Class___

Chapter 3 The Biosphere

Multiple Choice

Write the letter that best answers the question or completes the statement on the line provided.

1.	The branch of biology dealing with interactions among organisms and between organisms and their environment is called		
	a. economy.	c. recycling.	
	b. modeling.	d. ecology.	
2.	What is the combined portions of Earth called in which all living things exist?		
	a. biome	c. ecosystem	
	b. community	d. biosphere	
3.	All of the members of a p area are called a(an)	particular species that live in the same	
	a. biome.	c. community.	
	b. population.	d. ecosystem.	
4.	Which of the following is ecologists to study the live	NOT a basic method used by ring world?	
	a. experimenting	c. modeling	
	b. classifying	d. observing	
5.	Green plants are		
	a. producers.	c. herbivores.	
	b. consumers.	d. omnivores.	
6.	6. What is the original source of almost all the energy in most ecosystems?		
	a. carbohydrates	c. water	
	b. sunlight	d. carbon	
7.	An organism that cannot	make its own food is called a(an)	
	a. heterotroph.	c. autotroph.	
	b. chemotroph.	d. producer.	
8.	8. Organisms that obtain nutrients by breaking down dead a decaying plants and animals are called		
	a. decomposers.	c. autotrophs.	
	b. omnivores.	d. producers.	
9.	What is an organism that	feeds only on plants called?	
	a. carnivore	c. omnivore	
	b. herbivore	d. detritivore	
10.	All the interconnected fee make up a food	eding relationships in an ecosystem	
	a. interaction.	c. network.	
	b. chain.	d. web.	

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11. Which type of p each trophic lev	. Which type of pyramid shows the amount of living tissue at each trophic level in an ecosystem?				
a. a numbers py	ramid c. a biomass pyramid				
b. an energy py	ramid d. a food pyramid				
12. The repeated m the atmosphere	12. The repeated movement of water between Earth's surface and the atmosphere is called				
a. the water cyc	a. the water cycle.				
b. the condensa	b. the condensation cycle.				
c. precipitation.	c. precipitation.				
d. evaporation.					
13. Nitrogen fixatio	13. Nitrogen fixation is carried out primarily by				
a. humans.	c. bacteria.				
b. plants.	d. consumers.				
14. Organisms need nutrients in order to					
a. utilize hydrog	a. utilize hydrogen and oxygen.b. carry out essential life functions.c. recycle chemical compounds.				
b. carry out esse					
c. recycle chemi					
d. carry out nitrogen fixation.					
15. The rate at whice ecosystem is cal	h organic matter is created by pr led	oducers in an			
a. a limiting nut	rient. c. an algal bloom.				
b. fertilization.	d. primary productivit	y.			

Completion

Complete each statement on the line provided.

- **16.** A group of ecosystems that have the same climate and dominant communities is called a(an) ______.
- **17.** Scientists classify the nitrogen, carbon, and water cycles as ______ cycles.
- **18.** Plant-eating animals such as cows are called _______.
- **19.** Only about 10 percent of the ______ in a trophic level is available to organisms at the next level.
- 20. The chemical substances that an organism requires to live are called

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Short Answer

In complete sentences, write the answers to the questions on the lines provided.

21. What is the biosphere? Where is it located?



Figure 3-2

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25. What events typically contribute to an algal bloom in a lake or an ocean?

Using Science Skills

Use the diagram to answer the following questions on the lines provided.

- **26. Applying Concepts** How do ecologists use diagrams such as Figure 3-3 to study ecological relationships?
- **27. Inferring** Figure 3-3 shows a food web arranged into trophic levels. How many energy-transferring steps away from the sun is the wolf? How do you know?
- **28. Inferring** A food web, such as the one in Figure 3-3, is a model of the feeding relationships in an ecosystem. What makes this model representative of an ecosystem?
- **29. Interpreting Graphics** In Figure 3-3, how many first-level consumers are there for each producer?



30. Comparing and Contrasting In Figure 3-3, compare the amount of energy available to the wolf if it eats a rabbit with the amount of energy available to the wolf if it eats a shrew.