

Human Influences on Ecosystem

Question Paper 1

Level	IGCSE
Subject	Biology (0610/0970)
Exam Board	Cambridge International Examinations (CIE)
Topic	Human Influences on Ecosystem
Sub-Topic	
Booklet	Question Paper 1

Time Allowed: 49 minutes

Score: /41

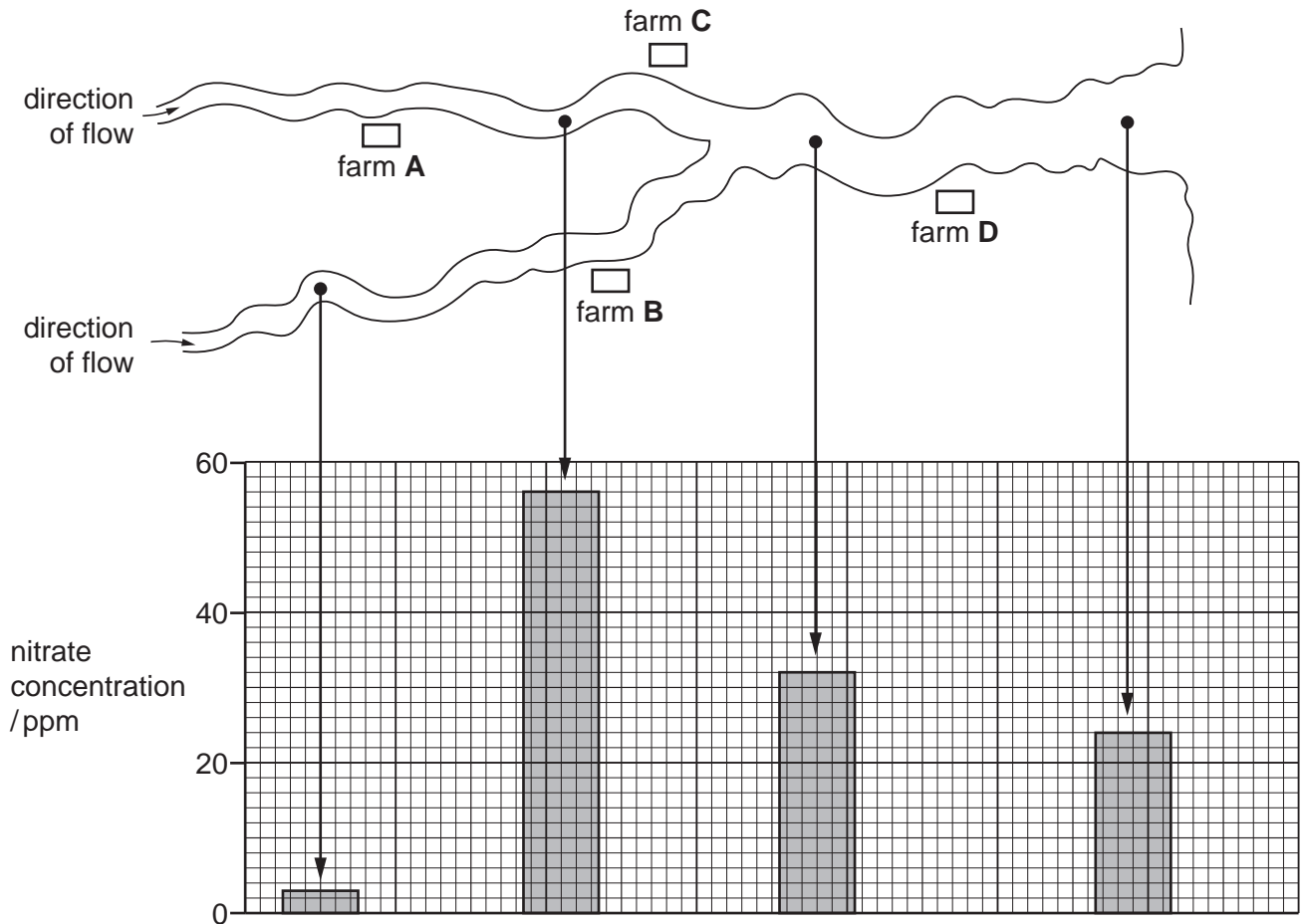
Percentage: /100

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	53%	48%	40%	33%	<25%

1 The diagram shows the positions of four farms and the concentrations of nitrate at different points in a river.

Which farm is likely to have been using too much fertiliser on its land?



2 Which effect is **least** likely to occur as a result of deforestation?

- A an increase in biodiversity
- B an increase in soil erosion
- C an increase in the level of carbon dioxide in the atmosphere
- D an increased risk of flooding

- 3 A large amount of herbicide is applied to a field. However, some of the herbicide is washed into a nearby lake.

What is the effect of the herbicide on the weeds in the field and on the plants in the lake?

	weeds in field	plants in lake
A	less growth	less growth
B	less growth	more growth
C	more growth	less growth
D	more growth	more growth

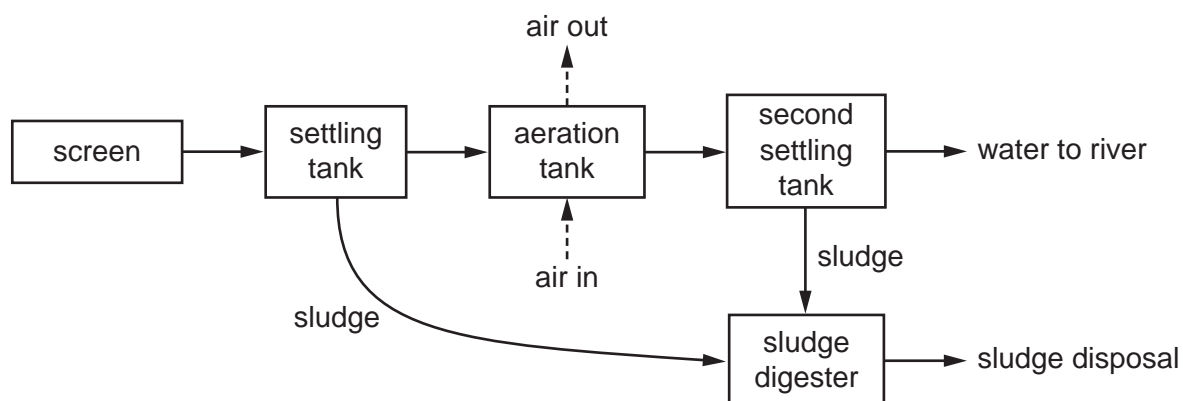
- 4 When a river is polluted by fertiliser, the following processes may occur.

- 1 increased aerobic respiration of decomposers
- 2 increased growth of producers
- 3 decreased oxygen concentration in the water

What is the correct sequence for these processes?

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

- 5 The diagram shows how sewage is treated.



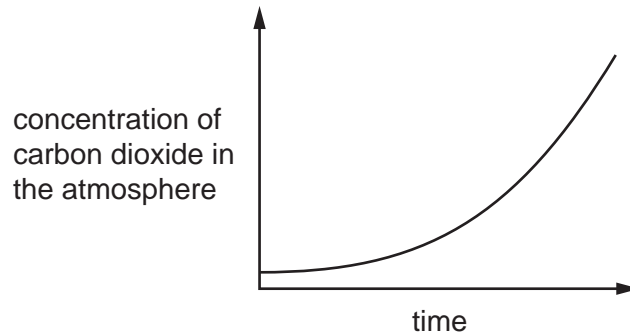
Why is air bubbled through the aeration tank?

- A** to encourage microorganisms to reproduce quickly
- B** to float the sludge
- C** to settle the sludge
- D** to stop microorganisms from reproducing too quickly

6 Three human activities are listed.

- 1 burning fossil fuels
- 2 deforestation
- 3 overusing fertilisers

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

7 The careless use of nitrogenous fertiliser near rivers and lakes can cause eutrophication.

This results in the death of fish.

What is the direct cause of the death of the fish?

- A** Decomposers reduce the amount of dissolved oxygen in the water.
- B** Nitrates are toxic to plants.
- C** The rapid growth of producers uses up all the available nutrients.
- D** The sudden increase in the number of bacteria increases the spread of disease.

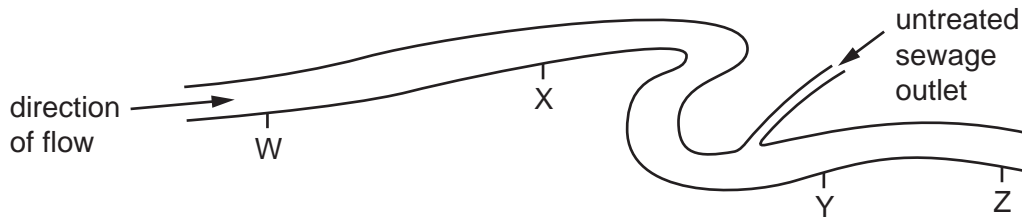
8 What is a reason for conserving plant species?

- A to absorb oxygen from the air
- B to decrease rainfall
- C to obtain drugs for medicinal use
- D to release carbon dioxide into the air

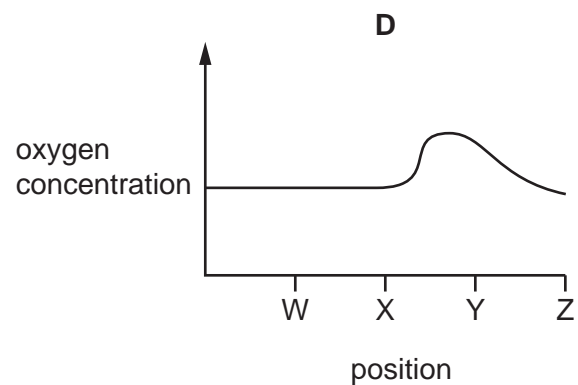
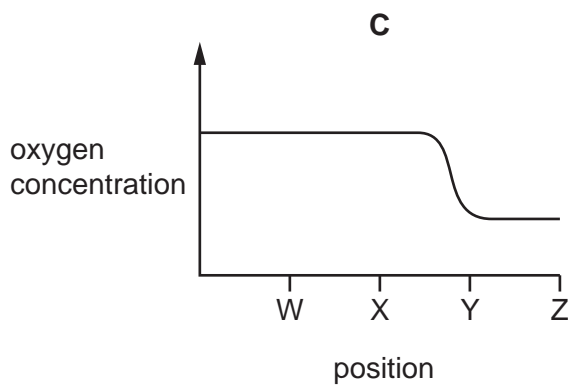
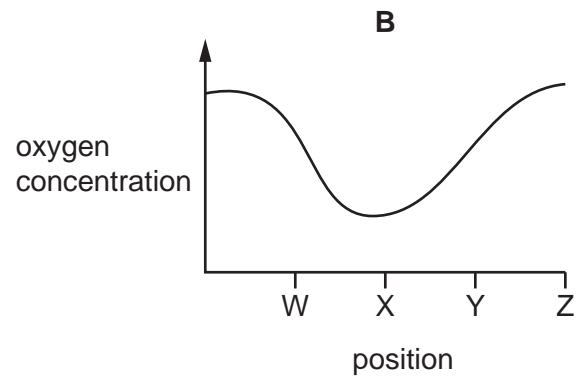
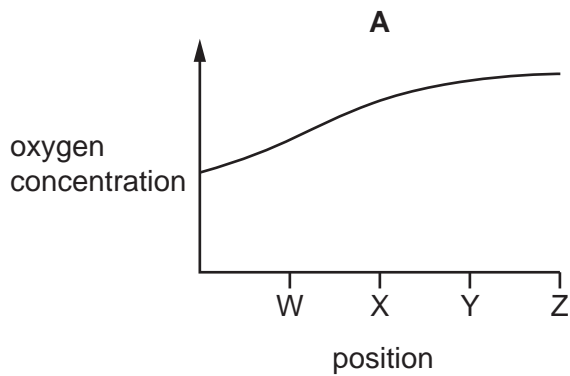
9 What is **reduced** after deforestation?

- A force of rain hitting the ground
- B rainwater run-off
- C soil erosion
- D soil fertility

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



Which graph shows oxygen concentrations in the river?



11 Which two gases **both** contribute to global warming?

- A carbon dioxide and methane
- B methane and oxygen
- C oxygen and sulfur dioxide
- D sulfur dioxide and carbon dioxide

12 Which process may result in eutrophication in a lake?

- A bleach entering from a factory
- B fertilisers entering from farmland
- C hot water entering from a power station
- D pesticides entering from farmland

13 Which two gases are the biggest contributors to the greenhouse effect?

- A carbon dioxide and methane
- B carbon monoxide and carbon dioxide
- C methane and sulfur dioxide
- D sulfur dioxide and carbon monoxide

14 Over-use of fertilisers on farmland causes the chemicals in the fertilisers to be washed into ponds and lakes.

This causes eutrophication resulting in the following events.

- 1 algae grow
- 2 fish die
- 3 bacteria grow
- 4 oxygen decreases

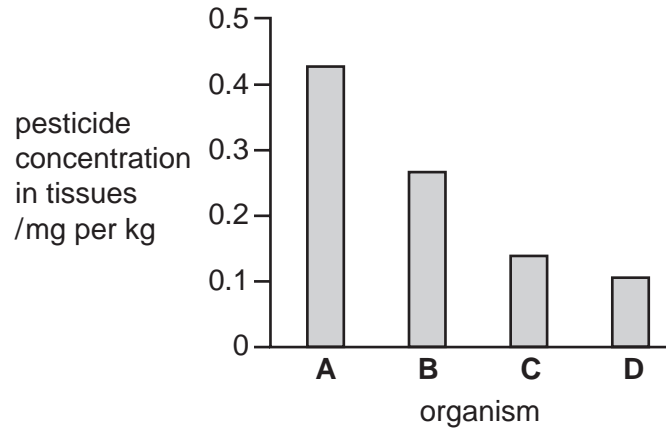
What is the correct sequence of these events?

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

15 The concentration of a pesticide in the tissues of the organisms in the following food chain was measured.

plants → small fish → large fish → birds of prey

Which bar on the chart represents the large fish?



16 Which activity will be **least** likely to lead to the extinction of species?

- A conservation
- B deforestation
- C use of herbicides
- D use of pesticides

20 Which pollutants of water can lead to eutrophication?

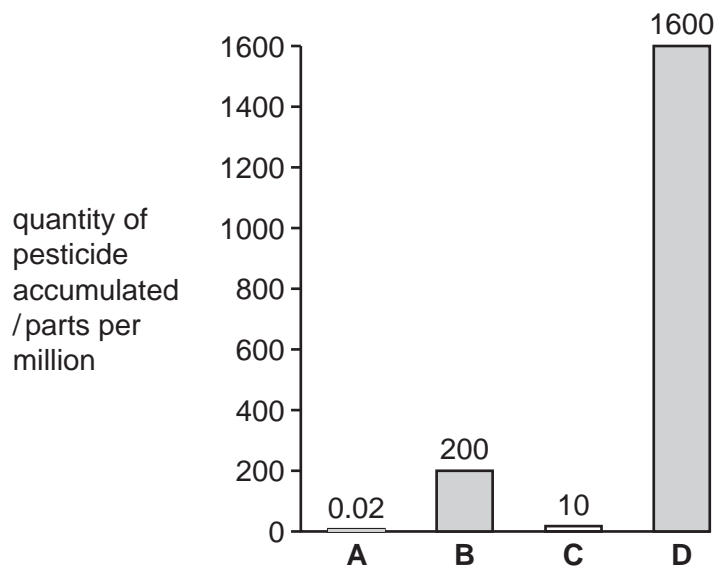
	fertilisers	herbicides	insecticides	sewage
A	✓	✓	x	x
B	✓	x	x	✓
C	x	✓	✓	x
D	x	x	✓	✓

21 What is an effect of pollution by nuclear fall-out?

- A** deforestation
- B** eutrophication
- C** global warming
- D** increased mutation rate

22 The graph shows the quantities of pesticides that accumulate in four populations, each at different trophic levels in a food chain.

Which population is most likely to be herbivores?



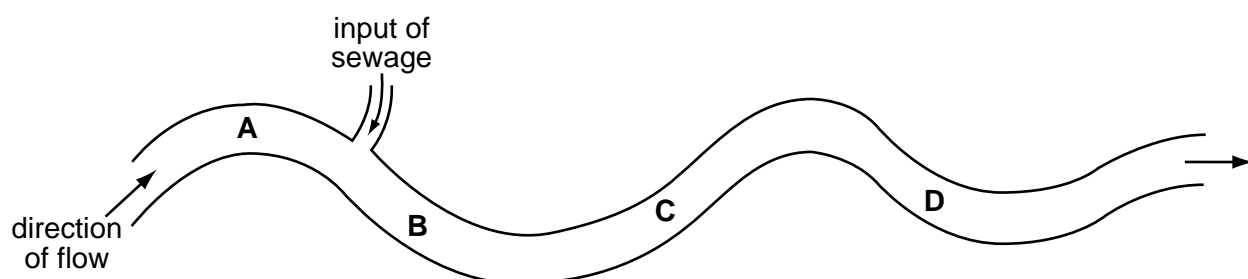
23 Which feature of deforestation has the greatest effect on the atmosphere?

- A extinction of forest animal species
- B increased risk of flooding
- C reduction of photosynthesis
- D soil erosion

24 The bloodworm is found in heavily polluted water.

The diagram shows where raw sewage flows into a river.

Where would there be fewest bloodworms?



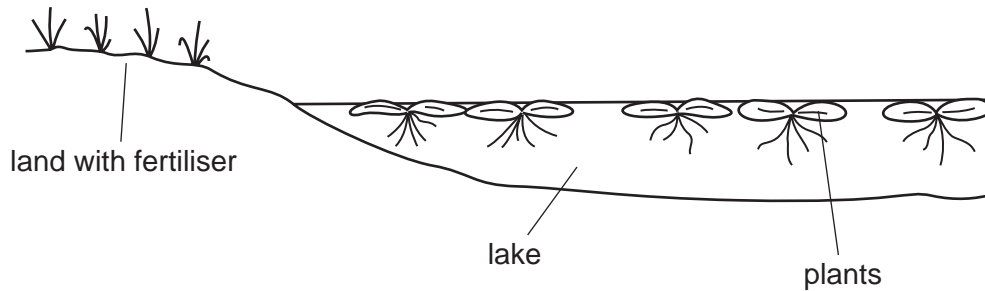
25 What describes eutrophication and its effect on a river?

- A Nutrients are depleted in the river, causing bacteria to die. This allows plants to grow and deoxygenate the water.
- B Nutrients are depleted in the river, causing plants to die. These decompose, so the water is deoxygenated.
- C Nutrients enter the river, causing algae to grow. These die and decompose, so the water is deoxygenated.
- D Nutrients enter the river, causing plants to grow. These provide extra food for animals, which deoxygenate the water.

26 What are the possible effects of deforestation?

	loss of soil	flooding	decrease in atmospheric carbon dioxide
A	✓	✓	x
B	✓	x	✓
C	x	✓	x
D	x	x	✓

- 27 A farmer put some fertiliser on his field. Soon afterwards, there was a heavy storm and some of the fertiliser drained into a lake.



What is the effect of the fertiliser on the growth of the crop plants in the field and the plants in the lake?

	crop plants	lake plants
A	decrease growth	decrease growth
B	decrease growth	increase growth
C	increase growth	decrease growth
D	increase growth	increase growth

- 28 There is evidence that the concentration of carbon dioxide in the Earth's atmosphere is increasing.

Which change could explain this?

- A** less combustion of fossil fuels
- B** more combustion of stored carbon compounds from dead organisms
- C** more photosynthesis by plants
- D** people breathing faster

29 Which human activity can cause eutrophication of lakes?

- A releasing carbon dioxide
- B releasing sulfur dioxide
- C using fertilisers
- D using pesticides

30 Insecticides sprayed in low concentrations may increase the yield of a crop, but may also be harmful to wildlife.

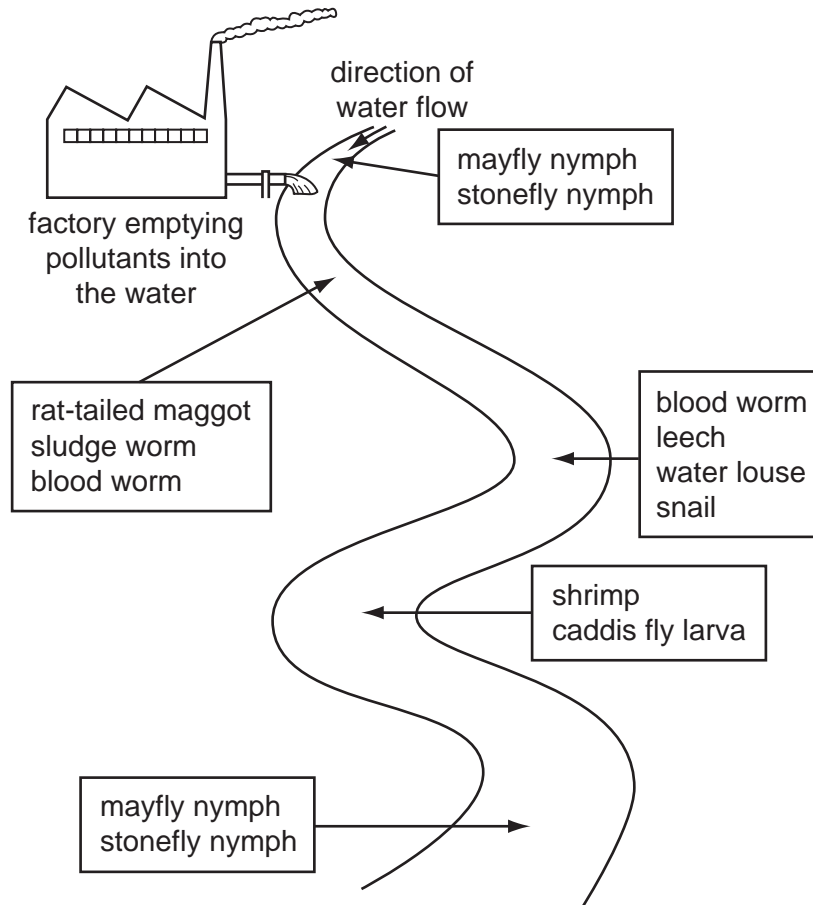
What is an explanation for this?

- A Insecticides cause acid rain.
- B Insecticides enter the food chain.
- C Insecticides increase the nitrates in soil.
- D Insecticides kill other plants.

31 Which pollutant is **most** likely to cause mutations?

- A carbon dioxide
- B methane
- C nuclear radiation
- D sulfur dioxide

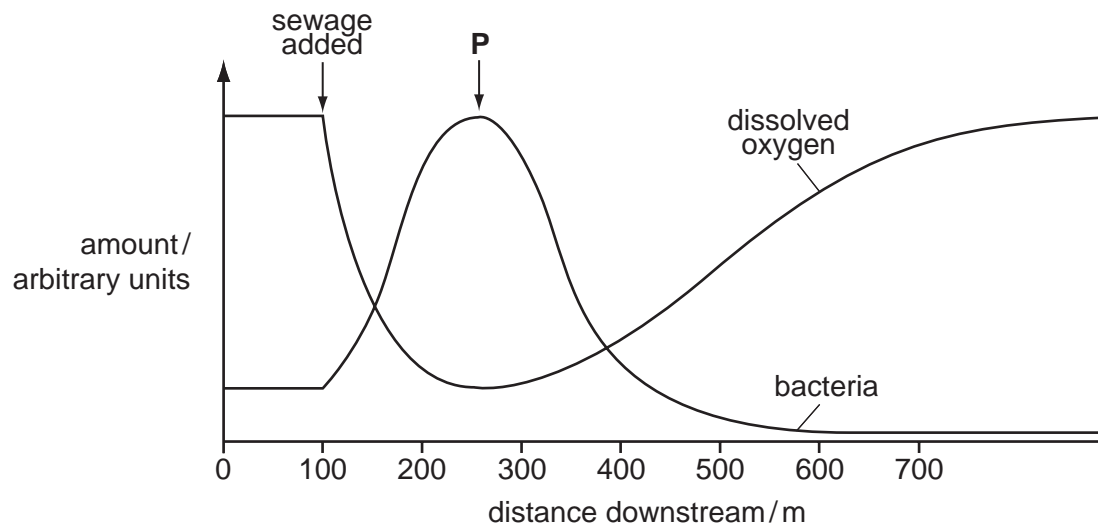
- 32 The diagram shows the results of a survey on the types of animals found along a stretch of river near to a factory.



Which of the following animals lives in the most polluted water?

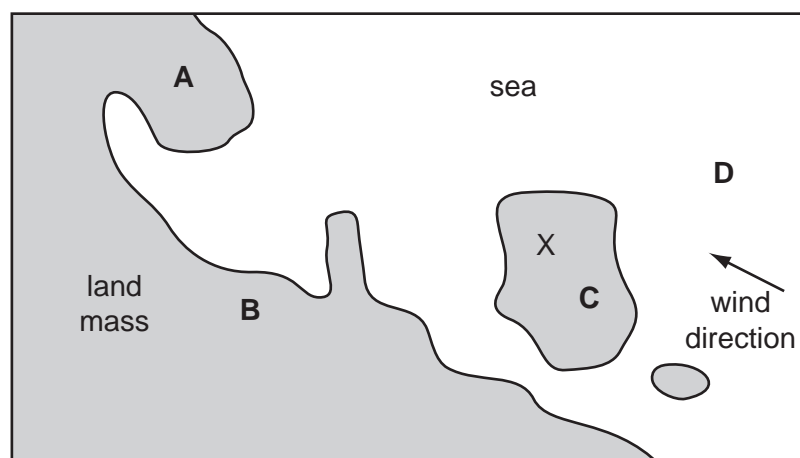
- A blood worm
- B caddis fly larva
- C leech
- D stonefly nymph

- 33 The graph shows how oxygen concentration and the number of bacteria change when sewage is added to a river.



What describes the oxygen concentration and the number of bacteria between the point at which sewage is added and point **P**?

- A** Oxygen concentration and number of bacteria stay the same.
 - B** Oxygen concentration decreases and number of bacteria increases.
 - C** Oxygen concentration increases and number of bacteria decreases.
 - D** Oxygen concentration remains the same and number of bacteria increases.
- 34 On the map shown, sulfur dioxide is produced at X. Which region is most likely to experience acid rain?

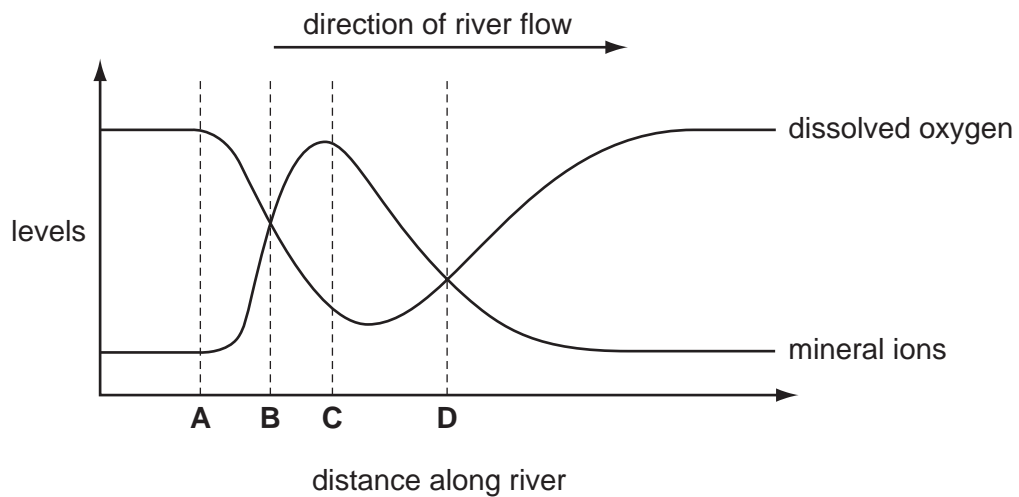


35 Which agricultural activity can cause the most pollution?

- A adding artificial fertilisers
- B cutting down trees
- C digging plant material into the soil
- D growing high-yielding crops

36 The graph shows the levels of dissolved oxygen and mineral ions in a river.

At what point does raw sewage enter the river?



37 Different pesticides were tested to see how poisonous they were to fish. Scientists found the concentration of pesticide that killed 50% of the fish within four days.

The table shows the results of the tests.

pesticide	concentration that killed 50% of the fish/p.p.m.
DDT	0.03
dieldrin	0.01
malathion	12.20
parathion	2.11

Which pesticide was the most dangerous to the fish?

- A DDT
- B dieldrin
- C malathion
- D parathion

38 Weeds are growing in a crop.

What should be used to kill the weeds?

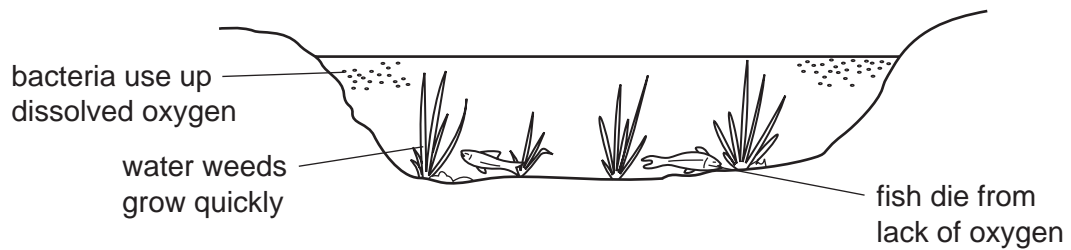
- A artificial fertiliser
- B herbicide
- C magnesium salts
- D organic manure

39 A large area is heavily overgrazed for many years.

How does this affect soil nutrients and soil erosion?

	soil nutrients	soil erosion
A	decrease	decrease
B	decrease	increase
C	increase	decrease
D	increase	increase

40 The diagram shows some of the effects of human activity on a river.



What could have caused these effects?

- A air pollution
 - B deforestation
 - C over-use of fertilisers
 - D presence of weed killers
- 41 What is a direct result of deforestation?
- A decreased leaching of mineral salts
 - B increased loss of soil
 - C increased production of methane
 - D increased recycling of important minerals