



## EXAM PAPERS PRACTICE

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Level: HL IB in Biology

Subject: Biology

Topic: IB HL Biology

Type: Topic Question

2002



1583

All International Baccalaureate IB Topic Questions HL Biology

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**BIOLOGY**

**HL - IB**

Key skills

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**\*\*Question 1\*\***

A climate change skeptic made the following statement:

**'There is no consensus amongst scientists that climate change is real; global warming is a natural and normal phenomenon which has occurred at other points in history.'**

Which of the following opposes the idea that global warming is a natural phenomenon?

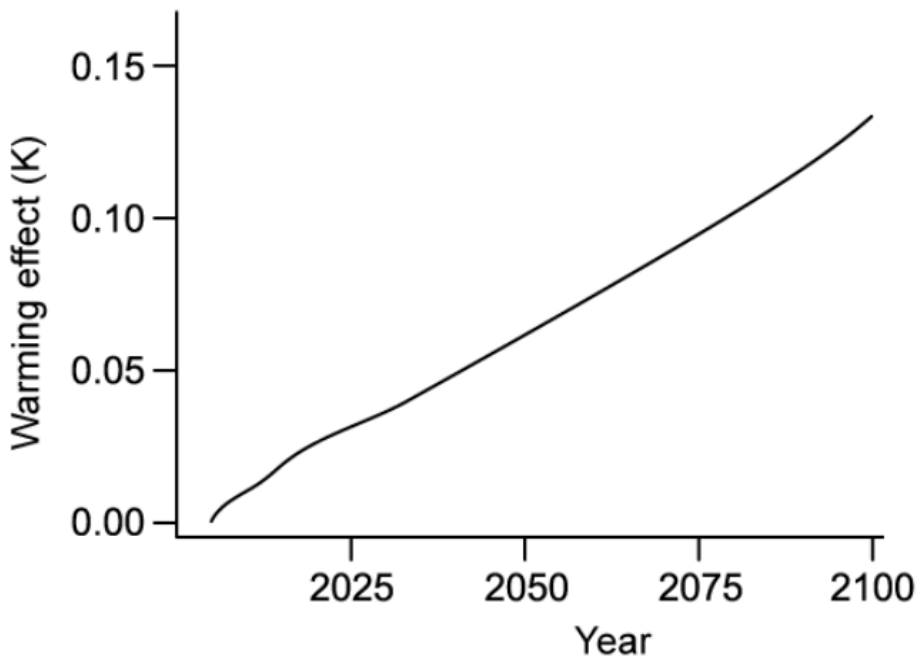
- A. The idea that many factors contribute towards global climate
- B. Data produced by companies involved in global fossil fuel supply shows decreasing greenhouse gas production
- C. Scientific research which links the combustion of fossil fuels with global warming
- D. Published data which shows that rates of global warming have not been consistent over the last 50 years

[1 mark]

**\*\*Question 2\*\***

The graph below shows the predicted effect on global warming of the continued draining of peat bogs.

Warming effect is measured on the kelvin (K) scale.



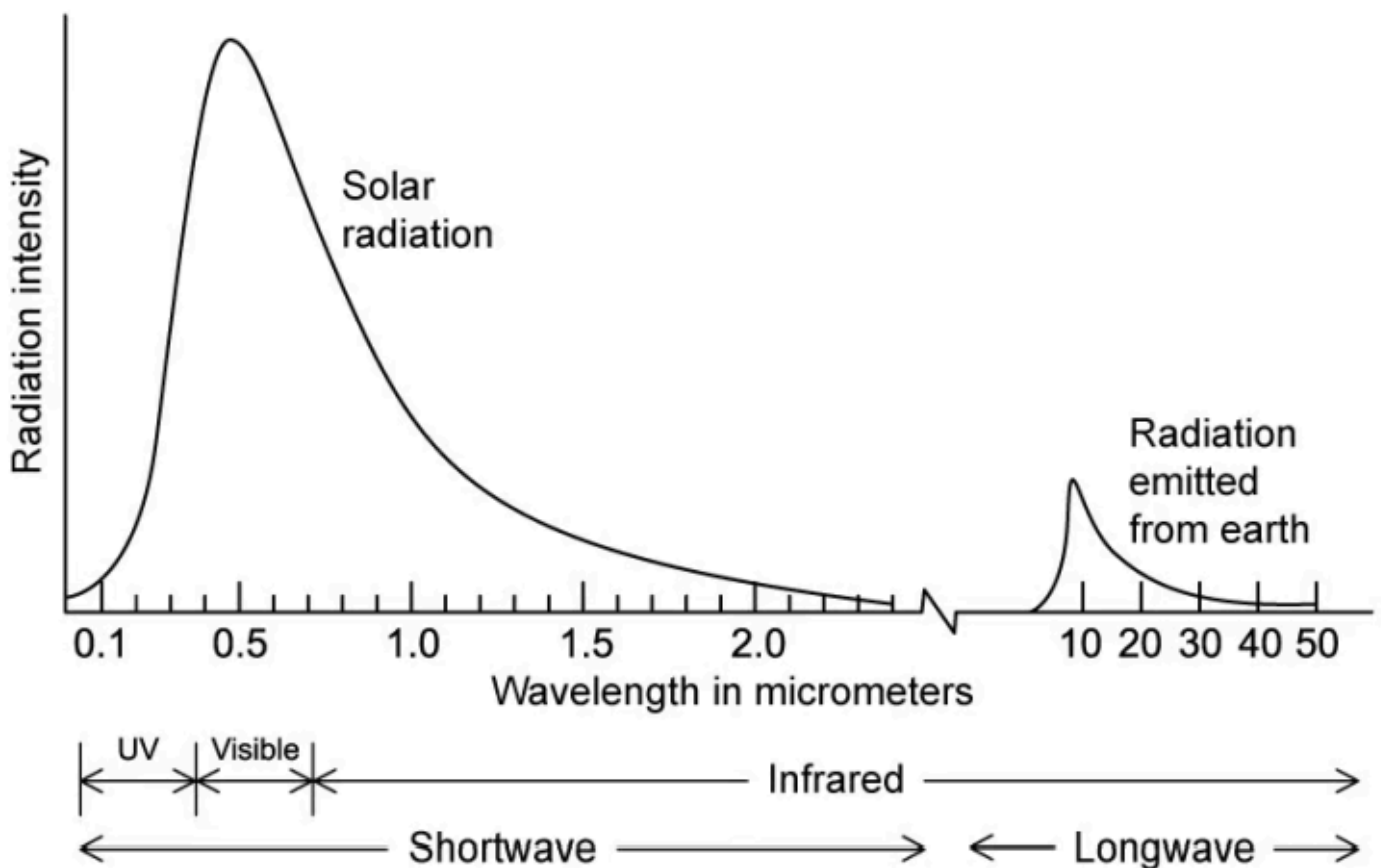
How does peat drainage lead to the effect on warming seen in the graph?

- A. Drainage allows saprotroph activity to increase, releasing carbon dioxide when the organic matter stored in the peat is broken down.
- B. Water seals the stored carbon dioxide underground, so the loss of water allows the gas to escape.
- C. The removal of water from the peatland allows herbivores to move in and consume the vegetation growing on the peat bog, eventually leading to the release of carbon stored in the vegetation into the atmosphere.
- D. Drained land can be used for crop growth, removing carbon from the soil.

**[1 mark]**

**\*\*Question 3\*\***

The graph below shows the differences between the radiation reaching the Earth from the sun and the radiation re-emitted by the Earth.



How does this radiation cause the greenhouse effect?

- A. Greenhouse gases absorb mainly low-intensity radiation.
- B. Greenhouse gases absorb mainly shortwave radiation.
- C. Greenhouse gases absorb mainly UV radiation.
- D. Greenhouse gases absorb mainly longwave radiation.

[1 mark]

**\*\*Question 4\*\***

Different greenhouse gases have different global warming potential (GWP).

Gas	GWP over 100 years
Carbon dioxide	1
Methane	21
Nitrous oxide	310
Sulfur hexafluoride	23,900

Which factors contribute to the global warming potential of greenhouse gases?

- A. Atmospheric concentration only.
- B. Atmospheric concentration and ability to absorb radiation.
- C. Atmospheric concentration, ability to absorb radiation, and atmospheric lifetime.
- D. Ability to absorb radiation only.

[1 mark]



**\*\*Question 5\*\***

Which of the following are impacts of global warming?

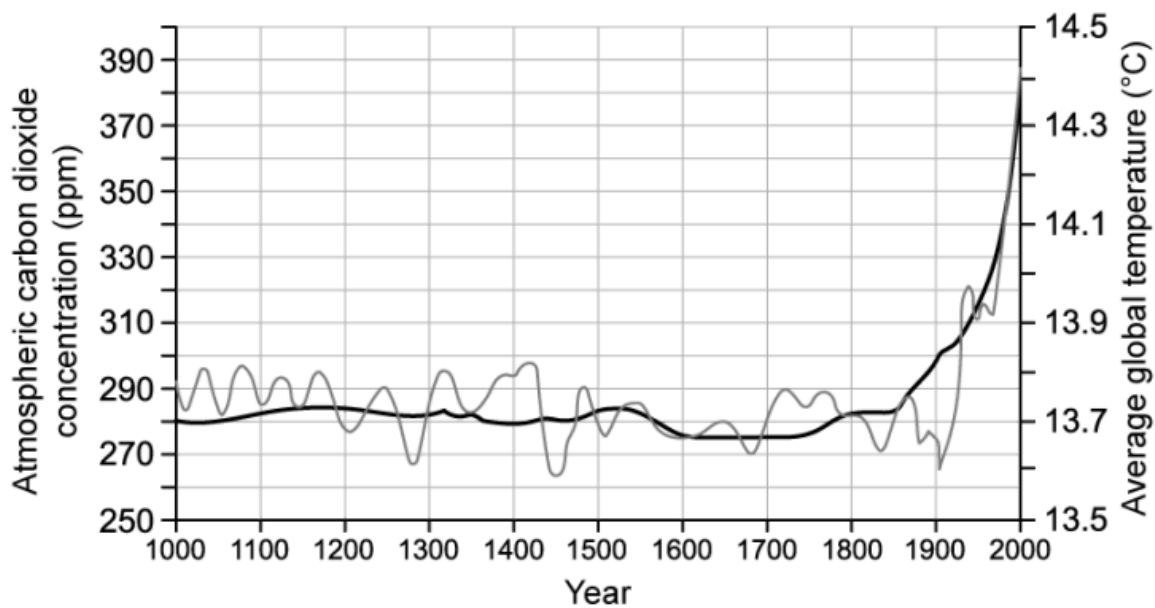
- I. Increased UV radiation reaching Earth due to depletion of ozone gas in the atmosphere
- II. Ocean acidification
- III. An increase in the number of extreme weather events

- A. I and II only
- B. II and III only
- C. III only
- D. I, II, and III

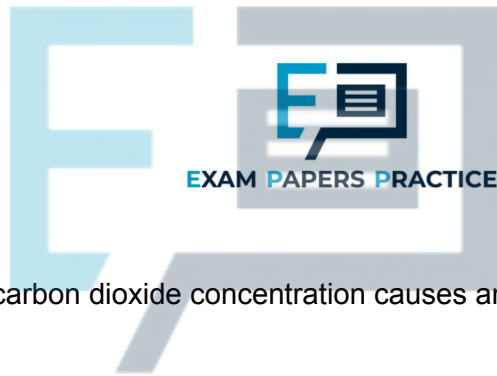
[1 mark]

**\*\*Question 6\*\***

What can be concluded from the graph shown?



**Key:** — = Carbon dioxide — = Temperature



- A. Increasing atmospheric carbon dioxide concentration causes an increase in average global temperatures.
- B. Increasing average global temperatures cause an increase in atmospheric carbon dioxide.
- C. There is a correlation between atmospheric carbon dioxide concentration and average global temperature.
- D. The industrial revolution that began in the mid-1700s has caused an increase in average global temperatures.

**[1 mark]**