

# ***Ecology in Action 1st edition Singer Test Bank***

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## Chapter 02

1. Which of the following statements about the basic characteristics of biomes is accurate?
- a. Terrestrial biomes are most influenced by temperature and the chemical composition of the water.
  - b. The boundaries of biomes are constantly changing.
  - c. Most organisms migrate too often to be considered part of any one biome.
  - d. All of Earth's biomes have been identified and roughly mapped by ecologists.

Answer: b

2. If an ecologist is measuring the primary production of an ecosystem, what is being measured?
- a. the number of autotrophs
  - b. species richness
  - c. biomass
  - d. chemical energy

Answer: d

3. A recent study (Azevedo) suggested which biomes would lose biodiversity at the greatest rate from acid deposition?
- a. tundras
  - b. tropical regions
  - c. temperate forests
  - d. coral reefs

Answer: b

4. Which of the following statements about atmospheric composition and pressure is accurate?
- a. Warmer air results in higher-pressure systems.
  - b. High-pressure systems form the most rain.
  - c. There are more gas particles near to the Earth's surface than higher up.
  - d. Water condensation cannot form in the troposphere.

Answer: c

5. Which of the following happens in the Intertropical Convergence Zone?
- a. Warm, moist air rises and moves north and south from the equator.
  - b. Dry, cool air descends, becomes warm, and helps produce major deserts.
  - c. Moist, cool air rises and drifts northward from the equator.
  - d. Cool, dry air from the poles meets at the equator and descends, warming as it goes.

Answer: a

6. What does Li-Hung Lin's discovery of a subterranean biome suggest about biome classification?
- a. The remaining biomes to be identified are likely terrestrial and beneath the Earth's surface.
  - b. Access, not subjectivity, makes classification of all biomes difficult.
  - c. We likely cannot know the number of biomes on the planet.
  - d. Ecologists can agree on strict boundaries for identified biomes.

Answer: c

7. Which of the following is a characteristic of tundras?
- a. a thick canopy provided by dense hardwood trees
  - b. a nutrient-dense upper soil layer
  - c. low species diversity
  - d. cold winters and warm summers

Answer: c

8. Which of the following is a characteristic of the taiga (boreal forest) biome?
- a. mild winters and hot summers
  - b. nutrient-rich soils
  - c. hard permafrost
  - d. relatively low plant diversity

Answer: d

9. Plants in temperate shrublands tend to be very well adapted to surviving
- a. extreme cold.
  - b. human encroachment and development.
  - c. floods.
  - d. fires.

Answer: d

10. If a paleontologist wanted to study the history of species diversity in a region, she would likely first
- a. take a sediment core sample from a local lake.
  - b. look at fossilized remains in the upper soil layers throughout the region.
  - c. study the DNA of contemporary available plants and animals.
  - d. study river patterns throughout the region.

Answer: a

11. Which of the following statements about the temperature properties of water biomes is accurate?
- a. It takes much less solar energy to heat water than it does an equivalent piece of land.
  - b. Thermal stratification helps keep different layers of bodies of water at roughly the same temperature.
  - c. Oceans and lakes have a wider temperature range than equivalent terrestrial landmasses.

d. Water density decreases below 4 degrees Celsius.

Answer: d

12. The frozen form of water, particularly in Greenland and on the continent of Antarctica,

- a. has the shortest average turnover time of the water reservoirs of Earth.
- b. is the second largest water reservoir on Earth.
- c. is not part of the hydrological cycle.
- d. primarily enters the atmosphere through transpiration.

Answer: b

13. An oligotrophic lake is likely to

- a. have a high nutrient density.
- b. have relatively low levels of plankton.
- c. have a high species diversity.
- d. be shallow and in a warmer environment.

Answer: b

14. Which of the following is a characteristic or component of the open ocean biome?

- a. a relative lack of productivity above the ocean floor
- b. the species-rich continental shelf
- c. a nutrient-poor benthic zone
- d. high species diversity in deeper waters

Answer: a

15. Why are warming oceans resulting in more coral bleaching?

- a. Warming temperatures eliminate nitrogen from the water, and coral reefs are very nitrogen-rich.
- b. Higher temperatures cause invasive plankton to move into coral-rich areas.
- c. Warmer temperatures reduce coral's typically high nutrient levels.
- d. Higher temperatures cause corals to reject their zooxanthellae.

Answer: d

16. Which of the following is a characteristic of estuaries?

- a. low levels of toxic pollutants
- b. high species richness
- c. highly fluctuating salinity
- d. near-total lack of nitrogen availability

Answer: c

17. Anthropogenic biomes are

- a. biomes whose character has been untouched by human development.
- b. biomes whose character has been determined by human development.
- c. biomes with such low species richness that they are considered essentially barren.
- d. biomes in which organic life is not supported.

Answer: b

18. Among most deserts, what is unique about the Atacama Desert in western Chile?

- a. It is very rich with microhabitats.
- b. It has a nutrient-rich soil.
- c. It has an extremely high biodiversity.
- d. It receives almost no rainfall.

Answer: d

19. Lianas are common to what biome?

- a. tropical rainforest
- b. tundra
- c. coral reefs
- d. temperate grasslands

Answer: a

20. What causes gyre deflection to the right in the oceans of the northern hemisphere?

- a. the Coriolis effect
- b. the Hadley cell
- c. polar cells
- d. convection zones

Answer: a