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Level: SL IB in Biology
Subject: Biology
Topic: IB SL Biology
Type: Topic Question

2002



1583

All International Baccalaureate IB Topic Questions SL Biology

BIOLOGY

SL - IB

Key skills

Mark Scheme

Answer 1

The correct answer is C, data collected through scientific research has shown clear links between the combustion of fossil fuels and climate change. This opposes the idea that climate change is a natural phenomenon.

Answer A is incorrect, it is true that there are many contributing factors, however, it is vague and does not provide opposition to the statement that climate change is natural.

Answer B is incorrect as fossil fuel companies are likely to be biased as they are economically impacted by climate change.

Answer D is incorrect as, although warming hasn't been consistent, this does not oppose the idea that climate change is natural.

This question tackles the Nature of Science (NOS) element of the Biology course.

Answer 2

The correct answer is A. Drained peat bogs are no longer waterlogged and anaerobic, allowing saprotrophs to break down the organic matter and release the stored carbon when they respire.

B implies that peat stores carbon in the form of a gas trapped underground; carbon in peat is stored in the form of organic molecules inside dead plant material.

C may occur, and could lead to the release of the carbon stored in surface vegetation on the peat bog should the grazers die and decompose, but the carbon stored in surface vegetation is only a tiny fraction of the carbon stored under the surface in peat.

D is incorrect as it implies that plants extract carbon from the soil in the same way that they gain minerals such as nitrates; plants gain their carbon by diffusion from the air or water around them, not from the soil.

Answer 3

The correct answer is D; greenhouse gases absorb mainly longwave radiation, which is the type of radiation re-emitted by the earth.

A, B and C are not scientifically accurate statements.

Answer 4

The correct answer is B; the impact of a gas on the greenhouse effect depends on its ability to absorb radiation and its relative abundance in the atmosphere.

A and D are incorrect because neither is the only factor involved.

C is incorrect because while all three of these factors are relevant, atmospheric lifetime is only important because it affects the atmospheric concentration of a gas; it is therefore effectively repeating the same factor twice to include both in the list.

Answer 5

The correct answer is C because neither of statements I or II are directly related to global warming.

A, B and D all contain either statement I, II, or both.

- The depletion of ozone in statement I results from the emission of gases such as CFCs, not from increasing global temperatures.
- Ocean acidification in statement II results from increasing concentrations of atmospheric carbon dioxide, so while it shares a cause with global warming, it is not caused by global warming. Be careful not to confuse this with coral bleaching which can be caused by global warming.

Answer 6

The correct answer is C because the graph shows a clear correlation; as one variable shows an overall increase beginning in the mid 1700s, so does the other.

A, B and D all contain causal statements which cannot be concluded from the graph and would require more evidence to support them.

- Note that both A and D are considered to be correct, but more evidence than just this graph is required to reach these conclusions.



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