

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) A scientist performs a controlled experiment. This means that 1) _____
- A) the experiment proceeds at a slow pace to guarantee that the scientist can carefully observe all reactions and process all experimental data.
 - B) two experiments are conducted, one differing from the other by only a single variable.
 - C) one experiment is performed, but the scientist controls the variables.
 - D) the experiment is repeated many times to ensure that the results are accurate.

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- 2) A theory is 2) _____
- A) a description of a belief that invokes the supernatural.
 - B) a concept in the early stages that still needs to be tested.
 - C) an explanation of an idea that is broad in scope and supported by a large body of evidence.
 - D) an idea that has been proven.

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After reading the paragraph, answer the question(s) that follow.

The National Institutes of Health (NIH) set up a study to determine whether large doses of vitamin C would shorten the length of time it takes to recover from a cold. Three thousand volunteers were split into two groups. For two weeks, members of Group A took 3,000 mg of vitamin C daily. Group B received 3,000 mg of a placebo. At the end of the two-week period, the researchers inserted live cold viruses directly into the noses of all the volunteers. The volunteers in both Group A and B continued to take their daily pills. All the volunteers got colds, and there was no significant difference in the length of time the colds lasted.

- 3) Which was the experimental group? 3) _____
- A) Group A only
 - B) Group B only
 - C) all 3,000 volunteers
 - D) the researchers that inserted the cold virus

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- 4) An antibiotic kills 99.9% of a bacterial population. You would expect the next generation of bacteria 4) _____
- A) to die out due to the drastic decrease in population size.
 - B) to be more resistant to that antibiotic.
 - C) to be just as susceptible to that antibiotic as was the previous generation.
 - D) to be more contagious than the prior generation.

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- 5) Which of the following statements about the properties of life is *false*? 5) _____
- A) All organisms have the ability to reproduce.
 - B) All organisms have the ability to respond to stimuli from the environment.
 - C) All organisms have the ability to maintain a constant internal temperature.
 - D) All organisms have the ability to take in energy and use it.

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- 6) Consider the following statement: "If all vertebrates have backbones, and turtles are vertebrates, then turtles have backbones." This statement is an example of 6) _____
- A) deductive reasoning. B) rationalization.
C) a hypothesis. D) inductive reasoning.

Diff: 0 Type: MC Var: 1 Page Ref:

- 7) Which of the following statements about genetics is *true*? 7) _____
- A) Differences among organisms reflect different nucleotide sequences in their DNA.
B) DNA is made up of six different kinds of nucleotides.
C) Each DNA molecule is a single strand of nucleotides.
D) Genes are proteins that produce DNA.

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- 8) The ultimate source of energy flowing into nearly all ecosystems is 8) _____
- A) electricity. B) wind. C) sunlight. D) radioactivity.

Diff: 0 Type: MC Var: 1 Page Ref:

- 9) If you eat a hamburger, you are mainly eating ground-up beef muscle. What levels of organization are represented in this ground-up muscle? 9) _____
- A) tissue, organ, and organ system B) organ, organ system, and organism
C) organelle, cell, and tissue D) organism, population, and community

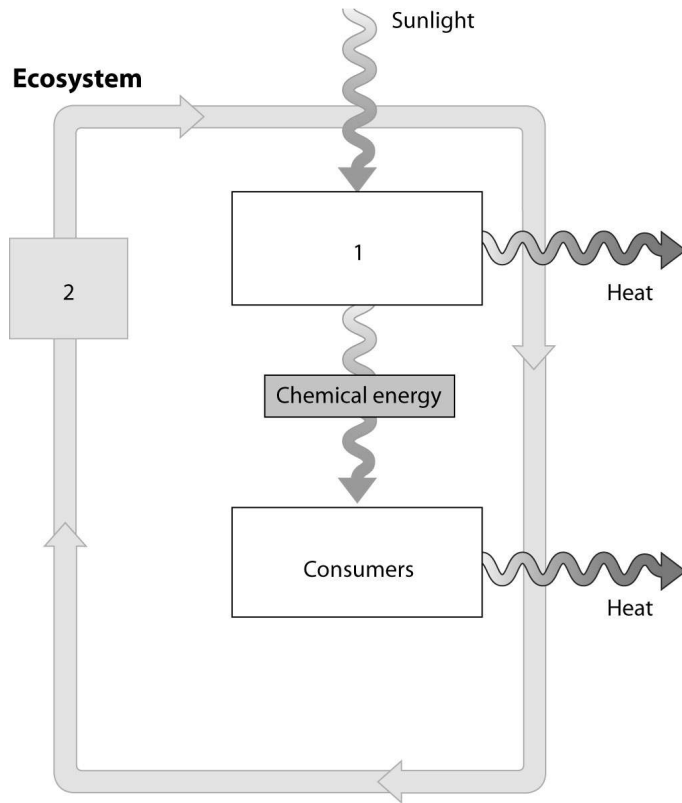
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- 10) Which of the following statements about ecosystems is *false*? 10) _____
- A) Bacteria and fungi recycle energy within an ecosystem.
B) In the process of energy conversions within an ecosystem, some energy is converted to heat.
C) Chemical nutrients cycle within an ecosystem.
D) Plants and other photosynthetic organisms are producers in ecosystems.

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11) Which of the following organisms belongs to the group represented in Box 1?

11) _____



- A) leopard
- C) tree

- B) decomposing bacteria
- D) giraffe

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12) Kingdom Fungi includes species

12) _____

- A) that obtain food by decomposing dead organisms and absorbing the nutrients.
- B) such as mushrooms and plants.
- C) that use photosynthesis to obtain food.
- D) that obtain food by ingestion.

Diff: 0 Type: MC Var: 1 Page Ref:

13) Which of the following statements regarding a common cellular activity is *false*?

13) _____

- A) Cells regulate their internal environment.
- B) Cells respond to the environment.
- C) Cells develop and maintain complex organization.
- D) New cells are derived from cellular components like organelles.

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14) The tree in your backyard is home to two cardinals, a colony of ants, a wasp's nest, two squirrels, and millions of bacteria. Together, all of these organisms represent

14) _____

- A) a population.
- B) an ecosystem.
- C) a species.
- D) a community.

Diff: 0 Type: MC Var: 1 Page Ref:

- 15) Which of the following best represents an example of technology? 15) _____
A) figuring out what mountain gorillas eat
B) developing a test for genetic diseases
C) identifying the cause of a new contagious disease
D) sequencing the human genome
Diff: 0 Type: MC Var: 1 Page Ref:
- 16) All organisms belonging to the kingdom Plantae 16) _____
A) are multicellular and lack a nucleus.
B) are unicellular and lack a nucleus.
C) obtain food by decomposing the remains of dead organisms and absorbing the nutrients.
D) are photosynthetic.
Diff: 0 Type: MC Var: 1 Page Ref:
- 17) In an ecosystem, energy 17) _____
A) typically flows from consumers to producers to decomposers.
B) typically flows from producers through a series of consumers.
C) cycles along with chemical nutrients.
D) comes ultimately from bacteria.
Diff: 0 Type: MC Var: 1 Page Ref:
- 18) Which of the following is *not* an example of evolution that has resulted from human activity? 18) _____
A) Like certain other crops, domesticated strawberries are larger than wild strawberries.
B) Some insect species are now resistant to pesticides.
C) Because of hunting, species such as bears and wolves are in danger of extinction.
D) Many strains of bacteria are now resistant to some commonly used antibiotics.
Diff: 0 Type: MC Var: 1 Page Ref:
- 19) A hypothesis is 19) _____
A) an explanatory idea that is broad in scope and supported by a large body of evidence.
B) the same as a theory.
C) a widely accepted idea about a phenomenon.
D) a proposed explanation for a set of observations.
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- 20) The teeth of grain-eating animals (such as horses) are usually broad and ridged. This makes the teeth suitable for grinding and chewing. Meat-eating animals (such as lions) have pointed teeth that are good for puncturing and ripping flesh. This illustrates 20) _____
A) a result of natural selection only.
B) a result of natural selection as well as the connection between form and function.
C) a food web.
D) the connection between form and function only.
Diff: 0 Type: MC Var: 1 Page Ref:

- 21) Your instructor asks you to look into your microscope to see a prokaryotic cell. You will be looking for a cell that _____ 21)
- A) makes up most of the tissues of your body.
 - B) has a membrane.
 - C) is much larger than most cells in your body.
 - D) has a nucleus.

Diff: 0 Type: MC Var: 1 Page Ref:

- 22) Members of the kingdom Animalia _____ 22)
- A) make their own food through photosynthesis.
 - B) are composed of cells that lack a cell membrane.
 - C) can obtain their food either by absorption or by photosynthesis.
 - D) can obtain their food by eating other organisms.

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- 23) To be scientifically valid, a hypothesis must be _____ 23)
- A) reasonable.
 - B) controlled.
 - C) part of a theory.
 - D) testable and falsifiable.

Diff: 0 Type: MC Var: 1 Page Ref:

- 24) Which of the following is a kingdom within the domain Eukarya? _____ 24)
- A) Viruses
 - B) Fungi
 - C) Bacteria
 - D) Archaea

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After reading the paragraph, answer the question(s) that follow.

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- 25) To have confidence that the results of the experiment were valid, you'd also want to know _____ 25)
- A) whether the volunteers all worked for the same company.
 - B) whether the volunteers exercised daily.
 - C) whether any volunteers had colds at the start of the experiment.
 - D) what the volunteers ate during the experiment.

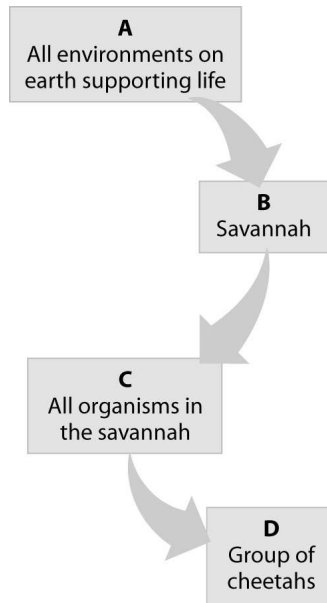
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- 26) Organisms that are prokaryotes are in the domains _____ 26)
- A) Fungi and Bacteria.
 - B) Eukarya and Archaea.
 - C) Bacteria and Archaea.
 - D) Plantae and Animalia.

Diff: 0 Type: MC Var: 1 Page Ref:

27) Which level in the hierarchy shown is a community?

27) _____



A) level A

B) level B

C) level C

D) level D

Diff: 0 Type: MC Var: 1 Page Ref:

28) Which of the following statements about evolution is *true*?

28) _____

- A) Evolution is deliberate and purposeful.
- B) Evolution can result in adaptations.
- C) Organisms evolve structures in response to needs.
- D) Individuals evolve within the span of their own lifetimes.

Diff: 0 Type: MC Var: 1 Page Ref:

29) What is the difference between a tissue and an organ system?

29) _____

- A) The tissue level of organization is more inclusive than the organ system level.
- B) An organ system includes tissues.
- C) A tissue cannot exist unless it is a component of an organ system, whereas an organ system can exist independently of tissues.
- D) Tissues are not composed of cells; organ systems are composed of cells.

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30) The role of a control in an experiment is to

30) _____

- A) prove that a hypothesis is correct.
- B) provide a basis of comparison to the experimental group.
- C) ensure repeatability.
- D) counteract the negative effect of the experiment.

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31) You notice that over the past month, many students on campus have started wearing a new style of school sweatshirt. You think to yourself that perhaps the bookstore has recently started selling this new sweatshirt style. This prediction is an example of

31) _____

- A) a hypothesis.
- B) an experiment.
- C) a type of observation.
- D) an experimental question.

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- 32) Life is organized in a hierarchical fashion. Which of the following sequences correctly lists that hierarchy from least inclusive to most inclusive? 32) _____
- A) cell, molecule, organ system, organ, organelle, population, tissue, organism, ecosystem, community
 - B) ecosystem, population, organ system, cell, community, molecule, organ, organism, organelle, tissue
 - C) molecule, organelle, cell, tissue, organ, organ system, organism, population, community, ecosystem
 - D) organism, organ system, tissue, population, organ, organelle, community, cell, ecosystem, molecule

Diff: 0 Type: MC Var: 1 Page Ref:

- 33) Which of the following statements about the domain Bacteria is *true*? 33) _____
- A) All bacteria lack a nucleus.
 - B) All bacteria have a membrane-bound nucleus.
 - C) Archaea belong to this domain.
 - D) All bacteria are multicellular organisms.

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- 34) Which of the following statements is *not* consistent with Darwin's theory of natural selection? 34) _____
- A) Factors in the environment result in some organisms having better reproductive success than others.
 - B) Individual organisms exhibit genetic change during their life spans to better fit their environment.
 - C) Natural selection can lead to the appearance of new species.
 - D) Individuals in a population exhibit variations, some of which are passed from parents to offspring.

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Answer Key
Testname: CH1

- 1) B
- 2) C
- 3) A
- 4) B
- 5) C
- 6) A
- 7) A
- 8) C
- 9) C
- 10) A
- 11) C
- 12) A
- 13) D
- 14) D
- 15) B
- 16) D
- 17) B
- 18) C
- 19) D
- 20) B
- 21) B
- 22) D
- 23) D
- 24) B
- 25) C
- 26) C
- 27) C
- 28) B
- 29) B
- 30) B
- 31) A
- 32) C
- 33) A
- 34) B