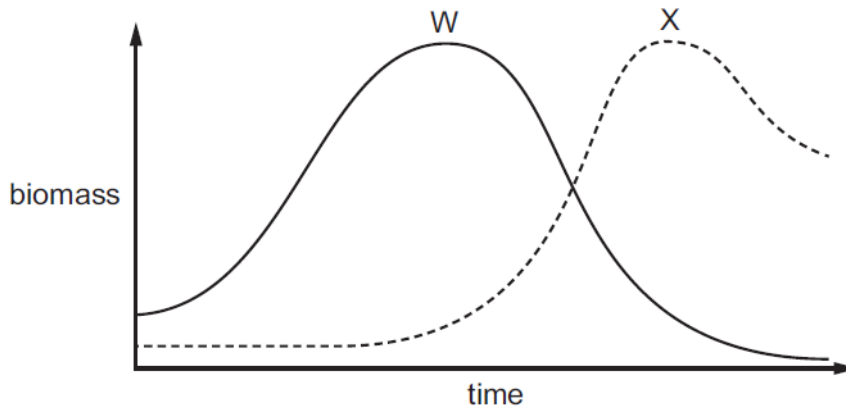
- A a resource that is produced by non-intensive farming and is rarely used
- B a resource that is removed from a habitat without changing the environment
- C a resource that does not pollute the environment
- D a resource that is produced as rapidly as it is removed from the environment

4. **Nov/2021/Paper_21/No.39**

What is an effect of an increase in the use of insecticides?

- A decreased competition between crop plants and weeds
- B decreased numbers of extinctions
- C decreased numbers of pollinators
- D decreased use of fertilisers

The graphs show changes that occur in a lake during the process of eutrophication.



What are the labels for W, X and Y?

	W	X	Y
A	decomposers	producers	oxygen
B	decomposers	producers	sulfur dioxide
C	producers	decomposers	oxygen
D	producers	decomposers	sulfur dioxide

6. Nov/2021/Paper_22/No.40

If the nitrate concentration in a lake increases, fish may die due to the events listed.

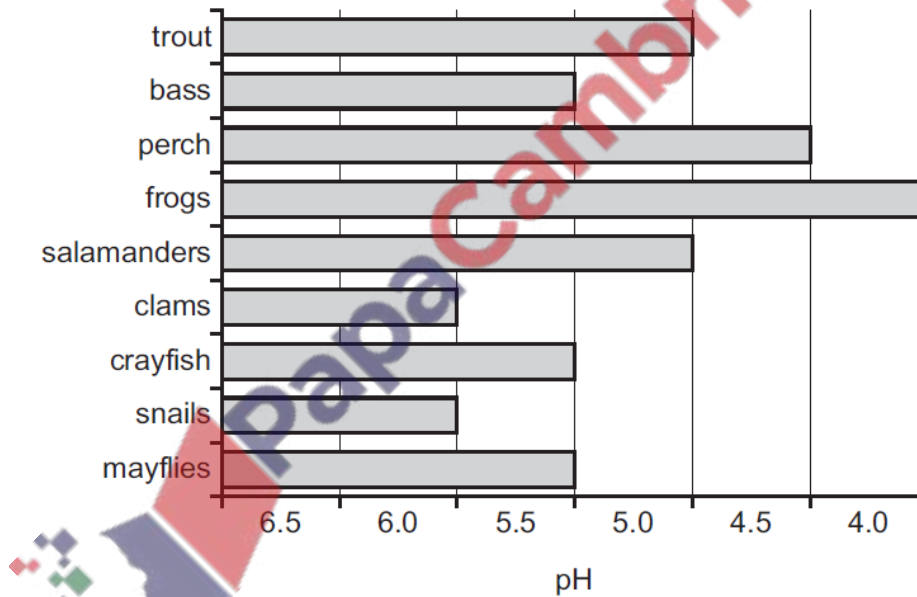
- 1 increased aerobic respiration by decomposers
- 2 increased decomposition of dead producers
- 3 increased growth of producers
- 4 reduction in dissolved oxygen

Which sequence of events would lead to the death of the fish?

- A 1 → 3 → 2 → 4
- B 2 → 1 → 4 → 3
- C 3 → 2 → 1 → 4
- D 3 → 4 → 1 → 2

7. Nov/2021/Paper_23/No.39

The bar chart shows the tolerance of some river organisms to different levels of pH.

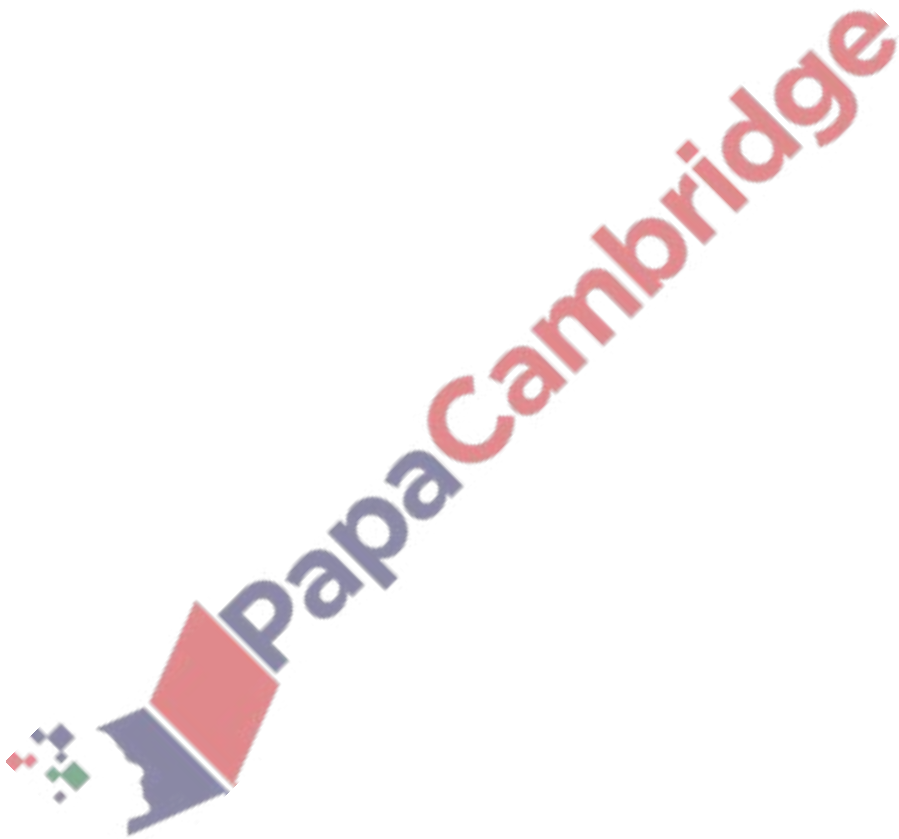


Which organisms would be most affected if the pH of a river decreased from pH 6.0 to pH 5.5?

- A crayfish and mayflies
- B frogs and perch
- C snails and clams
- D trout and salamanders

8. Nov/2021/Paper_23/No.40
What is meant by a sustainable resource?

- A a resource that is produced by non-intensive farming and is rarely used
- B a resource that is removed from a habitat without changing the environment
- C a resource that does not pollute the environment
- D a resource that is produced as rapidly as it is removed from the environment



Many crop plants are grown as monocultures.

Fig. 6.1 shows the destruction of a monoculture of maize as a result of drought.



Fig. 6.1

- (a) Describe the negative impacts to an ecosystem of large-scale monocultures, such as the one shown in Fig. 6.1.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [3]

(b) The fruits of maize are produced on structures called cobs. Each cob has many fruits.

Fig. 6.2 shows how the maize cobs have changed over thousands of years as a result of selective breeding.

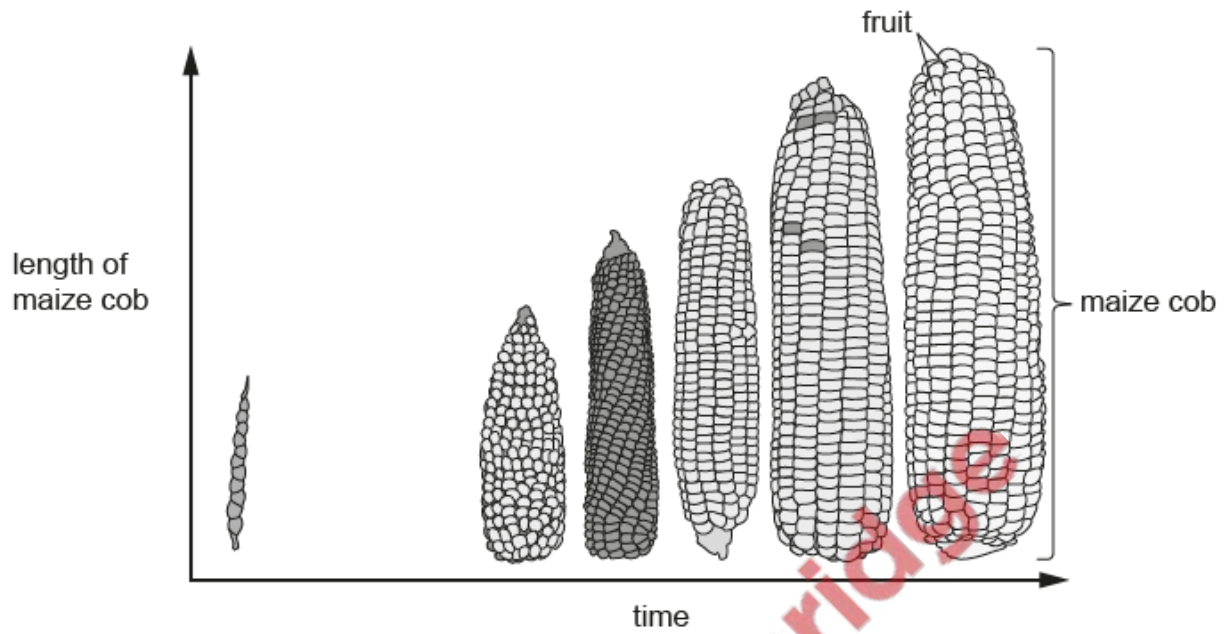


Fig. 6.2

State **two** desirable features, visible in Fig. 6.2, that have been selected from the more ancient varieties of maize.

- 1
- 2

[2]



(c) The process of selective breeding involves a series of steps, as shown in Fig. 6.3.

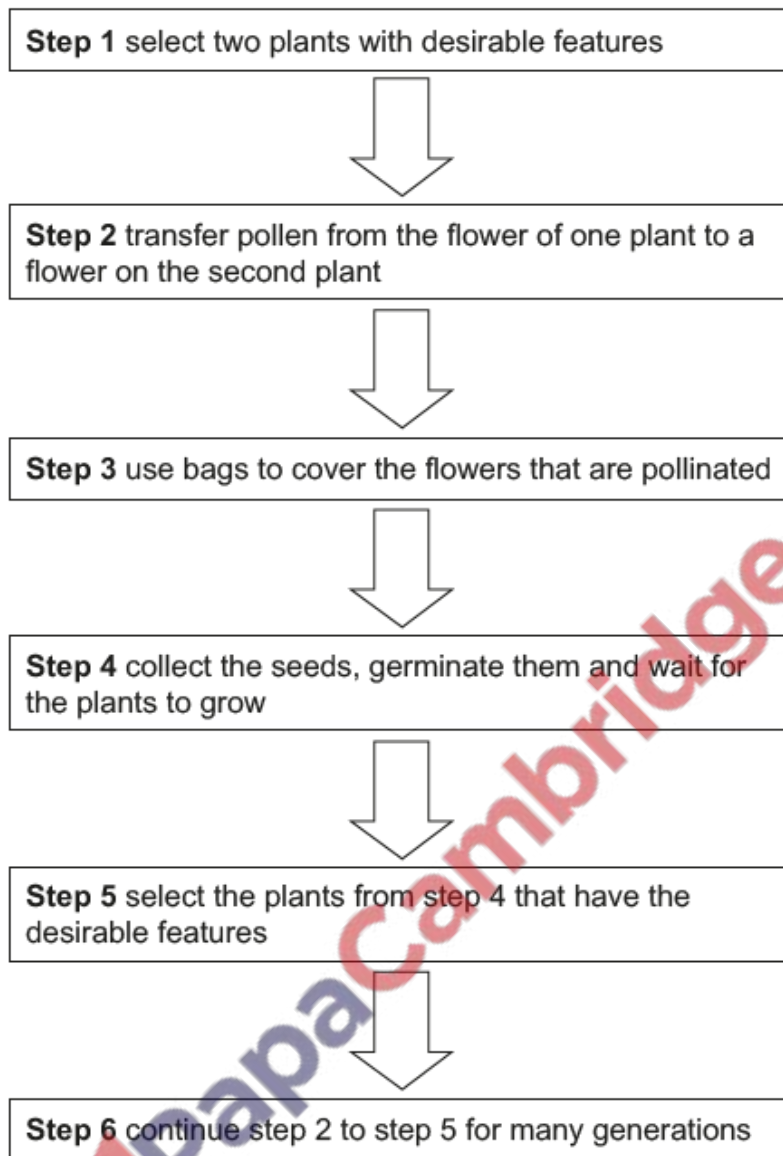


Fig. 6.3

(i) Explain why the flowers are covered with bags in step 3.

.....

.....

..... [1]

(iii) Explain why some of the plants in step 5 may show features **not** visible in the parent plants.

.....
.....
..... [1]

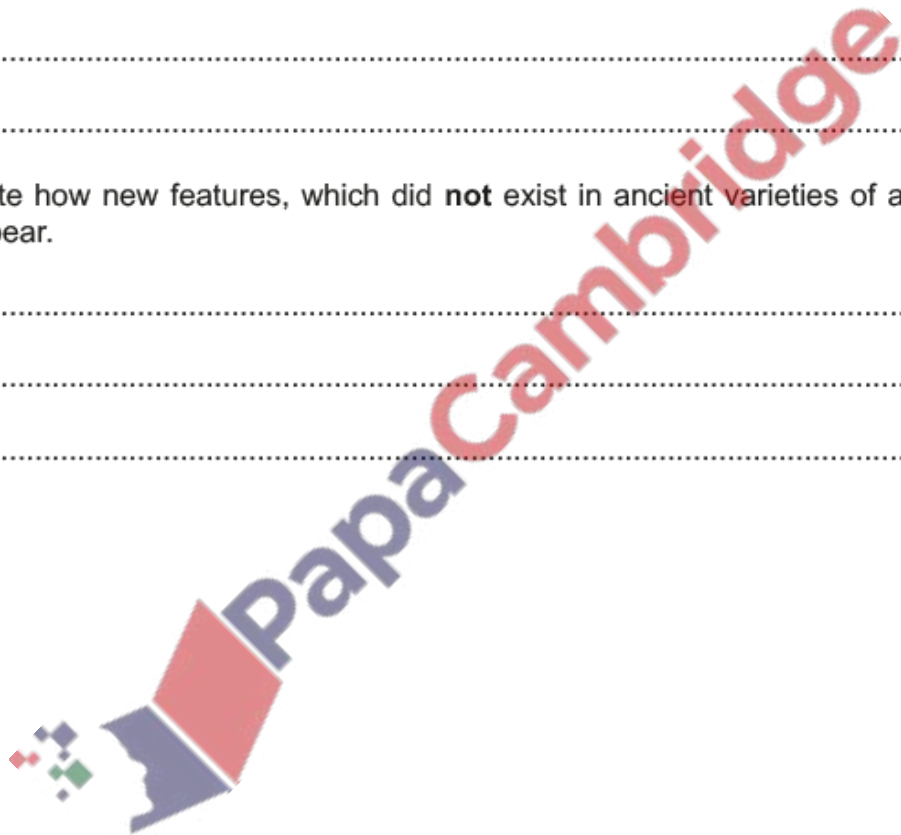
(iv) Suggest why selective breeding should continue for many generations (step 6).

.....
.....
.....
.....
..... [2]

(v) State how new features, which did **not** exist in ancient varieties of a crop plant, could appear.

.....
.....
..... [1]

[Total: 12]



(b) Fig. 5.2 shows the location of a chemical factory near a river.

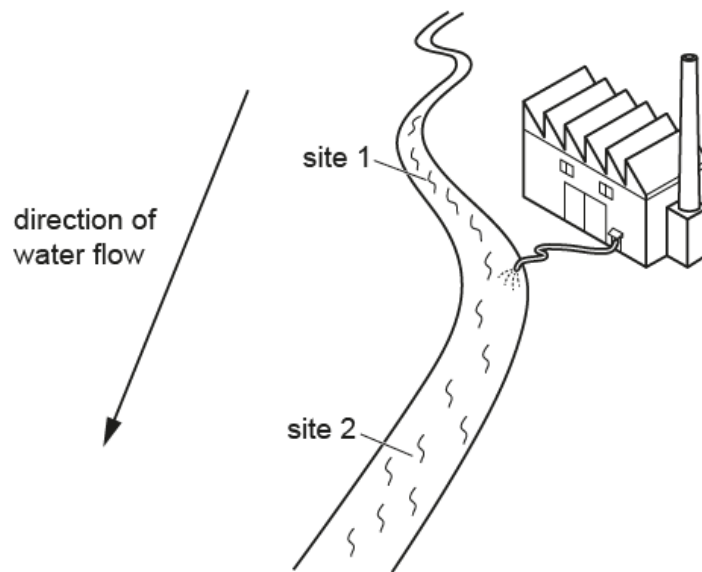


Fig. 5.2

Fig. 5.3 shows the sex ratio of the fish, *Catostomus commersonii*, in the river at site 1 and site 2. Intersex fish have both female and male reproductive organs.

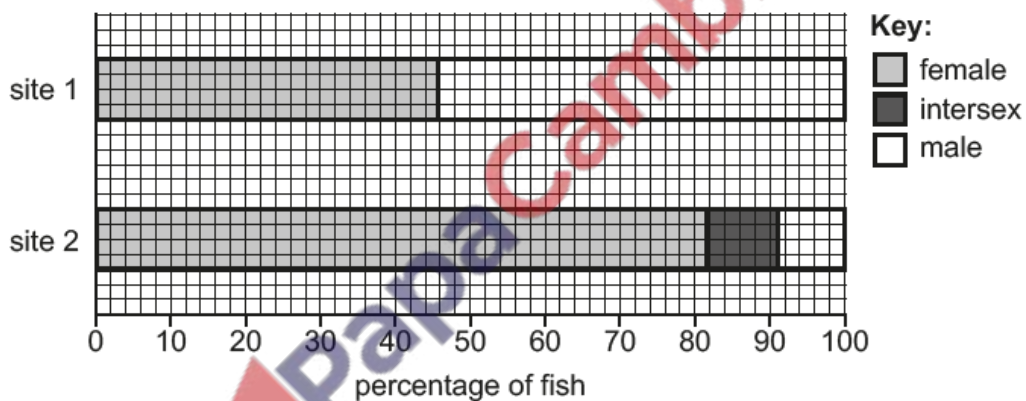


Fig. 5.3

State **and** explain what type of chemical the factory could be releasing into the river that would cause the effects shown in Fig. 5.3.

type of chemical

explanation
.....
.....

[2]

(c) State how sex is inherited in humans.

..... [1]

[Total: 9]

