

AP Environmental Science: Unit – 1 - The Living World: Ecosystems

Question 1

What is the correct equation for respiration?

- A. $\text{CO}_2 + \text{H}_2\text{O} + \text{Energy} = \text{C}_6\text{H}_{12}\text{O}_6 + \text{O}_2$
- B. $\text{O}_2 + \text{C}_6\text{H}_{12}\text{O}_6 = \text{Energy} + \text{Water} + \text{CO}_2$
- C. $\text{CO}_2 + \text{C}_6\text{H}_{12}\text{O}_6 = \text{Energy} + \text{Water} + \text{O}_2$
- D. $\text{O}_2 + \text{H}_2\text{O} + \text{Energy} = \text{CO}_2 + \text{C}_6\text{H}_{12}\text{O}_6$

Question 2

In which cycle is limestone a key factor?

- A. Carbon
- B. Phosphorus
- C. Nitrogen
- D. Sulfur

Question 3

What process can be caused by lightning?

- A. Nitrification
- B. Denitrification
- C. Nitrogen Fixation
- D. Precipitation

Question 4

Why does the phosphorus cycle not recycle from the oceans back to land as fast as the other cycles?

- A. Phosphorus is not in fossil fuels so we don't extract it.
- B. There is no atmospheric component
- C. It is not washed off in runoff.
- D. The bonds of atmospheric phosphorus are too strong.

Question 5

Denitrifying bacteria are found in:

- A. Anoxic environments like muddy soil.
- B. Oxic environments like muddy soil.
- C. Anoxic environments like a dry corn feild.
- D. Oxic environments like a dry cornfields.

Question 6

What is the main factor that allows the Coastal Pacific Northwest to have temperate seasonal forest and Temperate Rainforest rather than Taiga?

- A. The Latitude
- B. The Altitude
- C. Warm Ocean Currents
- D. Cold Ocean Currents

Question 7

What is the main factor that creates the rain shadow effect?

- A. Geology
- B. Ocean Currents
- C. Air Currents
- D. Topography

Question 8

You go to an area dominated by grasses with scattered trees. There are distinct Wet and Dry seasons. Based on the angle of the sunlight, you think you are near the equator. You are most likely in a:

- A. Savanna
- B. Tropical Rainforest
- C. Temperate Grassland
- D. Shrubland

Question 9

What nutrients are most likely to cause algae blooms?

- A. Nitrogen and Sulfur
- B. Sulfur and Carbon
- C. Nitrogen and Phosphorus
- D. Sulfur and Phosphorus

Question 10

What is the base of the food chain in large rivers?

- A. Phytoplankton and Algae
- B. Aquatic plants
- C. Decaying plant matter
- D. Fish

Question 11

Estuaries are known to be important nurseries for many species of marine fish and shellfish. Select all of the below that are estuaries.

- A. Freshwater Marsh
- B. Bogs
- C. Coral Reefs
- D. Mangrove Swamp
- E. Saltwater Marsh

Question 12

Hydrothermal vents are areas where what happens?

- A. Plants make energy using photosynthesis.
- B. Plants make chemosynthesis.
- C. Bacteria make energy using photosynthesis.
- D. Bacteria make energy using chemosynthesis.

Question 13

Why does the salinity go back up as you go deeper than 1000 m?

- A. Water with more salt is less dense
- B. Water with more salt is more dense
- C. Water is saltier at the surface where there is evaporation.
- D. Water is less salty at the surface where there is more evaporation.

Question 14

If GPP is 10 and respiration is 3, NPP is

- A. 13**
- B. 7**
- C. 10**
- D. 30**

Question 15

Energy is lost as you go up each trophic level. It is turned into

- A. CO₂**
- B. O₂**
- C. Heat**
- D. Minerals**

Question 16

Why does the phosphorus cycle not recycle from the oceans back to land as fast as the other cycles?

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Question 17

The 10% rule states that:

- A. 10% of energy is lost as you go up each trophic level.**
- B. Only about 10% of energy moves up the trophic level.**
- C. The maximum amount of energy at the top of a trophic pyramid is 10%**
- D. 10% of organisms die at each trophic level.**

Question 18

Food chains show

- A. As many relationships as it can between species in an ecosystem**

- B. One pathway energy or matter could take through an ecosystem
- C. Which predators eat which prey species in an ecosystem
- D. The amount of energy available at each trophic level

Question 19

Box turtles usually spend most of their lives living within a mile or two from where they were born. This area would be considered the individual box turtle's

- A. Niche
- B. Ecosystem
- C. Habitat
- D. Community

Answer Key

1. C
2. A

3. C
4. B
5. A
6. C
7. D
8. A
9. C
10. A
11. D, E
12. D
13. B
14. B
15. C
16. B
17. B
18. B
19. C