



الإدارة المركزية للتعليم العام

مستشار مادة العلوم

Weekly Home Work

First Week

Integrated Science

Secondary one

Second Term 2026

مراجعة

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رئيس الإدارة المركزية للتعليم العام

والمشرف على مستشاري

المواد الدراسية

إعداد

أ / سحر ناصف موجه عام الإسكندرية

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مستشار مادة العلوم



Lesson 1: The Biosphere and its Stability (Part One)

Choose the correct answer

- 1- Which of the following processes illustrates the role of the biosphere in influencing the components of the atmosphere?
 - A) Plants absorb carbon dioxide to produce food
 - B) Rocks crumble due to the growth of large tree roots
 - C) Evaporation of sea and ocean water by solar heat
 - D) Groundwater flow between porous soil layers

- 2- The accumulation of dead organisms' remains over millions of years leads to the formation of fossil fuels (such as coal and oil) within the Earth's crust. This proves that
 - A) The biosphere controls the formation of minerals
 - B) The biosphere contributes to the formation of lithosphere resources
 - C) The lithosphere is solely responsible for the decomposition of organisms
 - D) The lithosphere is not affected by living organisms

- 3- A farmer noticed that his crop grows better in soil rich in earthworms compared to soil without them. Which of the following statements applies the concept of interaction between the biosphere and lithosphere to explain this?
 - A) Worms absorb sunlight and transfer it to plant roots
 - B) Worms release nitrogen gas directly into the atmosphere
 - C) Worms aerate the soil and decompose organic matter within it
 - D) Rocky soil prevents worms from moving, which protects the plant

- 4- Scientists search for ancient carbon traces in certain layers of sedimentary rocks to estimate the age of forests that existed in that area. This scientific activity relies on the fact that?
 - A) The lithosphere takes carbon from the atmosphere
 - B) The hydrosphere converts living organisms into rocks
 - C) The biosphere is what creates sedimentary rocks
 - D) Remains of the biosphere are preserved and become part of the lithosphere



- 5- A factory disposed of its chemical waste into a river. After a while, scientists noticed the death of all algae in this river, which caused an increase in the percentage of carbon dioxide gas in the air surrounding the area. How do you evaluate this situation in terms of (spheres interaction)?
- A) The imbalance started in the atmosphere then moved to the hydrosphere and lithosphere
B) Pollution in the hydrosphere disrupted the biosphere's function in purifying the atmosphere
C) The hydrosphere was affected by waste, but the atmosphere's connection is merely a climatic coincidence
D) The hydrosphere was affected by waste, but the atmosphere's connection is merely a climatic coincidence
- 6- Which of the following organisms represents the "link" that returns matter from the final consumer back to the producer
- A) Algae
B) Hawk
C) Fungi
D) Rabbit
- 7- Which of the following processes represents an interaction that links the biosphere, atmosphere, and lithosphere all at once?
- A) Animals breathing oxygen
B) Plants absorbing water, salts, and CO_2 to produce food
C) Water evaporation from the ocean surface
D) Volcanic eruptions on the ocean floor
- 8- Energy exchange in the biosphere occurs primarily through
- A) Igneous rocks
B) Wind movement only
C) Food chains and webs
D) Freezing of water at the poles
- 9- A herd of antelope living in the African savanna at a specific time represents the level of a
- A) Individual organism
B) Biome
C) Lithosphere
D) Biological population

Essay Questions

1- Trace the impact of groundwater pollution with toxic chemicals on the food chain

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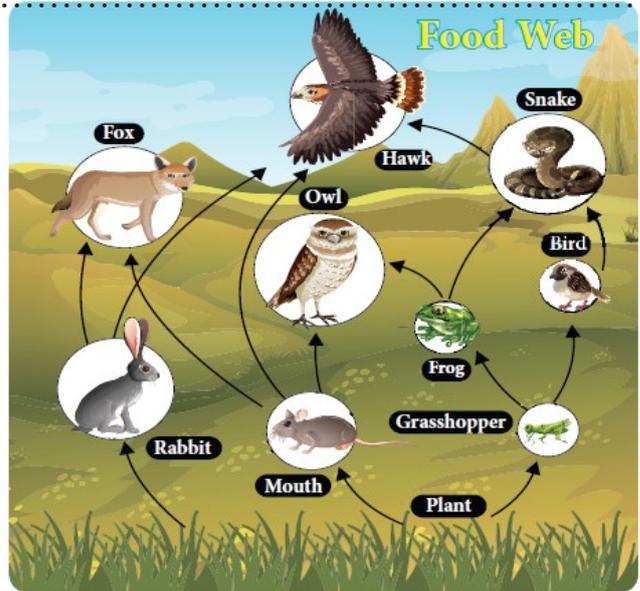
2- The following figure represents a food web. Assuming the plant produced energy equal to 300,000 J.

A)) According to the diagram, what is the minimum energy the hawk might receive from the plant?

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B) Explain the food chain that leads to the hawk receiving the minimum amount of energy from the plant.

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3- Explain how a "food web" reflects the stability or disturbance of a biological community?

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4- Clarify the importance of "chlorophyll" in the continuity of the biosphere?

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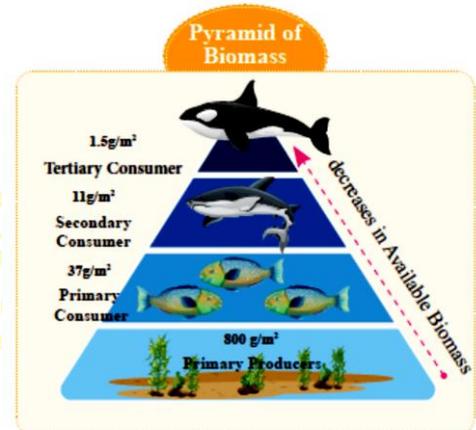
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Lesson 1: The Biosphere and its Stability
(Part One)

Model (B)

Choose the correct answer:

- 1- When individuals of the same species share the same place and time and interact for food, they form a
- A) Integrated ecosystem B) Biological population
C) Hydrosphere D) Biological community
- 2- Plants are classified as "autotrophic" because they have the ability to.....
- A) consume organic matter from the soil
B) convert inorganic matter into energy-storing organic compounds
C) absorb oxygen to produce glucose
D) survive without water
- 3- In opposite figure: What is the ratio of the mass available to primary consumers consider to producers?
- A) 0.187 %
B) 1.37 %
C) 4.62 %
D) 10 %
- 4- "Tough fibers" in food are classified as energy
- A) lost as heat
B) used in movement
C) resulting from respiration
D) stored in waste



Essay :

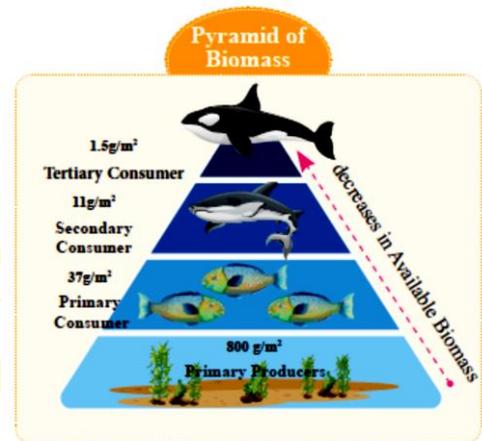
- 5- Give reasons: The numbers of large predators (such as lions) are very few consider to the numbers of preys in the ecosystem?

Lesson 1: The Biosphere and its Stability
(Part One)

Model (C)

Choose the correct answer:

- 1- The biosphere is considered an "integrated system" because
- A) Every organism in it lives in isolation from the others
 - B) It is the largest sphere in terms of geological size
 - C) The survival of organisms depends on complex interactions
 - D) It contains only rocks
- 2- A forest containing trees, insects, and birds represents a level of...
- A) Biological population
 - B) Biological community
 - C) Individual
 - D) Biome
- 3- In opposite figure: What is the ratio of the mass available to tertiary consumers consider to producers?
- A) 0.187 %
 - B) 1.37 %
 - C) 4.62 %
 - D) 10 %
- 4- Which of the following organisms can perform photosynthesis ?
- A) Fungi
 - B) Primary consumers
 - C) Herbivores
 - D) Some specialized bacteria



Essay :

- 5- Explain: Why is a complex food web "more flexible" against changes ?