Unit 3 Study Guide

Ecology

1. Name and define the five levels of organization of life we discussed in class?
2. Define habitat.
3. What factors define a habitat?
4. Define critical factor.
5. Be able to label and answer questions about a tolerance graph.
   * Optimal Range
   * Zone of Physiological Stress
   * Zone of Intolerance
6. What is the difference between a community and an ecosystem?
7. Define species.

How populations change: Evolution

1. Define gene.
2. Define trait.
3. Define inherited trait.
4. Define evolution.
5. Define natural selection.
6. Define artificial selection.
7. What is the difference between natural selection and artificial selection?
8. Make sure you can identify examples of artificial selection or natural selection.
9. List and define the three types of adaptations.
10. What must be present before an adaptation can develop in a population?
11. How is sickle cell anemia an example of natural selection in the human race?
12. What is coevolution?
13. Explain why we would believe that the Acacia Ants and the Acacia Tree are an example of coevolution?

Community Interactions

1. Name and define the six community interactions we discussed in class?
2. Be able to identify examples of each of the community interactions we discussed in class.
3. Know the difference between interspecific competition and intraspecific competition.

Population Growth Patterns

1. Define population density. Give an example.
2. Provide three examples of density-dependent factors and explain why you consider each a density-dependent factor.
3. Provide three examples of density-independent factors and explain why you consider each a density-independent factor.
4. What is carrying capacity?
5. Draw an example of a logistical population growth graph? When looking at this graph, how do you know when a population reaches its carrying capacity?
6. Define exponential population growth.
7. Be able to identify overshoot and dieback on a graph.
8. Draw an example of an exponential growth graph.

Energy Flow in Ecosystems

1. Where does the energy in most ecosystems come from?
2. Name an exception to this rule.
3. What is another name for producers?
4. What is another name for consumers?
5. Name and define the four types of consumers we discussed in class.
6. What do the arrows in a food chain or food web represent?
7. Know the four trophic levels we discussed in class and what type of organisms you would expect to find at each level.
8. Be able to interpret a food chain, food web, and energy pyramid.
   * Identify the trophic levels, the percent energy from the sun at each level, the types of consumers at each level, and how much energy is passed from one trophic level to the next
9. What happens to the energy that is not passed to the next trophic level?