

## INSTRUCTIONAL OBJECTIVES

BSC 1050

### Part I

1. List some ways that living organisms differ from non-living things.
2. Define ecology.
3. Explain the difference between the living and the physical environment and give an example of each.
4. Define: autotroph, heterotroph, biosphere, ecosystem.
5. Give an example and identify the trophic levels of a food chain and show how it relates to the pyramid of numbers.
6. Tell how a food web differs from a food chain.
7. Describe the roles played by: carnivores, herbivores, omnivores, decomposers, and scavengers.
8. Explain the difference between the growth habits of lichens, spanish moss, and mistletoe.
9. Explain how biomass relates to the pyramid of numbers.
10. Define niche and explain why several species cannot occupy the same niche.
11. Explain how a niche differs from a habitat.
12. Define: biotic potential, carrying capacity, environmental resistance, and limiting factors.
13. Describe the following ecosystems in Florida and tell why they are important: wetlands, estuaries, springs, beaches, and barrier islands.
14. Describe the zones of the Everglades and explain why fire is important in pine tree maintenance.
15. Give four reasons why estuaries are such important ecological areas.
16. Define and give some examples of interspecific interactions: predation, mutualism, commensalism, parasitism, amensalism, competition, neutralism, proto cooperation.
17. Discuss the Flow of Energy by writing and explaining the equations for respiration and photosynthesis. Identify the reactions as endothermic or exothermic.
18. Discuss the function of ATP molecules in all living organisms and explain its relationship to ADP and AMP.
19. Discuss the fermentation reaction. Tell why it is considered to be anaerobic.

20. Explain (by drawing a graph) the P/R ratio.
21. Define entropy and explain how it relates to energy.
22. Explain the First and Second Laws of Thermodynamics.
23. Explain the primary reason why social hierarchies and territoriality exist as related to energy conservation.
24. Explain the relationship between energy flow and the carbon and oxygen cycles.
25. Illustrate the nitrogen cycle and use the terms: legumes, nitrogen-fixing bacteria, nodules. Explain why free nitrogen isn't available for animal or plant use.
26. Define a Biome and list 5 examples of biomes and describe the physical and biological characteristics of each.
27. Explain the difference between an evergreen forest and a deciduous forest.
28. Give an example of succession and define the terms: climax, pioneer, index plant and animal, blowout.
29. Describe an ecotone and explain why it is usually abundant in species diversity.
30. Define and give an example of homeostasis.
31. Describe plankton and give the two major types. Tell which category diatoms would fit into.
32. Explain how natural selection works and tell who is "fittest" in "survival of the fittest".
33. Discuss 4 theories concerning the origin of life.
34. Compare the amount of oxygen present in today's atmosphere to the primitive atmosphere of the Earth.

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