Study Guide- Ecology

Please use this study guide as you prepare for the test, it will be very helpful to you. As always, save the study guides to prepare for the final exam. Please see me during class if you need additional help and would like to schedule time to get help. *Italicized questions do not require a written response*. Use your notes and your textbook, to help you.

1. *Know all 6 levels of ecological organization – knowing them in order will help you because they get more inclusive when going from species to biosphere. Be able to give examples of each.*
Correctly describe a….

a) Species

b) Population

c) Community

d) Ecosystem

e) Biome

f) Biosphere

2. a) When looking at an energy pyramid- What is the direction of energy flow?

b) How much energy transfers from one "step" to another?

c) Where are the producers, herbivores, primary consumers, secondary consumers, etc.

d) What is the difference between a pyramid of biomass and a pyramid of numbers?

3. a) What is a limiting factor in population biology?

b)What is a density dependent limiting factor?

c) Coupling this with population density: Which populations are more likely (or less likely) to be affected by density dependent limiting factors?

Be able to give examples and when presented with a listing, know which factors are density dependent limiting factors.

4. What is a density independent limiting factor?

Be able to give examples and when presented with a listing, know which factors are density independent limiting factors.

5. How do ecologists describe population distribution?

Be able to provide real world examples of each, or know what type of distribution when presented to you.

6. a) What does an exponential growth curve look like?

   b) In this growth model- is there positive or negative population growth?

   c) In this growth model, is carrying capacity reached?

7. a. What is logistic growth?

   b. In this growth model, what does the rate of growth look like when birthrate is equal to deathrate.

   c. In this growth model, what does the rate of growth look like when deathrate exceeds birthrate? (how about when birthrate exceeds deathrate)?

   d. Is carrying capacity reached?

   e. What happens to the rate of growth after carrying capacity is attained?

   f. What does it look like when the rate of growth is positive, negative and at zero?

8. Know the 4 main types of symbiotic relationships:
   a) predator/prey
   b) commensalism
   c) parasitism
   d) mutualism

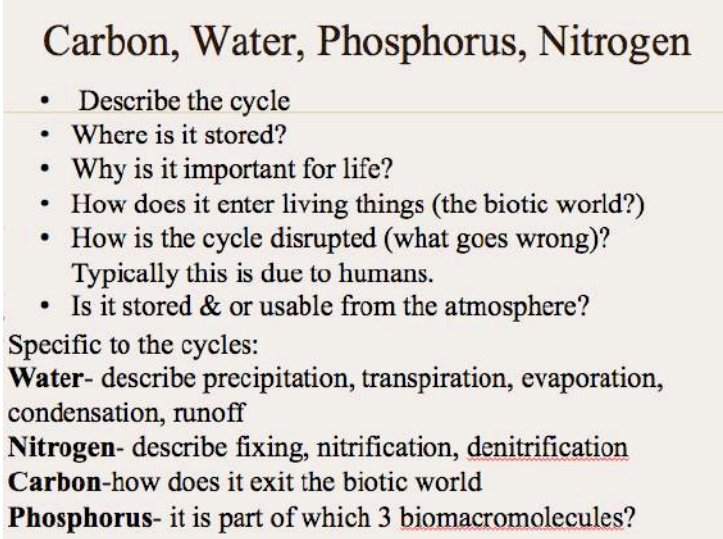
When presented with a scenario, know them well enough to know what type of relationship exists.

9. What is an abiotic factor?

10. What is a biotic factor?

11. Know the 4 main biogeochemical cycles and their order as discussed in class and in the textbook- see major points below that should be understood.

a) Carbon Cycle – know the ties to photosynthesis and cell respiration
b) Water Cycle- know how to describe the major terms; driven by the sun
c) Nitrogen Cycle – tied to bacteria, N is in amino acids and DNA
d) Phosphorus Cycle- remember Phosphorus is not in carbs, proteins, fats, but IS in nucleic acids such as DNA and also in ATP



Know what would happen if the cycle were disrupted as discussed in class. You may get a short answer question plus will get multiple choice questions on the cycles.

12. Be able to interpret a food chain and or a food web. The arrow points to the organism that is losing / gaining energy.

13. If an organism is removed from a food web (or chain) what is the result to other organisms in its community?

14. What shows interconnected relationships between organisms?
(a food chain or food web?)

15. a. What is a niche?

b. Can 2 different species occupy the same niche? _____ Why not?

16. a. What is a habitat?

b. Can two different species share the same habitat?