

This is NOT identical to the Unit 2 exam but will help you focus on the topics and the types of questions.

UNIT 2 PRACTICE EXAM

1. Elements cycle through the atmosphere in all of the following biogeochemical cycles EXCEPT?
 - a. Carbon
 - b. Phosphorus
 - c. Water
 - d. Oxygen
 - e. Nitrogen
2. In a pyramid of biomass, there is a _____ reduction of biomass for each successive trophic level.
 - a. 10%
 - b. 30%
 - c. 50%
 - d. 70%
 - e. 90%
3. Energy usually results in the release of which of the following?
 - a. Heat
 - b. Light
 - c. Work
 - d. Wastes
 - e. Water
4. A regular light bulb has an efficiency rating of 3%. For every 1.00 joule of energy that light bulb uses, the amount of useful energy produced is?
 - a. 1.03 joules of light
 - b. 1.03 joules of heat
 - c. 0.97 joules of light
 - d. 0.03 joules of light
 - e. 0.03 joules of heat.
5. All of the following are ways to increase energy efficiency EXCEPT
 - a. Using low volume shower spray heads
 - b. Insulating your home thoroughly
 - c. Switching incandescent light bulbs to fluorescent bulbs
 - d. Leaving room lights on
 - e. Increasing fuel efficiency of vehicles
6. A typical coal-burning power plant uses 4,500 tons of coal per day. Each pound of coal produces 5,000 BTUs of electrical energy. How many BTUs are produced each day from this plant?
 - a. 4.5×10^{10}
 - b. 0.45×10^{10}
 - c. 11.5×10^3
 - d. 4.5×10^8
 - e. 0.25×10^6
7. How much energy, in kWh, is used by a 100-watt computer running for 5 hours?
 - a. 500 kWh
 - b. 200 kWh
 - c. 100 kWh
 - d. 50 kWh
 - e. 0.5 kWh
8. All of the following statements are true EXCEPT
 - a. Energy can be converted from one form to another
 - b. Energy input always equals energy output
 - c. Energy and matter can generally be converted into each other
 - d. The laws of thermodynamics can be applied to living systems
 - e. At each step of an energy transformations, some energy is lost to heat
9. Oxygen-depleted zones of the oceans, such as the one at the mouth of the Mississippi River, are most likely caused by
 - a. Large numbers of fish that are using up all the oxygen in the water
 - b. A reduction in the plant life in rivers that empty into the ocean near the dead zone
 - c. Excessive fertilizer carried into the ocean, which cause algal blooms that lower oxygen levels
 - d. Thermal pollution in the ocean
 - e. Acid precipitation falling on the ocean
10. Which of the following describes the amount of energy that plants pass on to herbivores?
 - a. The amount of solar energy in a biome

- b. The First law of thermodynamics
 - c. The net primary productivity (NPP) of an area
 - d. The second law of thermodynamics
 - e. The number of steps in the food web
11. Which of the following phases of the hydrologic cycle requires the input of solar energy?
- a. Percolation
 - b. Bioremediation
 - c. Precipitation
 - d. Condensation
 - e. Evaporation
12. The distinct building blocks of matter are called
- a. Mixtures
 - b. Isotopes
 - c. Atoms
 - d. Electrons
 - e. Compounds
13. The form of nitrogen that plants can use directly is
- a. Nitrates
 - b. Nitrites
 - c. Guano
 - d. N₂ gas
 - e. Methane
14. Transpiration is best defined as
- a. Movement of water through aquifers
 - b. Movement of water through the roots, stems, and leaves of plants
 - c. Evaporation of water from an ocean
 - d. Condensation of water into rain
 - e. Heating of the atmosphere by the warmth of the earth
15. Which of the following ecosystems does NOT use solar energy as its ultimate energy source?
- a. Pond
 - b. Rain Forest
 - c. Tundra
 - d. Deep-sea hydrothermal vent
 - e. Coniferous forest
16. All of the following are true about CO₂ sequestration EXCEPT
- a. It can be accomplished by pumping CO₂ into carbonated beverages
 - b. It can be accomplished by pumping CO₂ into crop lands
 - c. It can be accomplished by pumping CO₂ deep into the ocean floor
 - d. It can be accomplished by pumping CO₂ deep underground in dried up oil wells
 - e. It can be accomplished by pumping CO₂ into immature forests
17. Which of the following describes the process in which glucose and oxygen are converted into carbon dioxide, water, and energy?
- a. Photosynthesis
 - b. Chemosynthesis
 - c. Cellular respiration
 - d. Decomposition
 - e. Eutrophication
18. The half life of boron is approximately 2 days. 2 weeks later, the amount of boron was measured. What would be the closest fraction of the original amount?
- a. 1/128
 - b. 1/8
 - c. 1/32
 - d. 1/64
 - e. 1/2
19. The net primary productivity of a particular rain forest ecosystem is found to be 7,000 kcal/m²/yr. If respiration by the producers is 15,000 kcal/m²/yr, what is the gross primary productivity for this ecosystem?
- a. 4,000 kcal/m²/yr
 - b. 55,000 kcal/m²/yr
 - c. 8,000 kcal/m²/yr
 - d. 15,000 kcal/m²/yr
 - e. 22,000 kcal/m²/yr