Exam

Name_____

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

1) Which of the following statements about the properties of life is *false*? 1) _____
   A) All organisms have the ability to respond to stimuli from the environment.
   B) All organisms have the ability to take in energy and use it.
   C) All organisms have the ability to reproduce.
   D) All organisms have the ability to maintain a constant internal temperature.

2) Life is organized in a hierarchical fashion. Which of the following sequences correctly lists that hierarchy from least inclusive to most inclusive? 2) _____
   A) molecule, organelle, cell, tissue, organ, organ system, organism, population, community, ecosystem
   B) ecosystem, population, organ system, cell, community, molecule, organ, organism, organelle, tissue
   C) cell, molecule, organ system, organ, organelle, population, tissue, organism, ecosystem, community
   D) organism, organ system, tissue, population, organ, organelle, community, cell, ecosystem, molecule

3) What is the difference between a tissue and an organ system? 3) _____
   A) The tissue level of organization is more inclusive than the organ system level.
   B) A tissue cannot exist unless it is a component of an organ system, whereas an organ system can exist independently of tissues.
   C) An organ system includes tissues.
   D) Tissues are not composed of cells; organ systems are composed of cells.

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

5) If you eat a hamburger, you are mainly eating ground–up beef muscle. What levels of organization are represented in this ground–up muscle? 5) _____
   A) organism, population, and community B) tissue, organ, and organ system
   C) organ, organ system, and organism D) organelle, cell, and tissue

6) Which of the following statements regarding a common cellular activity is *false*? 6) _____
   A) Cells develop and maintain complex organization.
   B) New cells are derived from cellular components like organelles.
   C) Cells respond to the environment.
   D) Cells regulate their internal environment.

7) Your instructor asks you to look into your microscope to see a prokaryotic cell. You will be looking for a cell that 7) _____
   A) makes up most of the tissues of your body.
   B) is much larger than most cells in your body.
   C) has a nucleus.
   D) has a membrane.

8) Which of the following statements about ecosystems is *false*? 8) _____
A) In the process of energy conversions within an ecosystem, some energy is converted to heat.
B) Plants and other photosynthetic organisms are producers in ecosystems.
C) Chemical nutrients cycle within an ecosystem.
D) Bacteria and fungi recycle energy within an ecosystem.

9) The ultimate source of energy flowing into nearly all ecosystems is 9) _____
A) wind. B) radioactivity. C) electricity. D) sunlight.

10) In an ecosystem, energy 10) _____
A) comes ultimately from bacteria.
B) cycles along with chemical nutrients.
C) typically flows from consumers to producers to decomposers.
D) typically flows from producers through a series of consumers.

11) Which of the following statements about genetics is *true*? 11) _____
A) Each DNA molecule is a single strand of nucleotides.
B) DNA is made up of six different kinds of nucleotides.
C) Genes are proteins that produce DNA.
D) Differences among organisms reflect different nucleotide sequences in their DNA.

12) Organisms that are prokaryotes are in the domains 12) _____
A) Fungi and Bacteria. B) Bacteria and Archaea.
C) Plantae and Animalia. D) Eukarya and Archaea.

13) Which of the following statements about the domain Bacteria is *true*? 13) _____
A) All bacteria are multicellular organisms.
B) All bacteria have a membrane–bound nucleus.
C) All bacteria lack a nucleus.
D) Archaea belong to this domain.

14) Members of the kingdom Animalia 14) _____
A) make their own food through photosynthesis.
B) can obtain their food either by absorption or by photosynthesis.
C) can obtain their food by eating other organisms.
D) are composed of cells that lack a cell membrane.

15) Kingdom Fungi includes species 15) _____
A) such as mushrooms and plants.
B) that obtain food by decomposing dead organisms and absorbing the nutrients.
C) that use photosynthesis to obtain food.
D) that obtain food by ingestion.

16) Which of the following is a kingdom within the domain Eukarya? 16) _____
A) Bacteria B) Archaea C) Fungi D) Viruses

17) All organisms belonging to the kingdom Plantae 17) _____
A) are unicellular and lack a nucleus.
B) are multicellular and lack a nucleus.
C) are photosynthetic.
D) obtain food by decomposing the remains of dead organisms and absorbing the nutrients.

18) 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 18) _____
A) a food web.
B) a result of natural selection only.
C) a result of natural selection as well as the connection between form and function.
D) the connection between form and function only.

19) Which of the following statements is *not* consistent with Darwin's theory of natural selection? 19) _____
A) Factors in the environment result in some organisms having better reproductive success than others.
B) Individuals in a population exhibit variations, some of which are passed from parents to offspring.
C) Individual organisms exhibit genetic change during their life spans to better fit their environment.
D) Natural selection can lead to the appearance of new species.

20) An antibiotic kills 99.9% of a bacterial population. You would expect the next generation of bacteria 20) _____
A) to be just as susceptible to that antibiotic as was the previous generation.
B) to die out due to the drastic decrease in population size.
C) to be more contagious than the prior generation.
D) to be more resistant to that antibiotic.

21) Which of the following statements about evolution is *true*? 21) _____
A) Organisms evolve structures in response to needs.
B) Individuals evolve within the span of their own lifetimes.
C) Evolution is deliberate and purposeful.
D) Evolution can result in adaptations.

22) Consider the following statement: "If all vertebrates have backbones, and turtles are vertebrates, then turtles have backbones." This statement is an example of 22) _____
A) a hypothesis. B) inductive reasoning.
C) deductive reasoning. D) rationalization.

23) A hypothesis is 23) _____
A) a widely accepted idea about a phenomenon.
B) an explanatory idea that is broad in scope and supported by a large body of evidence.
C) a proposed explanation for a set of observations.
D) the same as a theory.

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

25) A theory is 25) _____
A) an explanation of an idea that is broad in scope and supported by a large body of evidence.
B) a concept in the early stages that still needs to be tested.
C) a description of a belief that invokes the supernatural.
D) an idea that has been proven.

26) To be scientifically valid, a hypothesis must be 26) _____
A) testable and falsifiable.
B) controlled.
C) reasonable.
D) part of a theory.

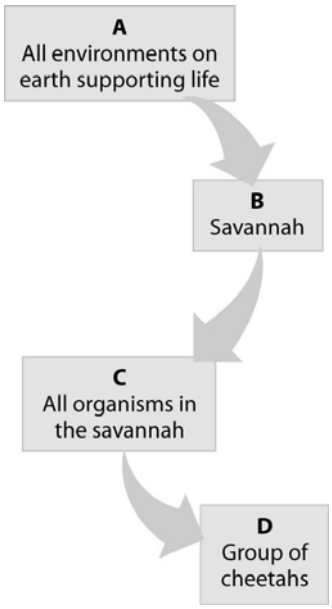
27) The role of a control in an experiment is to 27) _____
A) ensure repeatability.
B) provide a basis of comparison to the experimental group.
C) prove that a hypothesis is correct.
D) counteract the negative effect of the experiment.

28) A scientist performs a controlled experiment. This means that 28) _____
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.

29) Which of the following best represents an example of technology? 29) _____
A) sequencing the human genome
B) developing a test for genetic diseases
C) figuring out what mountain gorillas eat
D) identifying the cause of a new contagious disease

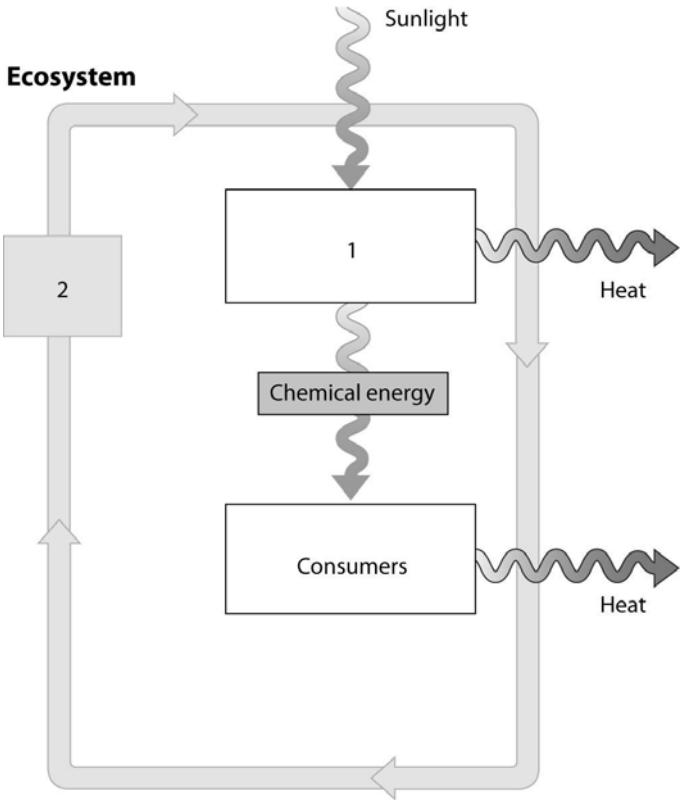
30) Which of the following is *not* an example of evolution that has resulted from human activity? 30) _____
A) Because of hunting, species such as bears and wolves are in danger of extinction.
B) Some insect species are now resistant to pesticides.
C) Many strains of bacteria are now resistant to some commonly used antibiotics.
D) Like certain other crops, domesticated strawberries are larger than wild strawberries.

31) Which level in the hierarchy shown is a community? 31) _____



A) level A B) level B C) level C D) level D

32) Which of the following organisms belongs to the group represented in Box 1? 32) _____



A) giraffe B) decomposing bacteria
C) tree D) leopard

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.

33) Which was the experimental group? 33) _____

A) Group A only
B) Group B only
C) all 3,000 volunteers
D) the researchers that inserted the cold virus

34) To have confidence that the results of the experiment were valid, you'd also want to know 34) _____

A) whether the volunteers all worked for the same company.
B) whether the volunteers exercised daily.
C) what the volunteers ate during the experiment.
D) whether any volunteers had colds at the start of the experiment.

Answer Key
Testname: UNTITLED1

1) D
Topic: 1.1
Skill: Knowledge/Comprehension

2) A
Topic: 1.2
Skill: Knowledge/Comprehension

3) C
Topic: 1.2
Skill: Knowledge/Comprehension

4) B
Topic: 1.2
Skill: Application/Analysis

5) D
Topic: 1.2
Skill: Application/Analysis

6) B
Topic: 1.3
Skill: Knowledge/Comprehension

7) D
Topic: 1.3
Skill: Application/Analysis

8) D
Topic: 1.4
Skill: Knowledge/Comprehension

9) D
Topic: 1.4
Skill: Knowledge/Comprehension

10) D
Topic: 1.4
Skill: Knowledge/Comprehension

11) D
Topic: 1.5
Skill: Knowledge/Comprehension

12) B
Topic: 1.6
Skill: Knowledge/Comprehension

13) C
Topic: 1.6
Skill: Knowledge/Comprehension

14) C
Topic: 1.6
Skill: Knowledge/Comprehension

15) B
Topic: 1.6
Skill: Knowledge/Comprehension

16) C
Topic: 1.6
Skill: Knowledge/Comprehension

17) C
Topic: 1.6
Skill: Knowledge/Comprehension

18) C
Topic: 1.7
Skill: Application/Analysis

19) C
Topic: 1.7
Skill: Knowledge/Comprehension

20) D
Topic: 1.7
Skill: Application/Analysis

21) D
Topic: 1.7
Skill: Knowledge/Comprehension

22) C
Topic: 1.8
Skill: Knowledge/Comprehension

23) C
Topic: 1.8
Skill: Knowledge/Comprehension

24) D
Topic: 1.8
Skill: Knowledge/Comprehension

25) A
Topic: 1.8
Skill: Knowledge/Comprehension

26) A
Topic: 1.9
Skill: Knowledge/Comprehension

27) B
Topic: 1.9
Skill: Knowledge/Comprehension

28) B
Topic: 1.9
Skill: Knowledge/Comprehension

29) B
Topic: 1.10
Skill: Knowledge/Comprehension

30) A
Topic: 1.11
Skill: Knowledge/Comprehension

31) C
Topic: 1.2
Skill: Knowledge/Comprehension

32) C
Topic: 1.4
Skill: Application/Analysis

33) A
Topic: 1.9
Skill: Knowledge/Comprehension

34) D
Topic: 1.9
Skill: Application/Analysis