

Directions: Use your textbook to help you answer the practice questions for each chapter. It is important that you READ the chapter sections and not just search for the answer in order to make sure you understand the material. Similarly, it is important that you really think about your answer and write a complete answer; don't just write the minimum that you think you can get away with or you will not learn the material well enough for the final exam.

Ecology: Chapter 3

WORD BANK

Producers	Respiration	Population	Nitrogen Fixation
Consumers	Ecosystem	Community	Denitrification
Detrivore	Biosphere	Transpiration	Limiting Nutrient
Herbivore	Biome	Precipitation	
Carnivore	Ecology	Condensation	
Photosynthesis	Species	Nutrients	

1. All of the chemical substances an organism needs to sustain its life (to build tissues and carry out essential life functions): _____
2. A nutrient that is scarce or cycles very slowly through an ecosystem: _____
3. Group of individuals that are genetically similar enough to breed with one another. _____
4. The portion of the planet (atmosphere, lithosphere, and hydrosphere) that contains all life. _____
5. The study if interactions between organisms, and between them and their environment. _____
6. When water returns to the surface of the earth as ice, snow, or rain: _____
7. Group of organisms that all belong to the same species and live in the same area. _____
8. The collection of living organisms (biotic) and nonliving physical environment (abiotic) that makes up a particular area, and their interactions with one another. _____
9. Refers to the collective group of all populations that live together in the same area. _____
10. Also known as autotrophs, these organisms obtain energy from inorganic sources like sunlight and chemicals from the environment. _____
11. When water evaporates out of plants: _____
12. The process in which atmospheric nitrogen in the air is converted into ammonia _____
13. Also known as heterotrophs, these organisms obtain energy by eating other organisms. _____
14. The process in which soil bacteria convert nitrates into nitrogen gas. _____
15. Group of ecosystems that all share a similar climate and similar dominant communities. _____
16. These organisms obtain their energy by eating producers. _____
17. These organisms obtain their energy by eating other *animals*. _____
18. A type of decomposer, these organisms feed on the organic remains of dead organisms. _____
19. When water does this in the atmosphere, clouds form: _____
20. Process in which organisms convert the energy from sun into organic energy stored in glucose _____
21. Process in which organisms use oxygen to metabolize sugars and release energy stored in them _____

Ecology: Chapter 4

1. What are the two main factors of climate? 1) _____ 2) _____
2. How is weather different from climate?
3. What main factors determine a region's climate?
4. Name three greenhouse gases that trap heat in earth's atmosphere:
1) _____ 2) _____ 3) _____
5. Why do polar zones tend to be colder than all other zones throughout the year?
6. Why do temperate zones experience seasonal changes?
7. Why do tropical zones tend to be consistently hot throughout the year?
8. For each of the following, identify whether it is a biotic or an abiotic factor:
a. Wind: _____ d. Detritus: _____ g. Producers: _____
b. Sand: _____ e. Precipitation: _____ h. Consumers: _____
c. Algae: _____ f. Temperature: _____ i. Bacteria: _____
9. Why is it not possible for two species to share the same niche?
10. What are the three types of symbiosis? Define each and then for each one, describe the book's example and then make up your own example.
1) _____ - Definition: _____
Book's Example: _____
My Example: _____
2) _____ - Definition: _____
Book's Example: _____
My Example: _____
3) _____ - Definition: _____
Book's Example: _____
My Example: _____
11. What is the main difference between primary succession and secondary succession?

Ecology: Chapter 5

1. How is the density of a population calculated?
2. How does the population density of plants in a desert compare to that of a rainforest?
3. How does immigration affect a population's size?
4. How does emigration affect a population's size?
5. Draw a graph showing exponential growth in Box A below and logistic growth in Box B below:

Box A: Exponential Growth

Box B: Logistic Growth

6. Under what conditions does a population experience exponential growth?
7. What prevents populations from growing exponentially and causes them to grow logistically instead?
8. What is the carrying capacity of a population?
9. Name the five limiting factors that affect populations and describe how each increases the death rate in a population:
 - 1)
 - 2)
 - 3)
 - 4)
 - 5)
10. Which of those above are density-dependent limiting factors?
11. Prior to the modern age, what were some of the limiting factors that kept the human population growth rate low?
12. What main factors have enabled the human population to grow so rapidly during the modern era?

Ecology: Chapter 6

1. What is a renewable resource? Give some examples of renewable resources.
2. What is a nonrenewable resource? Give some examples of nonrenewable resources.
3. What is sustainable development? Give an example.
4. How does soil erosion help contribute to desertification?
5. What types of activities cause deforestation?
6. What is smog? How does it contribute to acid rain?
7. Describe three things we can do to help protect our supply of fresh water:
 - 1)
 - 2)
 - 3)
8. Describe at least three reasons why it is important to protect biodiversity:
 - 1)
 - 2)
 - 3)
9. How do habitat destruction and habitat fragmentation contribute to extinctions?
10. Describe how biological magnification led to a decline in the bald eagle population:
11. How can invasive species cause native species to go extinct?
12. What is conservation? Why is it important?
13. Why is the ozone layer important and how did actions starting in the 1970's help to save the earth's ozone layer?
14. What is global warming? Describe at least three ways global warming is predicted to affect the planet in the future: