21. Human Influence on Ecosystem

(Past Year Topical Questions 2010-2015)

May/June 2010 (11)

38 What makes nuclear fall-out dangerous to living organisms?

A It causes flooding.

B It causes global warming.

C It damages DNA.

D It damages soils.

39 A very large area of land has been cleared of rainforest and planted with soybean.

What result of deforestation will encourage the growth of the soybean plants?

A decrease in atmospheric oxygen

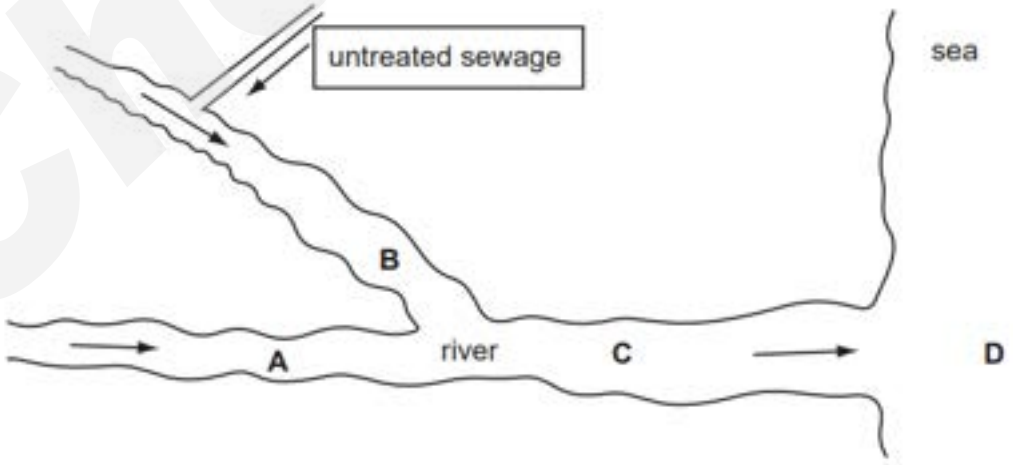
B decrease in rainfall

C increase in atmospheric carbon dioxide

D increase in soil erosion

40 The map shows a river flowing into the sea. The river is polluted by untreated sewage.

At which labelled point will the oxygen content of the water be lowest?



Oct/Nov 2010 (11)

39 What effect does deforestation have on the levels of carbon dioxide, oxygen and water vapour in the atmosphere?

	carbon dioxide	oxygen	water vapour
A	less	less	more
B	less	more	more
C	more	less	less
D	more	more	less

40 A persistent pesticide is one that does not break down.

What is one disadvantage of a persistent pesticide?

A It becomes more concentrated at each level in the food chain.

B It breaks down within a few months.

C It only destroys one particular pest in the food chain.

D It does not dissolve in water.

May/June 2011 (11)

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

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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

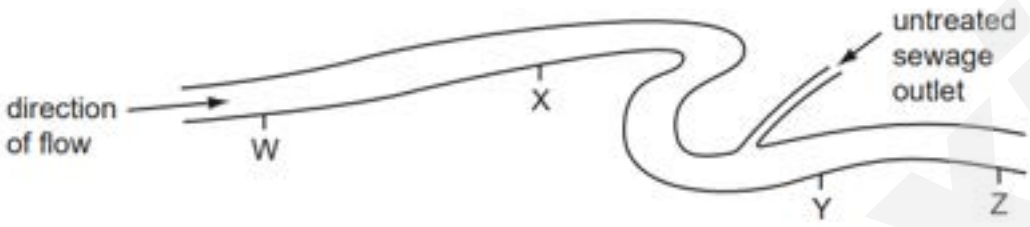
B deforestation

C over-use of fertilisers

D presence of weed killers

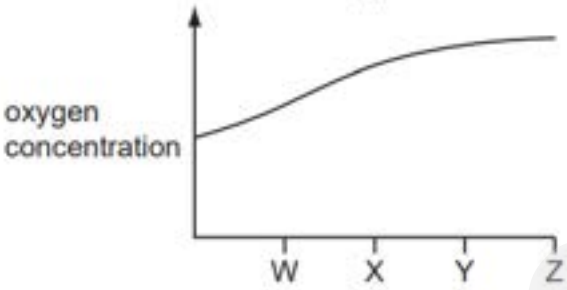
Oct/Nov 2011 (11)

39 The diagram shows four places on a river, where water samples were taken.



Which graph shows oxygen concentrations in the river?

A



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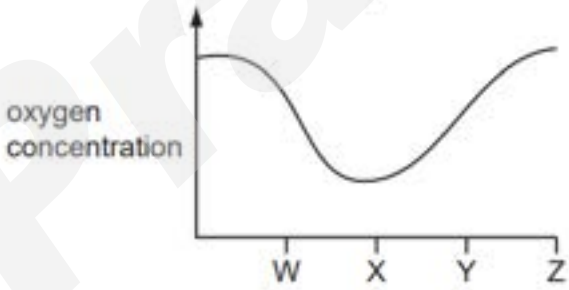

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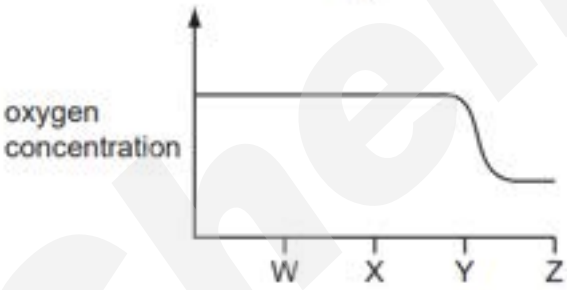

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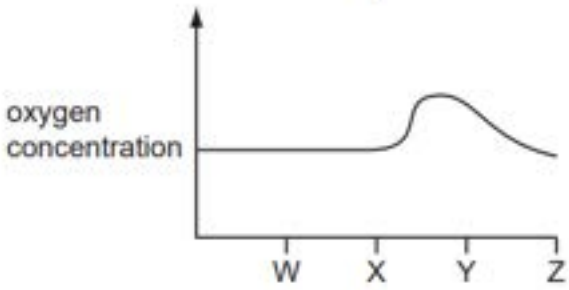

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40 Different pesticides were tested to see how poisonous they were to fish. Scientists found the concentration of pesticide that killed 50 % of the fish within four days.

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

May/June 2012 (12)

39 Which agricultural activity can cause the most pollution?

A adding artificial fertilisers

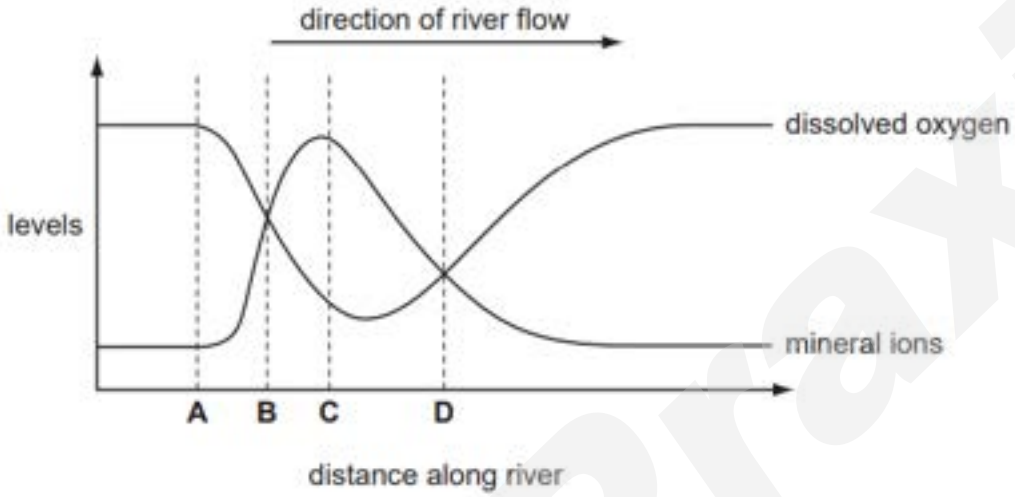
B cutting down trees

C digging plant material into the soil

D growing high-yielding crops

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

At what point does raw sewage enter the river?



Oct/Nov 2012 (11)

15 What has **not** increased the world's food production in the last 100 years?

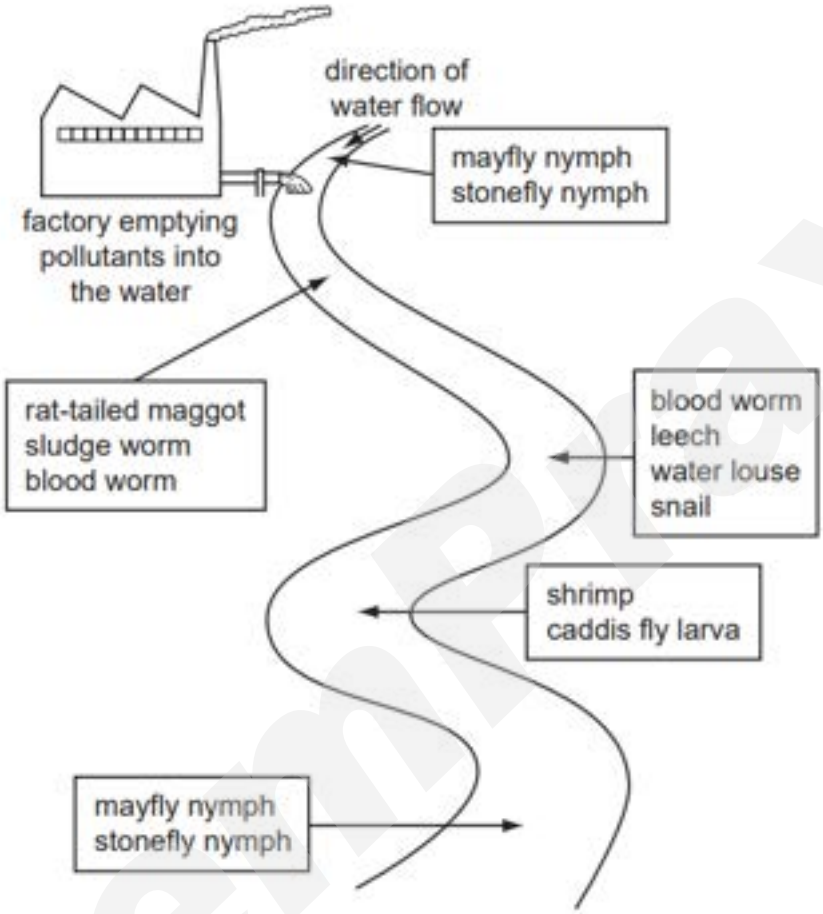
A artificial selection

B herbicides

C natural selection

D pesticides

38 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

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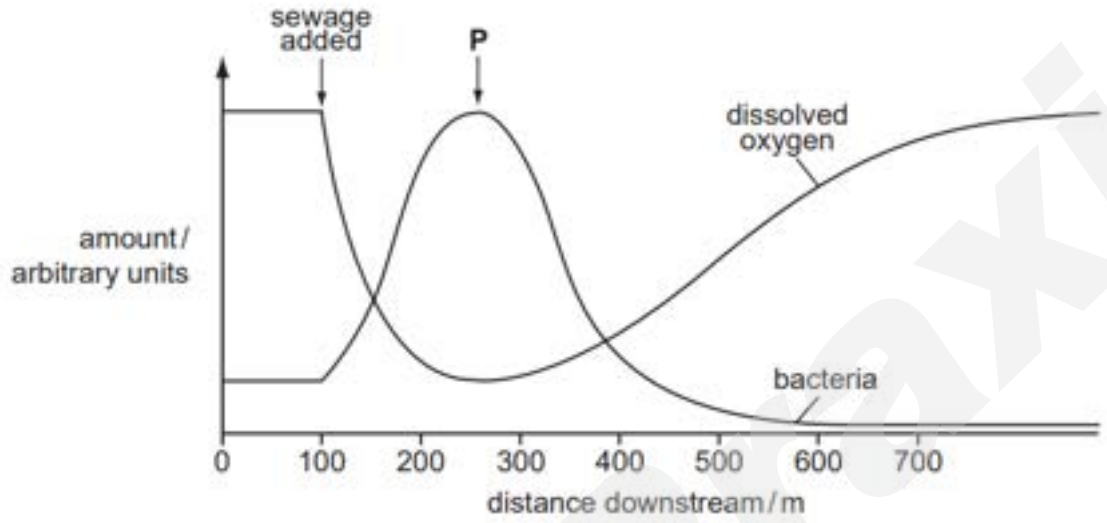
39 The graph shows how oxygen concentration and the number of bacteria change when sewage is added to a river.



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

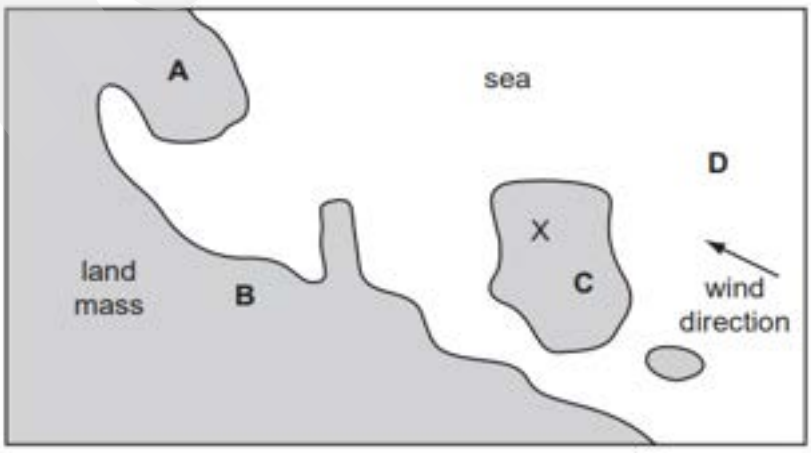
A Oxygen concentration and number of bacteria stay the same.

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.

40 On the map shown, sulfur dioxide is produced at X. Which region is most likely to experience acid rain?



Oct/Nov 2012 (11)

36 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

38 Which human activity can cause eutrophication of lakes?

A releasing carbon dioxide

B releasing sulfur dioxide

C using fertilisers

D using pesticides

40 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.

Oct/Nov 2012 (13)

38 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

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

A carbon dioxide

B methane

C nuclear radiation

D sulfur dioxide

40 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.

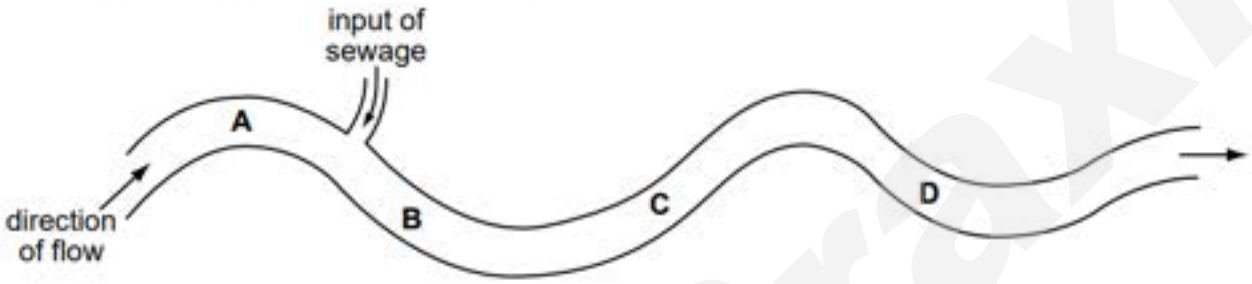
D Insecticides kill other plants.

May/June 2013 (11)

39 The bloodworm is found in heavily polluted water.

The diagram shows where raw sewage flows into a river.

Where would there be fewest bloodworms?



40 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.

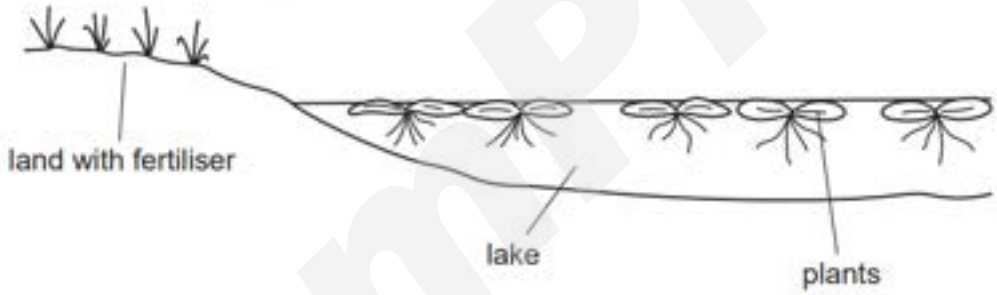
D Nutrients enter the river, causing plants to grow. These provide extra food for animals, which deoxygenate the water.

May/June 2013 (12)

39 What are the possible effects of deforestation?

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

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

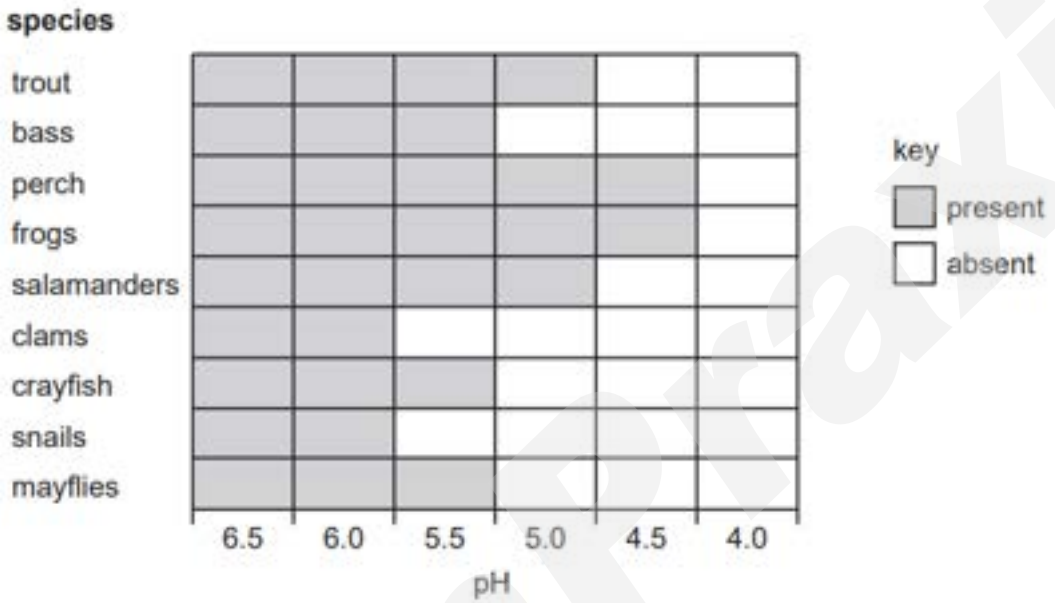


What is the effect of the fertiliser on the growth of the crop plants in the field and the plants in the lake?

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

Oct/Nov 2013 (11)

39 The chart shows which species of different animals are present in rivers of different pH.



Which conclusion can be drawn from this information?

A Both frogs and mayflies can live in more acidic river water than trout.

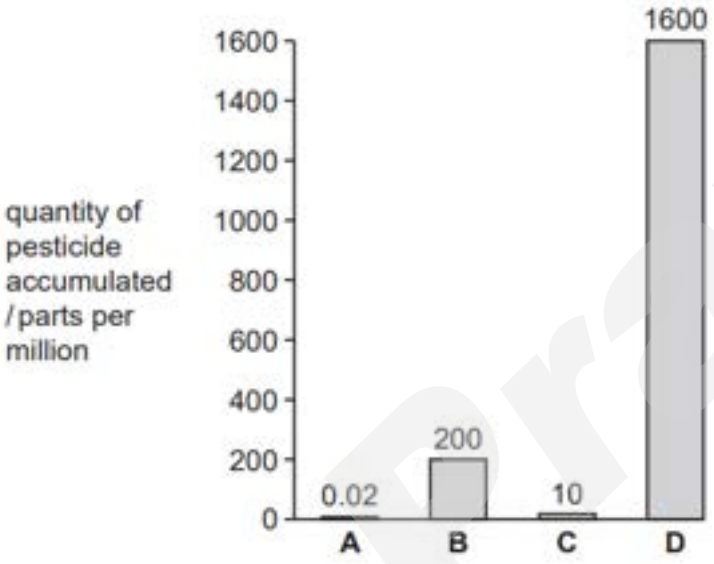
B Clams and snails are most affected by acidic river water.

C Most species can live in river water below pH 5.5.

D Not all species are affected by acidic river water.

40 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?



Oct/Nov 2013 (13)

39 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

May/June 2014 (11)

33 The surface waters of the ocean contain a population of microscopic plants.

Which factor would result in **fewer** of these plants?

A an increase in the population of microscopic animals

B greater concentration of mineral nutrients

C higher temperature

D more light

38 What is reduced when untreated sewage is released into rivers?

A the amount of nitrate

B the concentration of carbon dioxide

C the concentration of oxygen

D the number of bacteria

40 Which pollutants of water can lead to eutrophication?

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

May/June 2014 (12)

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

A deforestation

B eutrophication

C global warming

D increased mutation rate

Oct/Nov 2014 (11)

38 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 $1 \rightarrow 3 \rightarrow 4 \rightarrow 2$

B $1 \rightarrow 4 \rightarrow 3 \rightarrow 2$

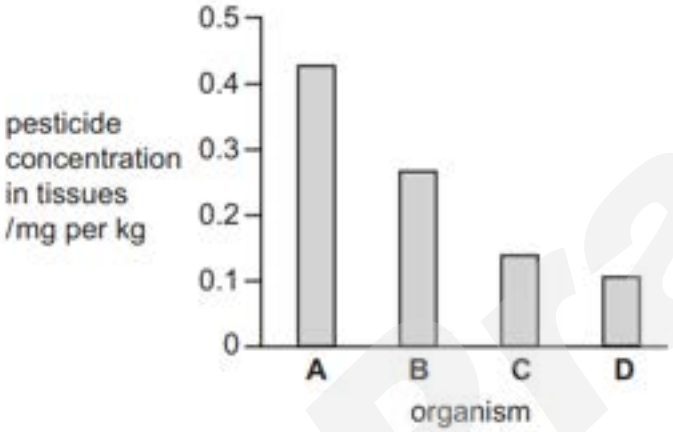
C $3 \rightarrow 4 \rightarrow 2 \rightarrow 1$

D $4 \rightarrow 1 \rightarrow 2 \rightarrow 3$

39 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?



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

A conservation

B deforestation

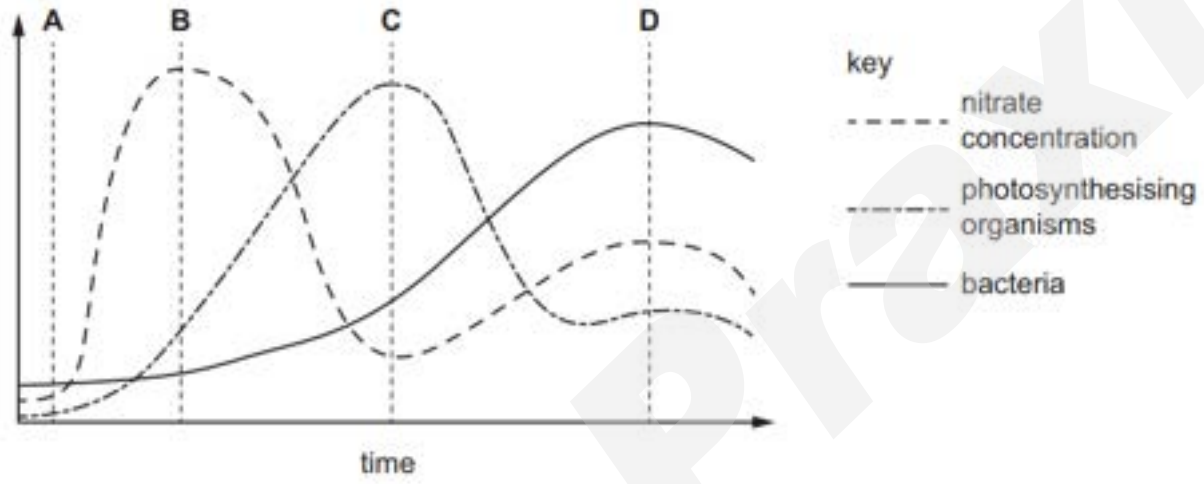
C use of herbicides

D use of pesticides

Oct/Nov 2014 (13)

38 The graph shows changes in part of a lake after it has been polluted by fertilisers from a nearby farm.

At which time will the oxygen concentration in the water be lowest?



May/June 2015 (11)

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

A carbon dioxide and methane

B methane and oxygen

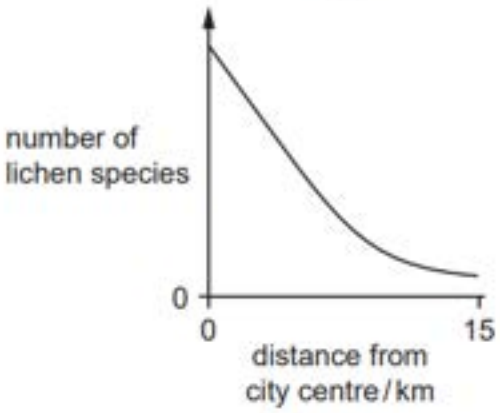
C oxygen and sulfur dioxide

D sulfur dioxide and carbon dioxide

40 Lichens are organisms that do **not** grow well in air containing sulfur dioxide.

Which graph shows the change in number of lichen species from the centre of an industrial city to the countryside 15 km away?

A



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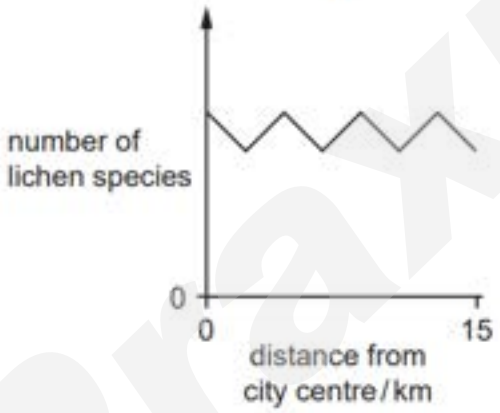
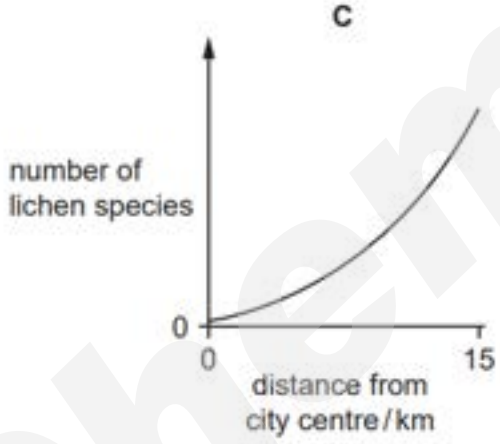
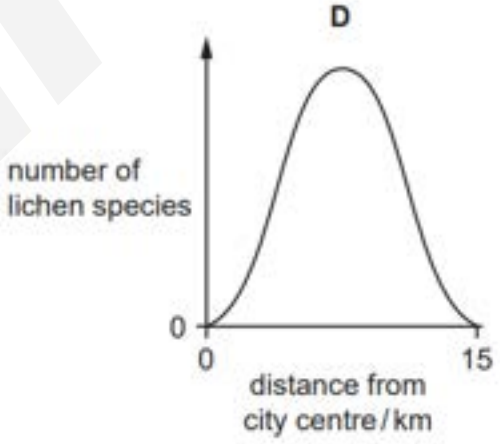


C



D



Oct/Nov 2015 (13)

38 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

39 What is **reduced** after deforestation?

A force of rain hitting the ground

B rainwater run-off

C soil erosion

D soil fertility