Biology Unit 3 Ecology Review – 2% Extra Credit on Test! Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**You must correct your answers with the teacher edition before turning this in!!**

**Chapter 3 Assessment, page 90:**

**3.1 What is Ecology?**

1. All life on Earth exists in:
   1. An ecosystem c. the biosphere
   2. A biome d. ecology
2. Which term describes a group of different species that live together in a defined area?
   1. A population c. an ecosystem
   2. A community d. a biosphere
3. Give an example of how a biotic factor might influence the organisms in an ecosystem.

**3.2 Energy, Producers, and Consumers**

1. Primary producers are organisms that
   1. rely on other organisms for their energy and food supply
   2. Consume plant and animal remains and other dead matter
   3. Use energy they take in from the environment to convert inorganic molecules into complex organic molecules
   4. Obtain energy by eating only plants.
2. Which of the following organisms is a decomposer?
   1. A fox c. bacteria
   2. A plant d. a bird
3. Which of the following describes how ALL consumers get their energy?
   1. Directly from the sun c. from inorganic chemicals
   2. from eating primary producers d. from eating other organisms

**3.3 Energy flow in Ecosystems**

1. The series of steps in which a large fish eats a small fish that has eaten algae is a:
   1. Food web c. pyramid of numbers
   2. Food chain d. pyramid of biomass
2. The total amount of living tissue at each trophic level in an ecosystem can be shown in a(n):
   1. Energy pyramid c. biomass pyramid
   2. Pyramid of numbers d. biogeochemical cycle
3. Which group of organisms is always found at the base of a food chain or food web?
4. Why is the transfer of energy in a food chain usually only about 10% efficient?

**3.4 Cycles of Matter**

20. Nutrients move through an ecosystem in:

a. biogeochemical cycles c. energy pyramids

b. water cycles d. ecological pyramids

21. Which biogeochemical cycle does NOT include a major path in which the substance cycles through the atmosphere?

a. water cycle c. nitrogen cycle

b. carbon cycle d. phosphorus cycle

22. List two ways in which water enters the atmosphere in the water cycle.

23. Explain the process of nitrogen fixation.

24. What is meant by “nutrient limitation”?

**Chapter 4 Assessment, page 124**

**4.1 Climate**

1. An increase in the greenhouse effect causes an increase in:

a. carbon dioxide c. oxygen

b. temperature d. water

3. Distinguish between weather and climate.

**4.4 Biomes**

22. What is a biome?

**4.5 Aquatic Ecosystems**

28. What is the meaning of the term plankton? Name the two types of plankton.

**Chapter 5 Assessment, page 148**

**5.1 How Populations Grow**

1. The number of individuals of a single species per unit area is known as:

a. carrying capacity b. logistic growth

c. population density d. population growth rate

1. The area inhabited by a population is known as its:
   1. Growth rate c. age structure
   2. Geographic range d. population density

5. The maximum number of organisms of a particular species that can be supported by an environment is called:

a. logistic growth c. exponential growth

b. carrying capacity d. population density

7. Sketch the exponential growth curve of a hypothetical population.

8. Describe the conditions under which logistic growth occurs.

9. What is carrying capacity? Give an example.

**5.2 Limits to Growth**

11. A limiting factor that depends on population size is called a:

a. density-dependent limiting factor

b. density-independent limiting factor

c. predator-prey relationship

d. parasitic relationship

12. One example of a density-independent limiting factor is:

a. predation c. competition

b. hurricanes d. parasitism

13. How might increasing the amount of a limiting nutrient in a pond affect the carrying capacity of the pond?

15. Describe how a predator-prey relationship can control both the predator population and the prey population.