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

2002

XVIII

1583

All International Baccalaureate IB Topic Questions SL Biology

BIOLOGY

SL - IB

Key skills

Question 1.

Which of the following statements about inorganic nutrients are correct?

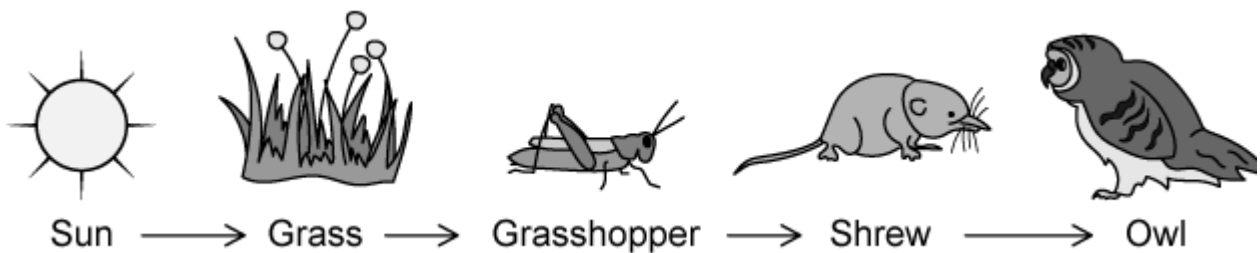
- I. Living organisms gain all of their inorganic nutrients from the abiotic environment.
- II. Inorganic nutrients include simple compounds of carbon, hydrogen, oxygen, and nitrogen.
- III. Organisms need inorganic nutrients to build organic molecules.

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

[1 mark]

Question 2.

EXAM PAPERS PRACTICE
The energy transferred from the sun to the grass in this food chain is $65\,000\text{ kJ m}^{-2}\text{ year}^{-1}$.



Approximately how much energy is passed from the shrew to the owl in $\text{kJ m}^{-2}\text{ year}^{-1}$?

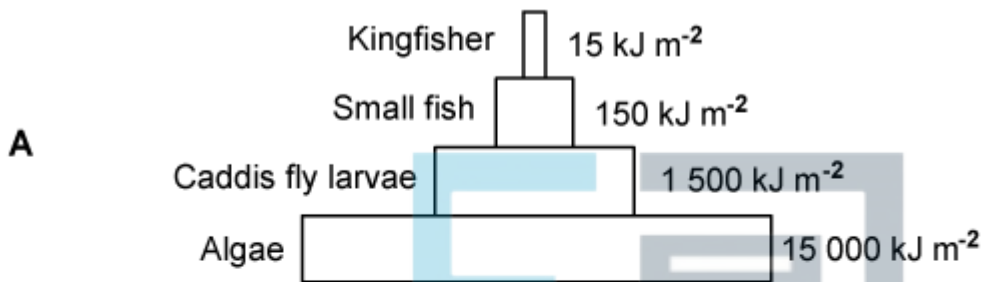
- A. 650 000
- B. 6 500
- C. 650
- D. 65

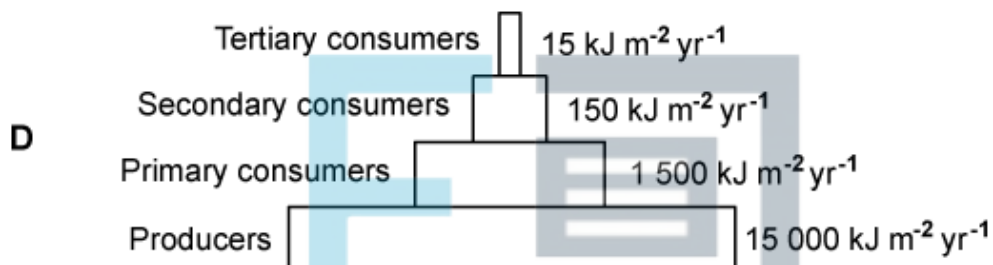
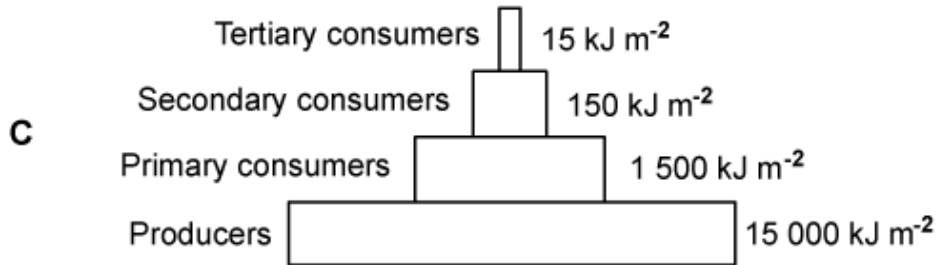
[1 mark]

Question 3.

Which pyramid of energy correctly represents the food chain shown?

Algae → caddis fly larvae → small fish → kingfisher





[1 mark]

Question 4.

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Which of the following statements about the removal of carbon from the atmosphere are correct?

- I. Atmospheric carbon is converted into carbohydrates during photosynthesis.
- II. Carbon enters the cells of aquatic plants by diffusing directly from the surrounding water.
- III. Carbon combines with water to form carbonic acid, which dissociates to form hydrogen carbonate ions, raising the pH of water.

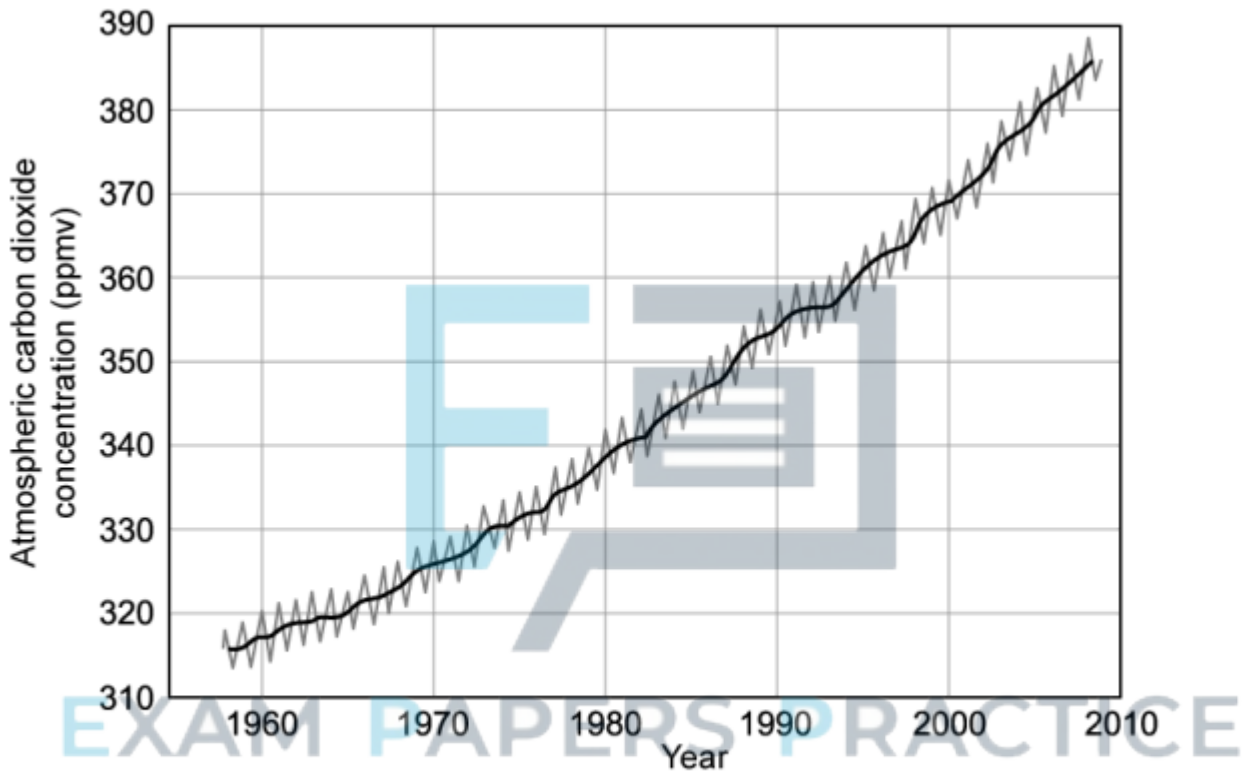
- A. I only
- B. I and II only
- C. I and III only
- D. I, II, and III

[1 mark]



Question 5.

What can be concluded about levels of atmospheric carbon dioxide from the graph shown?



Key: — = Average carbon dioxide concentration per year
— = Actual carbon dioxide concentration

A	Carbon dioxide levels fluctuate yearly due to seasonal changes in photosynthesis	Average carbon dioxide levels are increasing	Average yearly carbon dioxide level increases vary from year to year
B	Carbon dioxide levels fluctuate yearly	Average carbon dioxide levels increased between 1960–2010	Average yearly carbon dioxide level increases vary from year to year
C	Carbon dioxide levels fluctuate yearly	Average carbon dioxide levels are increasing	Average yearly carbon dioxide level increases vary from year to year



D	Carbon dioxide levels fluctuate yearly due to seasonal changes in photosynthesis	Average carbon dioxide levels increased between 1960–2010	Average yearly carbon dioxide level increases are linear
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[1 mark]

Question 6.

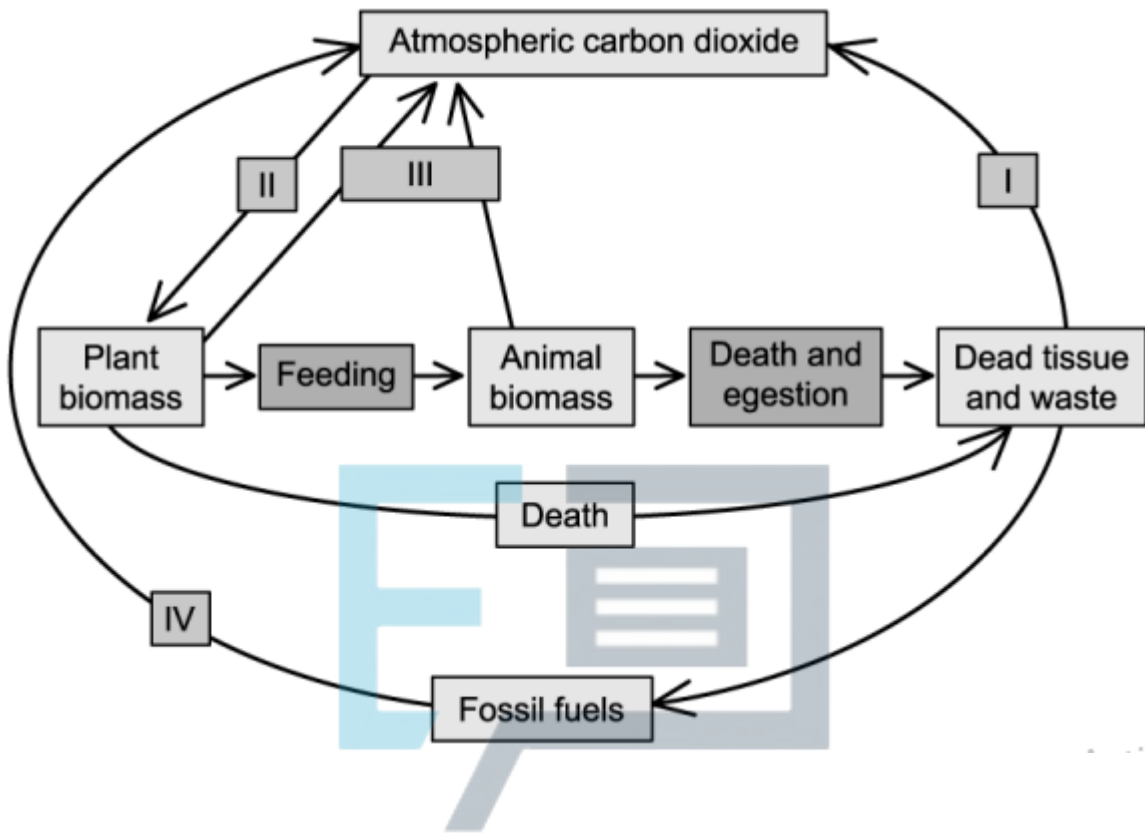
What is the benefit of collecting accurate, quantitative data on atmospheric carbon dioxide levels?

- A. Scientists can identify the sources of greenhouse gases such as methane.
- B. Scientists can directly assess the impact of deforestation.
- C. Scientists can prove that climate change is caused by human activities.
- D. Scientists can identify trends in atmospheric carbon dioxide levels.

[1 mark]

Question 7.

The diagram below shows the stages of the carbon cycle.



Which processes are shown in the diagram?

	I	II	III	IV
A	Fossilisation	Photosynthesis	Respiration	Decomposition
B	Decomposition	Absorption	Photosynthesis	Combustion
C	Decomposition	Absorption	Photosynthesis	Decomposition
D	Decomposition	Photosynthesis	Respiration	Combustion

[1 mark]