

## LS CH 7 practice

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_ 1. Which of the following is NOT a characteristic that all living things share?  
a. a cellular organization b. using energy c. movement d. reproduction
- \_\_\_ 2. A change in an organism's surroundings that causes it to react is called  
a. a response. b. a stimulus. c. energy. d. development.
- \_\_\_ 3. Which of the following do all living things need to survive?  
a. water b. oxygen c. sunlight d. carbon dioxide
- \_\_\_ 4. Homeostasis refers to an organism's ability to  
a. maintain stable internal conditions. b. compete for living space. c. dissolve chemicals. d. obtain energy.
- \_\_\_ 5. Which gas was NOT a part of Earth's atmosphere 3.6 billion years ago?  
a. nitrogen b. methane c. oxygen d. carbon dioxide
- \_\_\_ 6. Scientists hypothesize that the first life forms on Earth  
a. were multicellular organisms. b. lived on land. c. did not need oxygen to survive. d. resembled today's plants.
- \_\_\_ 7. Which of the following was true about the experiment conducted by Miller and Urey?  
a. The conditions of early Earth were recreated in a flask. b. Oxygen was added to the flask. c. Cells were produced in the flask. d. Unicellular organisms were added to the flask.
- \_\_\_ 8. To survive on Earth, the first cells needed the ability to  
a. take in oxygen from the atmosphere. b. make their own food. c. use chemicals in their surroundings for energy. d. combine to form multicellular organisms.
- \_\_\_ 9. What is taxonomy?  
a. the scientific study of how living things are classified b. the name of Aristotle's classification system  
c. the process used by geologists to classify rocks d. the process of observing an organism's behavior
- \_\_\_ 10. Why do scientists organize living things into groups?  
a. so they can find them in the wild more easily b. so that the organisms are easier to study c. so they can make sense of the variety of rocks on Earth d. so products from living things can be easily found in groceries
- \_\_\_ 11. What is binomial nomenclature?  
a. classifying organisms into seven levels b. the naming system developed by Aristotle c. grouping animals based on how they move d. a naming system in which each organism is given a two-part name
- \_\_\_ 12. An organism's scientific name consists of  
a. its class name and its family name. b. its kingdom name and its phylum name. c. its genus name and its species name. d. its phylum name and its species name.
- \_\_\_ 13. Which is the broadest classification level?  
a. family b. kingdom c. phylum d. species
- \_\_\_ 14. The more classification levels that two organisms share,  
a. the closer together on Earth they live. b. the easier it is to tell them apart. c. the more characteristics they have in common. d. the more distantly related they are.
- \_\_\_ 15. What is one way in which scientists get information about the evolutionary history of species?  
a. by comparing organisms' body structures b. by observing where organisms live c. by observing what organisms eat d. by studying how organisms move
- \_\_\_ 16. The gradual change in species over time is called  
a. taxonomy. b. homeostasis. c. evolution. d. classification.
- \_\_\_ 17. One characteristic used to place organisms into kingdoms is

- a. how they move. b. where they live. c. their ability to make food. d. their ability to reproduce.
- \_\_\_ 18. Which kingdom includes only multicellular heterotrophs?  
a. protists b. archaeobacteria c. plants d. animals
- \_\_\_ 19. The process of change that occurs during an organism's life to produce a more complex organism is called  
a. reproduction. b. growth. c. development. d. stimulus.
- \_\_\_ 20. Which is the most abundant chemical found in living cells?  
a. water b. carbohydrates c. proteins d. nucleic acids
- \_\_\_ 21. The experiments of Redi and Pasteur helped to demonstrate that  
a. species gradually change over time. b. living things do not arise from nonliving material. c. organisms can be placed in groups based on their similarities. d. the chemicals of life could have arisen on early Earth.
- \_\_\_ 22. Which classification level is broader than the phylum level?  
a. order b. class c. family d. kingdom
- \_\_\_ 23. A plant growing toward light is an example of  
a. reproduction. b. a response. c. a stimulus. d. development.
- \_\_\_ 24. The mistaken idea that living things arise from nonliving sources is known as  
a. binomial nomenclature. b. spontaneous generation. c. reproduction. d. homeostasis.
- \_\_\_ 25. What contribution of Charles Darwin had a major impact on classification?  
a. binomial nomenclature b. taxonomy c. seven levels of classification d. his theory of evolution
- \_\_\_ 26. The source of energy for most autotrophs is  
a. water. b. the sun. c. heterotrophs. d. other autotrophs.
- \_\_\_ 27. Which kingdom includes only prokaryotes?  
a. archaeobacteria b. protists c. plants d. fungi
- \_\_\_ 28. Which of the following characteristics do all plants share?  
a. being unicellular b. producing flowers c. being a prokaryote d. being an autotroph
- \_\_\_ 29. Which of the following kingdoms includes both unicellular and multicellular organisms?  
a. eubacteria b. protists c. plants d. archaeobacteria
- \_\_\_ 30. An organism that makes its own food is called a(n)  
a. heterotroph. b. eukaryote. c. autotroph. d. prokaryote.

### Modified True/False

*Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.*

- \_\_\_ 31. Growth is the process of change that occurs during an organism's life to produce a more complex organism.
- \_\_\_ 32. A horse is a heterotroph.
- \_\_\_ 33. Today, Earth's atmosphere contains a great deal of nitrogen, a gas that was not in the atmosphere 3.6 billion years ago.
- \_\_\_ 34. Hypotheses about the first forms of life on Earth are consistent with evidence obtained from fossils of organisms that lived about 3.4 billion years ago.

- \_\_\_ 35. The scientific study of how organisms are organized is called binomial nomenclature.
- \_\_\_ 36. Alligators and crocodiles are classified in the same order and therefore probably have different evolutionary histories.
- \_\_\_ 37. Tibicen superbis is a name Linnaeus might have given to an organism.
- \_\_\_ 38. Each genus of organisms is divided into classes.
- \_\_\_ 39. Mushrooms, molds, and mildew are members of the fungi kingdom.
- \_\_\_ 40. Archaeobacteria and eubacteria are two kingdoms of eukaryotes.

### Completion

Complete each statement.

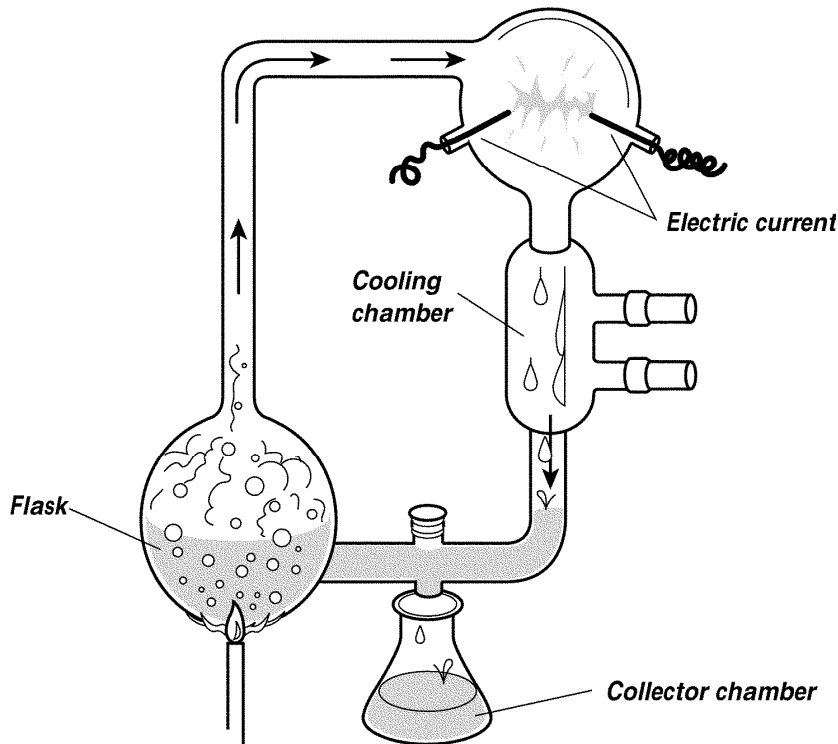
41. A \_\_\_\_\_ organism is a living thing that is composed of many cells.
42. An organism reacts to a stimulus with a(n) \_\_\_\_\_.
43. Organisms that make their own food are called \_\_\_\_\_.
44. An organism's ability to maintain stable internal conditions despite changes in its surroundings is called \_\_\_\_\_.
45. Most of today's organisms could not have lived on Earth 3.6 billion years ago because there was no \_\_\_\_\_ in the air then.
46. A gas that was probably abundant in Earth's atmosphere 3.6 billion years ago and is still abundant today is \_\_\_\_\_.
47. Scientists think that the first life forms on Earth probably were unicellular heterotrophs, did not need oxygen to survive, and lived in Earth's \_\_\_\_\_.
48. Traces of ancient organisms that have been preserved in rock or other substances are known as \_\_\_\_\_.
49. Biologists use \_\_\_\_\_ to organize living things into groups.
50. Biologists find \_\_\_\_\_ useful because this scientific system gives them much information about an organism based on its classification.
51. The bones in the wing of a bat are similar to the bones in the flipper of a whale. This information suggests that bats and whales have a similar \_\_\_\_\_ history.
52. The modern system of classification is based on the theory of \_\_\_\_\_, which was first proposed by Charles Darwin.
53. The first part of an organism's scientific name is its classification group called \_\_\_\_\_.

54. Aristotle grouped animals on the basis of how they moved or where they lived. Then \_\_\_\_\_ developed an improved system that depended on grouping organisms on the basis of their observable features.
55. In the modern classification system used by biologists, the broadest level of organization is called a(n) \_\_\_\_\_.
56. Each genus of organisms contains one or more \_\_\_\_\_.
57. An owl and a bat share the same kingdom and phylum; an owl and a robin share the same kingdom, phylum, and class. The owl and \_\_\_\_\_ have more characteristics in common.
58. Archaeobacteria are not classified with \_\_\_\_\_, the other prokaryote kingdom, because they have different chemical makeups.
59. The \_\_\_\_\_ kingdom is the only kingdom of eukaryotes that contains both autotrophs and heterotrophs and both unicellular and multicellular organisms.
60. Multicellular organisms are found in the protist, fungus, animal, and \_\_\_\_\_ kingdoms.

### Short Answer

Use the diagram to answer each question.

**The Equipment Used by Urey and Miller in Their Experiment**



61. What conditions were Urey and Miller trying to recreate in their experiment?
62. What did Urey and Miller place in the flask?
63. Why did Urey and Miller send an electric current through the mixture?
64. What kinds of substances accumulated inside the collection chamber within a week?
65. What information did Urey and Miller's experiment provide about the possible origin of life on Earth?
66. Why were Urey and Miller especially careful to keep oxygen out of their equipment?

Use the diagram to answer each question.

**Table of Classification Labels**

Classification Level	Aardwolf	Grey Wolf	Coyote	Lion	Blue Whale
<b>Kingdom</b>	Animalia	Animalia	Animalia	Animalia	Animalia
<b>Phylum</b>	Chordata	Chordata	Chordata	Chordata	Chordata
<b>Class</b>	Mammalia	Mammalia	Mammalia	Mammalia	Mammalia
<b>Order</b>	Carnivora	Carnivora	Carnivora	Carnivora	Cetacea
<b>Family</b>	Hyaenidae	Canidae	Canidae	Felidae	Balaenoptera
<b>Genus</b>	<i>Proteles</i>	<i>Canis</i>	<i>Canis</i>	<i>Panthera</i>	<i>Balaenoptera</i>
<b>Species</b>	<i>Proteles cristatus</i>	<i>Canis lupus</i>	<i>Canis latrans</i>	<i>Panther leo</i>	<i>Balaenoptera musculus</i>

67. What classification groups do all of the organisms in the table have in common?
68. In what two ways are the organisms in the table similar to organisms in the plant kingdom?
69. Which of the organisms in the table is least similar to the others? Explain.
70. Which of the organisms in the table is (are) most similar to a tiger (*Panthera tigris*)? Explain.
71. Based on the information in the table, which two organisms would you say have the most similar evolutionary history? Explain.
72. Based on their kingdoms, what are the shared characteristics of the organisms in the table?

### Essay

73. Airplanes respond to certain stimuli and use energy. Why, then, are airplanes not considered living things?
74. How do organisms differ in the ways they obtain their energy source, or food?
75. Explain why today's organisms that require oxygen owe their existence to the early autotrophs on Earth.
76. Why are the names of the following organisms confusing: starfish, seahorse, sea cucumber, jellyfish, and reindeer moss? How can a classification system help avoid the confusion?
77. What are the two major contributions of Linnaeus to taxonomy?
78. A person tells you that two organisms belong to the same family but to different classes. Can that information be correct? Explain.
79. Why is the protist kingdom sometimes called the "odds and ends" kingdom?
80. Imagine a planet with an atmosphere like Earth's atmosphere 3.6 billion years ago. Which organisms present on Earth today do you think would be most likely to survive on that planet? Explain your reasoning.