Behavioral Ecology & Ecosystems Review Guide

1. What is the difference between a proximate and an ultimate cause of animal behavior?
2. What is instinctive learning? Give an example.
3. What is a fixed action pattern? How is a F.A.P. related to instinct? Give an example.
4. What is a learned behavior?
5. What is imprinting? How is this a learned behavior? Give an example of imprinting.
6. What is classical conditioning? Other than Pavlov’s dogs, try to give another example.
7. What is operant conditioning? Give an example.
8. What is habituation? Give an habituation example that would occur in humans.
9. Explain observational learning. Show how humans use observational learning, especially when we are young.
10. Discuss the concept of behavioral plasticity. What is the advantage of this in certain populations?
11. What is epigenetics? How has this changed our outlook on inheritance?
12. What is the difference between a taxis and a kinesis?
13. What three types of taxis did our lab explore?
14. How can both the ideas of taxis and kinesis be intertwined?
15. What is a migration?
16. Give some examples of communication signals that are used in various organisms and their purpose.
17. What are the three types of mating systems? Explain each.
18. Why would an organism want to have parental care? What advantage comes from this?
19. What is a selfish herd?
20. What is a dominance hierarchy? How is this advantageous to the genetics of a certain group of organisms?
21. Explain the idea of a eusocial animal. Give an example. What is the advantage of being eusocial?
22. What is altruism? What are the advantages of altruism for an individual? Give an example.
23. What is eutrophication? What causes it? Why is it bad?
24. What is an ecosystem?
25. Explain the difference between a producer and a consumer.
26. What is a trophic level?
27. What is the ultimate source of energy for all ecosystems?
28. What are trophic levels?
29. What is the difference between a food chain and a food web? Which is more accurate?
30. Approximately how much energy is passed on to the next consumer trophic level?
31. Assume that 1000 Joules of energy is available via a sun-like source to an ecosystem. About how much energy would a tertiary consumer gain?
32. How does the approximate energy passed on to each trophic level limit the amount of higher level consumers in any given ecosystem?
33. What does the term “primary production” mean?
34. How are the ideas of a biomass pyramid and a energy pyramid related? (Don’t just tell me that they are both pyramids)
35. What is a biogeochemical cycle?
36. Briefly describe the following.
    1. Carbon cycle –
    2. Nitrogen cycle –
    3. Phosphorus cycle –
37. How does cutting down a forest break the water cycle?
38. What roles to photosynthesis and respiration, respectively, play in the carbon cycle?
39. How have humans offset the carbon cycle?
40. Explain the how CO2 emissions have contributed to an increase of the greenhouse effect.
41. Why is nitrogen important to life?
42. Why does nitrogen need to be “fixed” for living organisms to use?
43. What role do bacteria play in the nitrogen cycle?