

Biology Spring Final Review

1. What is the theory of evolution?
2. What is the difference between homologous and vestigial structures?
3. What are fossils? Where are they mostly found?
4. What is the difference between Lamarck's and Darwin's theory of evolution?
5. What suggests common ancestry?
6. What is natural selection? What are the 4 different types and how are they different?
7. What is Hardy-Weinberg's theory of genetic equilibrium?
8. What five things disrupt genetic equilibrium?
9. What is the difference between variations and adaptations in a population?
10. What is the definition of a species?
11. What can cause speciation?
12. Review the following systems with organs and their functions:
 - a. Skeletal
 - b. Muscular
 - c. Respiratory
 - d. Circulatory
 - e. Digestive
 - f. Nervous
13. Where are the three types of muscle tissue found?
14. Where does gas exchange occur? (respiratory to circulatory & circulatory to tissue cells)
15. What is delivered by the circulatory system that provides most of the energy to cells?
16. What are neurotransmitters and what are they used for in the nervous system?
17. What is the purpose of the endocrine system?
18. Describe hormones and how they work.
19. What is diabetes?
20. Name the two hormones associated with keeping stable blood sugar and identify how they work.
21. Review experimental design set-up; control vs. experimental group, independent variable
22. What is the purpose of vaccinations?
23. What is the difference between an antigen and an antibody?
24. What is the function of a macrophage? What type of cell is it?
25. Describe the difference between nonspecific, cell-mediated and humoral immunity. Give examples from each type of response.
26. What type of cell does HIV infect?
27. Define ecology and the levels of organization.
28. Describe the effects of the hole in the ozone layer and increased greenhouse gases.
29. What is an organism's niche?
30. Name density-dependent and density-independent limiting factors for a population.
31. What is the carrying capacity of an ecosystem?
32. Identify growth rate characteristics on a population model.
33. Explain biodiversity. Where is the most biodiversity found?
34. Describe succession.
35. What is biomass?
36. What part of the ecosystem contains the most biomass (levels of ecological pyramid)?
37. Describe the flow of energy through an ecosystem (trophic levels).
38. Describe the ten-percent rule for trophic levels.
39. Identify the importance of and participants in biogeochemical cycles.

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Evolution- Chapter 15 and 16

- ❑ 15-1 Fossil Record
- ❑ 15-2 Theories of Evolution (Lamarck vs. Darwin)
- ❑ 15-3 Types of Evidence
- ❑ 16-1 Genetic Equilibrium
- ❑ 16-2 Disruption of Genetic Equilibrium (natural selection, migration, genetic drift, etc)
- ❑ 16-3 Formation of Species (speciation, isolating mechanisms)

The Immune System- Chapter 48

- ❑ 48-1 Nonspecific Defenses (inflammatory response, etc)
- ❑ 48-2 Specific Defenses (cell-mediated vs. humoral response)
- ❑ 48-3 HIV & AIDS

Endocrine System- Chapter 51

- ❑ 51-1 Hormones
- ❑ 51-2 Pancreas Function & Diabetes Article (insulin vs. glucagon)
- ❑ 51-3 Feedback Mechanisms

Experimental Design

- ❑ General considerations (independent variable, control, etc)
- ❑ Exercise and heart rate

Body Systems -Organs, General Functions & Relationships between Body Systems

- ❑ 46 Skeletal & Muscular
- ❑ 47 Circulatory & Respiratory
- ❑ 49-2 Digestive
- ❑ 50-1 Nervous

Ecology- Chapter 19 and 20

- ❑ 19-1 Ecology (Levels of Organization, Models)
- ❑ 19-2 Ecology of Organisms (Biotic & Abiotic Factors, Niche)
- ❑ 20-1 Understanding Populations
- ❑ 20-2 Measuring Populations (Limiting factors)
- ❑ 20-3 Human Population Growth

Ecology- Chapter 21 and 22

- ❑ 21-2 Properties of Communities (Species Richness & Diversity)
- ❑ 21-3 Succession
- ❑ 22-1 Energy Transfer (Food Web, etc.)
- ❑ 22-2 Ecosystem Recycling (Cycles of Matter)

Environmental Science- Chapter 23

- ❑ 23-1 Greenhouse, Global Warming & Climate Change
- ❑ 23-2 Biodiversity

120 QUESTIONS TOTAL (110 multiple choice with 20 matching- evolution vocab & limiting factors)