

CHAPTER REVIEW

Know the Terms

Match the best answer with each statement or definition.

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|------------------------|-----------------------|------------------|
| a. comparative anatomy | e. analogous | i. embryology |
| b. homologous | f. radioactive dating | j. fossils |
| c. sedimentary rock | g. biochemistry | k. vestigial |
| d. extinction | h. index fossils | l. petrification |

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|---|----------|
| 1. body parts with similar embryological development | 1. ____ |
| 2. remnants of structures that functioned in ancestral forms | 2. ____ |
| 3. death of all members of a species | 3. ____ |
| 4. evolutionary evidence provided by structural similarities | 4. ____ |
| 5. use of carbon-14 to determine the age of fossils | 5. ____ |
| 6. traces or remains of organisms | 6. ____ |
| 7. body parts with similar function but different development | 7. ____ |
| 8. replacement of body parts by minerals in water | 8. ____ |
| 9. evolutionary evidence from patterns of development | 9. ____ |
| 10. evolutionary evidence from DNA and proteins | 10. ____ |

Define or describe the following words.

- 11. organic evolution: _____

- 12. geologic evolution: _____

- 13. spontaneous generation: _____

- 14. biogenesis: _____

- 15. heterotroph hypothesis: _____

- 16. coacervates: _____

- 17. heterotrophs: _____

EVIDENCE OF EVOLUTION

CHAPTER

28**28-4 The Origins of Life — Early Hypotheses**

Part I: Vocabulary Review

Replace the italicized definition with the correct vocabulary term.

1. *The idea that living organisms arise naturally from nonliving matter* was finally defeated as a hypothesis for how maggots arise from decaying meat when Louis Pasteur showed that microorganisms that developed in a nutrient broth came from spores and microorganisms in the air. _____

Part II: Content Review

Reorganize the events in each group in the order in which they occurred. Write 1 next to the event that happened first, 2 next to the event that happened second, and so on.

2. _____ Van Helmont concluded that the wheat was changed into mice by the presence of human sweat.
_____ Van Helmont placed wheat grains in a sweaty shirt.
_____ After 21 days, the wheat had disappeared and mice were present.
3. _____ Redi saw maggots consume the decaying meat.
_____ Redi placed meat in open containers.
_____ Redi observed that the maggots formed pupas.
_____ Redi saw that the pupas developed into flies.
4. _____ Flies entered the open jars and maggots appeared on the meat; no maggots appeared on the meat in the closed jars.
_____ Redi hypothesized that maggots developed from eggs laid on meat by flies.
_____ This experiment proved only that the meat had to be exposed to open air in order to develop maggots.
_____ Redi placed some meat in open jars and in sealed jars.
5. _____ Redi proved that maggots did not arise spontaneously from decaying meat.
_____ Flies landed on the gauze and laid eggs on the gauze.
_____ No maggots appeared inside any of the jars.
_____ Redi placed meat inside jars covered with gauze, allowing free circulation of air.
6. _____ Needham opened and examined the flasks and found them full of microorganisms.
_____ Needham boiled flasks of broth for a few minutes to kill any microorganisms in them and then he sealed the flasks.
_____ Needham concluded that microorganisms develop by spontaneous generation.
_____ Needham repeated the experiment several times and got the same results.