**Final Exam Study Guide**

1. Know how to correctly write a scientific name (genus and species).
2. Define the following: prokaryote, eukaryote
3. Who was the father of evolution?
4. Peter and Rosemary Grant studied \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on Daphne Major to demonstrate natural selection.
5. Why did horses evolve over time from a small animal to a large animal adapted to grazing and running?
6. What is the difference between vestigial, analogous and homologous structures? Give examples of each.
7. What is genetic drift? What is the difference between a bottleneck and a founder effect?
8. What do the terms convergent evolution and divergent evolution mean?
9. What is maximum parsimony?
10. Define the following: species, natural selection, evolution
11. Know the taxonomic levels in order beginning with Domain and ending with species.
12. What are the 3 Domains of life?
13. What is the theory of endosymbiosis?
14. Conditions of the early earth were \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. What element that is common today was likely not found on the early earth?
15. Define the following: taxonomy, systematics, cladistics
16. What is molecular systematics?
17. What role does DNA, RNA and protein play in determining how closely related organisms are?
18. List structures that are found in ALL cells.
19. Define the following: transduction, transformation, conjugation
20. What are causes of the antibiotic crisis that we are currently experiencing?
21. What are cyanobacteria?
22. What are the 3 shapes of bacteria?
23. What protist organism causes malaria?
24. Define the following: pellicle, pseudopodia
25. Protists would tend to switch from sexual reproduction under what types of conditions?
26. Fungi reproduce by producing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
27. Fungal cell walls are made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Plant cell walls are made of \_\_\_\_\_\_\_\_\_\_\_\_\_.
28. Are fungi prokaryotic or eukaryotic?
29. Where are extremophiles typically found?
30. Define the following: lichen, mycorrhizae, hyphae, mycelium
31. Define the following: xylem, phloem
32. For the following groups, list which is dominant (sporophyte or gametophyte)
33. Nonvascular
34. Seedless vascular
35. Seed plants
36. What is a fruit? Give examples.
37. In plants, the multicellular haploid form is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The multicellular diploid form is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
38. What is the difference between a monocot and a eudicot?
39. What is the difference between fertilization and pollination?
40. Define the following: apical meristem, stomata, cuticle, desiccation
41. What do the terms dioecious and monoecious mean?
42. Animals are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (choose prokaryotic or eukaryotic) and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (choose heterotrophic or eutrophic).
43. Give examples of heterotrophs and autotrophs. What do these terms mean?
44. What is the difference between acoelomate and eucoelomate animals?
45. What does the term sessile mean?
46. What are Supergroups?
47. What are some types of asexual reproduction found in sponges?
48. What do the terms endotherm and ectotherm mean? Give examples of each.
49. What type of symmetry do most animals have?
50. The animal phylum that has jointed appendages and segmentation is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
51. The cells of sponges are called \_\_\_\_\_\_\_\_\_\_\_\_\_. The cells of jellyfish are called \_\_\_\_\_\_\_\_\_\_\_\_.
52. Birds are descended from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
53. What is the difference between a protostome and a deuterostome?
54. What are eutherians, marsupials and monotremes? Give examples.
55. Give examples of jawless fish, bony fish and cartilaginous fish.
56. List examples of amphibians and reptiles.
57. Define the following: mortality rate, species richness
58. What is the difference between clumped, random and uniform distribution patterns?
59. What is the difference between K-selected and r-selected species?
60. What is the difference between abiotic and biotic factors? Give examples of each.
61. What are density dependent and density independent factors?
62. What is intraspecific competition?
63. What shape curve does logistic growth produce? Exponential?
64. What is the difference between logistic and exponential growth?
65. Define the following: carrying capacity, population size, population density
66. What is the difference between a grazing and a detrital food web?
67. An example of predator-prey population dynamics that was discussed in the text is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
68. What molecules do phosphorous help make for living things? Sulfur?
69. The main element found in acid rain water is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
70. The element that makes up 78% of the atmosphere is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
71. How did the pesticide DDT harm birds like eagles?
72. What factors are currently threatening tropical forests?
73. The ecosystem category that makes up the majority of the earth’s surface is \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
74. What is mimicry?
75. What is a niche?
76. Define the following: endemic species, keystone species, invasive species, exotic species
77. Define the following: preserve, biological hotspot
78. Define the following: resistance, resilience
79. Biodiversity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (increases or decreases) as one gets closer to the equator.
80. What is the difference between primary and secondary succession?
81. The 5th mass extinction occurred \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (when) and wiped out \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
82. We are likely in a sixth mass extinction period caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
83. List 2 major greenhouse gases.
84. What is eutrophication?
85. What are some effects of climate change (global warming)?
86. What is chytridiomycosis? Colony collapse disorder?
87. The first National Park established in the US was \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
88. Define the following: biodiversity, chemical diversity, genetic diversity, ecosystem diversity