Biology I – Chapter 10
Principles of Evolution
Test Review

Key

Please review your notes, textbook, and homework assignments to prepare for the test.

1. Which term is used to describe a group of similar organisms that can reproduce and produce fertile offspring?

   Species

2. What term is used to describe the difference in physical traits among individuals in a group?

   Variation

3. What did Darwin observe in finch populations on the Galapagos Islands of the coast of South America?

   they were well suited to their environment

4. Describe the process of natural selection.

   a mutation occurs, it provides an advantage, the organism has more offspring, the mutation becomes more prevalent

5. What is a vestigial structure? Give two examples of vestigial structures.

   a structure that had a function in an ancestor, but is not used in the current organism ex. ostrich wings human appendix

6. If an organism has a vestigial structure, that structure likely once had a function in a(n) ancestor. (Fill in the blank.)

7. What are homologous structures? Give an example.

   Same structure, different functions
   whale flipper, human arm

8. What are analogous structures? Give an example.

   Same function, different structures
   Bird wing, Insect wing

9. How would the DNA sequences in two similar organisms compare to each other?

   they would be similar

10. Why is evolution considered to be one of the most important theories in science?

It united all the fields of science

11. In what ways did Charles Darwin contribute to the theory of evolution?

Theory of natural selection

12. What do protein sequences in one organism resembling those of another suggest?

common ancestry

13. What is a mutation?

a change in the DNA

14. What is a gene pool?

all the genes in a population

15. What is a theory? Why is evolution a considered to be a theory?

Can't be proven, but a lot of evidence suggests it is true

16. What is the term for a feature that allows an organism to survive better in its environment?

fitness

17. What is the name for the process in which humans breed organisms for certain traits?

artificial selection

18. What does fossil evidence show us about vestigial structures?

the ancestor's functions of the structure

19. What is artificial selection? Give two example of organisms produced by artificial selection?

Humans selecting traits they like

designer dogs, pigeons

20. Which theory explains evolution?

natural selection

21. What happens to an allele that lowers an individual's ability to survive and reproduce?

it disappears from the population

22. Why have certain disease-causing bacteria become resistant to antibiotics?

only the resistant ones live and reproduce so the offspring are resistant too

23. How does the fossil record support the theory of natural selection?

common structures are seen

24. How have scientific findings (ex. DNA sequencing) after Darwin affected the theory of evolution?

more organisms are able to be classified as being related

25. Name four things that are considered to be pieces of evidence for evolution.

geography
anatomy
fossils
embryology

26. What is the difference between a homologous structure and an analogous structure?

↙ same structure different function

↘ same function different structure

27. What do African ostrich wings, the human appendix, and eyes in mole rats all have in common? What is the name for these structures?

all are vestigial structures

28. What significance does embryological development have in the theory of evolution?

the embryos develop the same

29. What significance do genetic comparisons have in the theory of evolution?

if they share DNA then they are related - the more they share, the closer they are related

30. How does an organism's environment relate to natural selection?

the fittest organisms for that environment live & produce offspring