

Environment and Ecology

Study Guide for Chapter 5

Study Tools:

- PowerPoint Notes
- Textbook
- Review Packet
- Vocab

M/C Topics:

- Understand the concept and significance of an organisms niche.
- Be capable of differentiating between a realized niche and a fundamental niche.
- Have a firm understanding of coevolution and convergent evolution. Be able to distinguish between the two and give an example of either.
- Understand what role limiting factors play on population growth.
- Recognize the distinction between density dependent limiting factors and density independent limiting factors. Be able to give examples. Also be able to associate the appropriate population growth curve to each.

Matching Terms:

niche
convergent evolution
density-dependent limiting factors
competitive exclusion
coevolution

keystone predator
exponential growth
density-independent limiting factors
evolution
carrying capacity

Short Answer Topics:

- Scientific Method

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Name: _____ Class: _____ Date: _____

Chapter 5

Section Review 5.1

Complete the following.

1. What is a species' niche?
2. What factors help to define a niche? Give examples of each.
3. **a.** What prevents two different species from sharing the same niche?
b. What is the phenomenon described in 3.a. called?
4. Explain the difference between an organism's *fundamental* niche and its *realized* niche.
5. What is the role of predators in determining niche diversity?
6. Identify abiotic factors that contribute to niche diversity.

Section Review 5.2

1. What is evolution?
2. What is a specialized species? Give one example.
3. What is a generalized species?
4. Why are generalized species considered more adaptable to changes in the environment?
5. Provide an example of convergent evolution.
6. What is coevolution?
7. Provide an example of coevolution.

Section Review 5.3

Complete the following.

1. What prevents populations from continuously growing exponentially?
2. Define carrying capacity.
3. What happens to a population when it reaches carrying capacity?
4. Describe a population represented by an S-shaped growth curve.
5. Identify six factors that limit the growth of a population. Classify them into two categories.

Density-dependent factors

- a.
- b.
- c.
- d.
- e.
- f.

Density-independent factors

6. Give an example of a population that exhibits an S-shaped growth curve.

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7. Give an example of a population that exhibits a boom-and-bust growth curve.
8. Why is the human population growing exponentially?

Vocabulary Review

Match the correct vocabulary term to each of the numbered statements.

- A. niche
- B. convergent evolution
- C. density-dependent limiting factors
- D. competitive exclusion
- E. coevolution
- F. keystone predator
- G. exponential growth
- H. density-independent limiting factors
- I. evolution
- J. carrying capacity

1. ____ Regardless of population size, ____ curb population growth.
2. ____ Different species that have adapted similarly in similar niches are examples of ____.
3. ____ When a population reaches its ____, population size levels off.
4. ____ The extinction of a population that failed to compete successfully for a limited food source is called ____.
5. ____ The role of an organism in its ecosystem is called its ____.
6. ____ The increase in an organism's population when conditions and resources are not limiting follows a pattern of ____.
7. ____ Two species that interact closely with each other change in ways that are to their mutual benefit through the process of ____.
8. ____ A(n) ____ is an organism that maintains high biodiversity in its habitat by limiting the populations of its prey.
9. ____ The process of change in a population of organisms over time is called ____.
10. ____ The larger a population becomes, the more its rate of growth is affected by ____.