CHAPTER 1—INVITATION TO BIOLOGY

MULTIPLE CHOICE

1. Why did the scientists assume the plants and animals they encountered in the cloud forest on top of New Guinea's Foja Mountains had never been encountered by other humans before?
   a. these species were unknown to even the native peoples
   b. the animals were unafraid of humans
   c. they found some species that were thought to have been extinct for decades
   d. none of these answers are correct
   e. all of these answers are correct except d.
   ANS: E   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: THE SECRET LIFE OF EARTH

2. The current rate of extinctions is about ____ times faster than normal.
   a. 10
   b. 100
   c. 1000
   d. 100, 000
   e. 1, 000, 000
   ANS: C   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: THE SECRET LIFE OF EARTH

3. The species extinctions taking place today are being caused by ____ activities.
   a. human
   b. volcanic
   c. plate tectonic
   d. extraterrestrial
   e. geothermal
   ANS: A   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: THE SECRET LIFE OF EARTH

4. Which of the following represents the most correct order of the organization of life from the smallest unit to the largest?
   a. atoms → molecules → cells → organisms → populations → communities → ecosystems → biosphere
   b. atoms → molecules → cells → organisms → communities → populations→ ecosystems → biosphere
   c. atoms → molecules → cells → organisms → populations → ecosystems → communities → biosphere
   d. communities → biosphere → organisms → ecosystems → populations → cells → molecules → atoms
   e. biosphere → organisms → communities → ecosystems → populations → molecules → cells → atoms
   ANS: A   PTS: 1
   DIF: Difficult
   OBJ: Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

5. Which of the following organization levels is the least inclusive?
   a. population
   b. community
   c. cell
   d. atom
   e. molecule
   ANS: D   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

6. An ecosystem such as a forest in the Pacific Northwest of the United States is made up of
   a. plants, animals and fungi.
   b. organisms and nonliving things.
   c. rocks and minerals.
   d. plants, protozoa, and fungi.
   e. all of these.
   ANS: B   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

7. All of the following with one exception are part of an African savanna community. Select the exception.
   a. a pride of lions
   b. Elephant grass
   c. African wild dogs
   d. low fertility soils
   e. Zebras
   ANS: D   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge, Analysis
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS
   MSC: Select the exception

8. Which of the following molecules are molecules of life?

   I.   carbohydrates
   II.   proteins
   III. nucleic acids
   IV.   carbon

   a. I only
   b. I and II
   c. I and III
   d. I, II and III
   e. I, II, III and IV
   ANS: D   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

9. A population is composed of individuals of
   a. the same species.
   b. interacting species of different kinds.
   c. interacting species and nonliving things.
   d. a single species interacting with nonliving things.
   e. all species found in a given area.
   ANS: A   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge; Application
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

10. Living organisms are members of all of the levels listed below. However, soil is a component of
   a. the community.
   b. the population.
   c. the ecosystem.
   d. the biosphere.
   e. both the community and the biosphere.
   ANS: C   PTS: 1
   DIF: Difficult
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Analysis
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

11. Which of the following characteristics are shared by all living organisms?
   I.   organization into cells
   II.   adaptation to environmental change
   III. requirement for nutrients
   IV.   DNA housed in a nucleus

   a. I and II
   b. I and III
   c. II and III
   d. I, II, and III
   e. I, II, III, and IV
   ANS: D   PTS: 1
   DIF: Difficult
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

12. Which of the following is a basic component of all of the others?
   a. cells   d. organism
   b. organs   e. organ systems
   c. tissues
   ANS: A   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge,
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

13. Which of the following represents an activity within a population?
   a. a fox consuming a rabbit
   b. the absorption of nitrogen by bacteria and converting it to a form useful to plants
   c. a peacock spreading and shaking his feathers to attract a female
   d. moss growing on the north side of a large pine tree
   e. a virus causing rabies in a dog
   ANS: C   PTS: 1
   DIF: Difficult

OBJ: Bloom's Taxonomy: Knowledge/ Comprehension/ Analysis
TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

14. African elephants, lions, and zebras are all different species that can be viewed in zoos in separate enclosures. When they live together in an African savanna, they form a dynamic, interacting community. This dynamic living together of species is an example of a(n) _____ property.
   a. emerged
   b. expansive
   c. elaborate
   d. thermodynamic
   e. eclectic
   ANS: A   PTS: 1
   DIF: Difficult
   OBJ: Bloom's Taxonomy: Comprehension, Application, Analysis
   TOP: LIFE IS MORE THAN THE SUM OF ITS PARTS

15. All organisms fit into one of the two following categories.
   a. consumers and decomposers
   b. producers and decomposers
   c. producers and consumers
   d. scavengers and detritivores
   e. consumers and scavengers
   ANS: C   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: HOW LIVING THINGS ARE ALIKE

16. The dynamics of an ecosystem depends on two main processes:
   a. the cycling of energy and the unidirectional flow of nutrients.
   b. the unidirectional flow of energy and the cycling of nutrients.
   c. the multidirectional flow of both energy and nutrients.
   d. the unidirectional flow of both energy and nutrients.
   e. the cycling of both energy and nutrients.
   ANS: B   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: HOW LIVING THINGS ARE ALIKE

17. On a very hot day in summer, you go outside and take your temperature, it is 37 degrees Celsius. On another day, this time a very cold day in winter, you go outside and take your temperature, again it is 37 degrees Celsius. This example illustrates
   a. adaptation.
   b. cellular reproduction.
   c. respiration.
   d. homeostasis.
   e. digestion.
   ANS: D   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy: Evaluation
   TOP: HOW LIVING THINGS ARE ALIKE

18. The DNA molecule is most similar functionally to a
   a. pair of scissors.
   b. flash light battery.
   c. cookbook.
   d. ballpoint pen.
   e. craft kit of ceramic tiles.
   ANS: C   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge/ Analysis
   TOP: HOW LIVING THINGS ARE ALIKE

19. Living organisms are distinct from nonliving things by which of the following features?
   a. continuous energy inputs
   b. complex molecular structure
   c. DNA that guides functioning
   d. sensing and responding to change
   e. all of these except complex molecular structure
   ANS: E   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge
   TOP: HOW LIVING THINGS ARE ALIKE

20. Energy flow is one-way because
    a. all of the energy in an ecosystem stays constant
    b. the amount of energy a producer harvests is equal to the amount of energy consumers consume
    c. with each energy transfer, some energy escapes as heat
    d. energy cannot be created but it can be destroyed
    e. there is only one form of energy
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: knowledge, analysis
    TOP: HOW LIVING THINGS ARE ALIKE

21. Homeostasis is
    a. the ability to sense and response to change
    b. maintaining an internal environment within parameters that favor survival
    c. essential for all living things
    d. not found in nonliving things
    e. all of these
    ANS: E   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge, Analysis
    TOP: HOW LIVING THINGS ARE ALIKE

22. Which of the following statements is true concerning DNA?
    a. DNA carries hereditary information.
    b. DNA is responsible for the similarity of all living things.
    c. DNA is responsible for the differences between all living things.
    d. DNA guides development.
    e. All of these statements are true.
    ANS: E   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
        TOP: HOW LIVING THINGS ARE ALIKE

23. All known species can be grouped into three domains. What are they?
    a. prokaryotes, bacteria, and eukarya.
    b. prokaryotes, archaea, and eukarya.
    c. plantae, bacteria, and archaea.
    d. bacteria, archaea, and eukarya.
    e. bacteria, archaea, and protista.
    ANS: D   PTS: 1

    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: HOW LIVING THINGS DIFFER

24. Members of which of the following groups can be single-celled producers?
    a. plantae
    b. protista
    c. bacteria
    d. bacteria and protista
    e. bacteria and plantae
    ANS: D   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Application
    TOP: HOW LIVING THINGS DIFFER

25. Plants perform photosynthesis by using the energy of ____ to power production of sugars from ____ and ____ molecules.
    a. organic molecules; oxygen; water
    b. organic molecules; carbon dioxide; water
    c. sunlight; carbon dioxide and oxygen; water
    d. sunlight; oxygen; water
    e. sunlight; carbon dioxide; water
    ANS: E   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    TOP: HOW LIVING THINGS DIFFER

26. You look into a powerful microscope and see a single-celled organism that is very small, has a cell wall, and no nucleus. You conclude that this organism belongs to the domain,
    a. Eukarya.
    b. Eukarya or Archaea.
    c. Archaea.
    d. Bacteria.
    e. Arachea or Bacteria.
    ANS: E   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Comprehension, Application, Analysis
    TOP: HOW LIVING THINGS DIFFER

27. Which of the following organisms is a multi-celled producer?
    a. an oak tree
    b. Candida, a pathogenic fungus
    c. *E. coli*, a common intestinal bacterium
    d. a Siberian tiger
    e. more than one of these
    ANS: A   PTS: 1
    DIF: Easy
    OBJ: Bloom's taxonomy: Knowledge, Application
    TOP: HOW LIVING THINGS DIFFER

28. Which of the following is not a characteristic of fungi?
    a. all are eukaryotic
    b. all break down food internally
    c. most are multi-celled
    d. some form mushroom fruiting bodies
    e. some are single celled
    ANS: B   PTS: 1
    DIF: Moderate
    OBJ: Bloom's taxonomy: Knowledge
    TOP: HOW LIVING THINGS DIFFER

29. In which of the following groups does seaweed belong?
    a. protista
    b. plants
    c. fungi
    d. archaea
    e. bacteria
    ANS: A   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: HOW LIVING THINGS DIFFER

30. In the scientific name, *Pan paniscus*, *Pan* represents the name of the _____ while *paniscus* represents the name of the _____.
    a. family; species.
    b. family; genus.
    c. genus; species.
    d. species; genus.
    e. genus; family.
    ANS: C   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Application
    TOP: WHAT IS A SPECIES?

31. Who developed the two-part naming system scientists use today to classify newly found organisms?
    a. Charles Darwin
    b. Carolus Linnaeus
    c. Aristotle
    d. Alexander von Humboldt
    e. Ernst Mayer
    ANS: B   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: WHAT IS A SPECIES?

32. Which of the following is the correct order of taxa from most inclusive to least inclusive?
    a. domain, kingdom, phylum, class, order, family, genus, species
    b. domain, kingdom, phylum, order, class, family, genus, species
    c. domain, kingdom, phylum, family, order, class, genus, species
    d. domain, phylum, kingdom, class, order, family, genus, species
    e. domain, kingdom, order, class, phylum, family, genus, species
    ANS: A   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Moderate
    TOP: WHAT IS A SPECIES?

33. Taxonomists today tend to group organisms into the same category based on
    a. similar morphology
    b. similar behavior
    c. similar geographic distributions
    d. similar DNA sequences
    e. similar eating habits
    ANS: D   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Comprehension   TOP: WHAT IS A SPECIES?

34. The biological species concept developed by Ernst Mayr contains which of the following?
    a. individuals that can potentially interbreed
    b. individuals that produce fertile offspring
    c. individuals that do not interbreed with other groups
    d. all of these except e.
    e. none of these
    ANS: D   PTS: 1
    DIF: Moderate

OBJ: Bloom's taxonomy: Knowledge
TOP: WHAT IS A SPECIES?

35. Which level of taxonomy encompasses all of the others?
a. family
b. class
c. order
d. species
e. genus
ANS: B   PTS: 1
DIF: Difficult
OBJ: Bloom's Taxonomy: Knowledge/ Comprehension/ Application
TOP: WHAT IS A SPECIES?

36. Which of the following words describes a tentative explanation to a given question?
a. law
b. theory
c. hypothesis
d. fact
e. principle
ANS: C   PTS: 1
DIF: Moderate
OBJ: Bloom's Taxonomy: Knowledge
TOP: THE SCIENCE OF NATURE

37. In order to verify a hypothesis, scientists
a. perform experiments and/or make observations.
b. consider facts.
c. establish law.
d. develop theories.
e. make predictions.
ANS: A   PTS: 1
DIF: Easy
OBJ: Bloom's Taxonomy: Knowledge
TOP: THE SCIENCE OF NATURE

38. What is the right sequence of events applied in the scientific method?
a. question; hypothesis; observation; data; test; conclusion
b. observation; hypothesis; question; data; test; conclusion
c. observation; hypothesis; question; test; data; conclusion
d. observation; question; hypothesis; test; data; conclusion
e. question; hypothesis; data; observation; test; conclusion
ANS: D   PTS: 1

DIF: Moderate
OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Analysis
TOP: THE SCIENCE OF NATURE

39. An experimenter wanted to test the effects of cigarette smoking on rats. She infused the cages of 50 rats with cigarette smoke and the cages of another 50 rats with pure, clean air. The rats that received the clean air were the
a. experimental group.
b. control group.
c. model group.
d. predictive group.
e. independent group.
ANS: B   PTS: 1
DIF: Easy
OBJ: Bloom's taxonomy: Knowledge, Application
TOP: THE SCIENCE OF NATURE

40. In the Olestra experiment, the people who ate the Olestra potato chips were the
a. experimental group.
b. control group.
c. research group.
d. hypothetical group.
e. independent group.
ANS: A   PTS: 1
DIF: Easy
OBJ: Bloom's Taxonomy: Knowledge
TOP: THE SCIENCE OF NATURE

41. In the Olestra potato chip experiment, the result was
a. Olestra potato chips cause cramping.
b. potato chips without Olestra cause cramping.
c. there was no evidence that Olestra caused cramping.
d. watching movies cause cramping.
e. people should not eat potato chips.

ANS: C   PTS: 1
DIF: Easy
OBJ: Bloom's Taxonomy: Knowledge, Comprehension
TOP: THE SCIENCE OF NATURE

42. In the peacock butterfly experiment, what was the conclusion?
    a. predatory birds are not deterred from eating peacock butterflies with spots
    b. predatory birds are deterred by peacock butterfly clicking sounds
    c. peacock butterflies with spots mated more often than those without spots
    d. predatory birds are deterred by the dark color of the peacock butterfly
    e. peacock butterflies that made clicking sounds attracted more predatory birds
    ANS: B   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: THE SCIENCE OF NATURE

43. The final step in the scientific method for a scientist is
    a. devising an experiment
    b. collecting data
    c. making observations
    d. report his or her results
    e. researching the literature for similar investigations
    ANS: D   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Comprehension
    TOP: THE SCIENCE OF NATURE

44. Scientists perform ____ in order to ____ a given ____.
    a. experiments; test; hypothesis.
    b. tests; experiment; law.
    c. tests; experiment; variable.
    d. facts; test; variable.
    e. hypotheses; try; experiment.
    ANS: A   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: THE SCIENCE OF NATURE

45. A control group
    a. receives the same treatment as the experimental group.
    b. is an untreated group of individuals or subjects.
    c. is sometimes exposed to harsh conditions.
    d. is often an unnecessary waste of material.
    e. is not subjected to experimental error.
    ANS: B   PTS: 1
    DIF: Moderate

OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
TOP: THE SCIENCE OF NATURE

46. The control in an experiment
    a. makes the experiment valid.
    b. is an additional replicate for statistical purposes.
    c. reduces the experimental errors.
    d. minimizes experimental inaccuracy.
    e. allows a mixed group of comparisons among different organisms for the experimental group.
    ANS: E   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    TOP: THE SCIENCE OF NATURE

47. In the experiment with peacock butterflies the working hypothesis is that
    a. mimicry confuses both predator and prey.
    b. mimicry protects butterflies from being eaten by predatory birds.
    c. birds are capable of learning.
    d. birds are agents of evolution.
    e. unpalatable species display distinctive wings.
    ANS: B   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    TOP: THE SCIENCE OF NATURE

48. The variable(s) in the butterfly experiment is(are) the
    a. butterfly wings pattern color.
    b. butterfly species.
    c. butterfly wings pattern color and sounds emitted.
    d. rainforest region used.
    e. percentage of survivors.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    TOP: THE SCIENCE OF NATURE

49. How did the control group differ from the experimental group in the butterfly experiment?
    a. They were different species.
    b. Their native habitat of the forest differed.
    c. They were spotless and soundless.
    d. They tasted worse.
    e. They preferred different flowers species.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    TOP: THE SCIENCE OF NATURE

50. A result is statistically significant if
    a. it is unlikely to have occurred by chance.
    b. it is likely to have occurred by chance.
    c. it is likely to have occurred in 50% of the cases.
    d. it is consistent with predictions.
    e. it is widely accepted.
    ANS: A   PTS: 1
    DIF: Difficult
    OBJ: Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    TOP: ANALYZING EXPERIMENTAL RESULTS

51. In science, all results
    a. are accepted as fact.
    b. are only hypotheses.
    c. have a probability of being incorrect.
    d. must be consistent with previous knowledge.
    e. are uncritically accepted by other scientists.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Analysis
    TOP: ANALYZING EXPERIMENTAL RESULTS

52. Sampling error can be minimized by one or more of the following.
    a. using a large sample.
    b. conducting the experiment or observation only once.
    c. throwing out data that does not fit the conclusion.
    d. using a small subset of a larger population.
    e. more than one of these can minimize sampling error.
    ANS: A   PTS: 1

DIF: Moderate
OBJ: Bloom's Taxonomy: Knowledge, Comprehension
TOP: ANALYZING EXPERIMENTAL RESULTS

53. In science, if a result is deemed statistically significant, that means
    a. it is a very important result.
    b. it has a high probability of being incorrect.
    c. it has a low probability of being skewed by sampling error.
    d. there is very little variation in the data.
    e. there is no doubt of the result being true.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Comprehension
    TOP: ANALYZING EXPERIMENTAL RESULTS

54. Error bars on a graph indicate
    a. places where the data is likely wrong.
    b. places where the researcher is unsure of her results.
    c. variation in results that cannot be accounted for.
    d. variation in a set of data around the average.
    e. poor experimental technique on the part of the researcher.
    ANS: D   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge
    TOP: ANALYZING EXPERIMENTAL RESULTS

55. Scientists attempt to avoid bias by which of the following?
    a. designing quantative experiments
    b. experiments repeated by other scientists
    c. publicly publishing their results
    d. controlled as many variables as possible
    e. all of these are attempts to avoid bias.
    ANS: E   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge, Synthesis
    TOP: ANALYZING EXPERIMENTAL RESULTS

56. A scientific theory
    a. is widely accepted and supported by several evidences.
    b. is widely accepted but not necessarily supported by several evidences.
    c. is sometimes accepted and supported by several evidences.
    d. is sometimes accepted and not necessarily supported by several evidences.
    e. is always a "truth."
    ANS: A   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    TOP: THE NATURE OF SCIENCE

57. Evolution has been tested in various ways. Genetic, fossil, anatomical, physiological and behavioral studies all confirm that evolution is the mechanism of the origin of species. Thus, in science evolution is considered a scientific
    a. fact
    b. hypothesis
    c. law
    d. theory
    e. guess
    ANS: D   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge, Comprehension, Application
    TOP: THE NATURE OF SCIENCE

58. In science, a theory is defined as
    a. a speculative guess.
    b. a hypothesis.
    c. an explanation that is well documented and consistent with the evidence.
    d. a description of a phenomenon for which there is no explanation.
    e. a personal conviction.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's taxonomy: Knowledge, Comprehension
    TOP: THE NATURE OF SCIENCE

Selecting the Exception

59. All of the following are characteristics of ALL living organisms with one exception. Select the exception.
    a. complex structural organization
    b. homeostasis
    c. cells as their basic units
    d. the ability to derive energy from inorganic sources
    e. capacity to evolve
    ANS: D   PTS: 1
    DIF: Difficult
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    MSC: Selecting the Exception

60. All of the following do NOT depend directly on sunlight or other inorganic sources for energy with one exception. Select the exception
    a. producers only
    b. consumers and decomposers
    c. consumers only
    d. decomposers only
    e. producers and consumers
    ANS: B   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge
    MSC: Selecting the Exception

61. All of the following statements about bacteria are correct with one exception. Select the exception.
    a. Bacteria are always single-celled organisms.
    b. Bacteria have DNA that is not enclosed in a nucleus.
    c. All bacteria are eukaryotes.
    d. Some bacteria can live in extreme environments.
    e. Some bacteria are producers while others are consumers.
    ANS: C   PTS: 1
    DIF: Difficult
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    MSC: Selecting the Exception

62. All of the following statements are true about eukaryotes with one exception. Select the exception.
    a. eukaryotes have a nucleus.
    b. eukaryotes are similar to prokaryotes at a molecular level.
    c. eukaryotes are sometimes unicellular organisms.
    d. eukaryotes are similar to prokaryotes at a structural level.
    e. eukaryotes include plants, fungi, and protists.
    ANS: D   PTS: 1
    DIF: Difficult
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    MSC: Selecting the Exception

63. All of the following are organisms within the domain eukarya with one exception. Select the exception.
    a. bacteria.
    b. animals.
    c. protists.
    d. fungi.
    e. plants.
    ANS: A   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    MSC: Selecting the Exception

64. All of the following are used in the development of science except one. Select the exception.
    a. evaluation of data
    b. personal conviction
    c. prediction
    d. systematic observation
    e. experiments
    ANS: B   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    MSC: Selecting the Exception

65. All of the following are used to construct a theory with one exception. Select the exception.
    a. repetitions of experiments.
    b. increased observations.
    c. time.
    d. faith.
    e. confirmation by many scientists.
    ANS: D   PTS: 1
    DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge
    MSC: Selecting the Exception

66. All of the following are correct statements about sampling error, except one. Select the exception.
    a. Repeating an experiment many times has the same effect on sampling error as working on a large sample.
    b. A large sample would help minimize sampling error.
    c. Sampling error is increased when a sample size is small.
    d. A sampling error results from a mistake made by a researcher during experimentation.
    e. Sampling error is the difference between results derived from testing an entire group of individuals, and results derived from testing of a subset of the group.
    ANS: D   PTS: 1
    DIF: Difficult
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension | Bloom's Taxonomy: Analysis
    MSC: Selecting the Exception

67. All the statements below are correct with one exception. Select the exception.
    a. Most animals are mobile at some stage in their lives.
    b. Protists are the simplest of the eukaryotes.
    c. All known plants rely on other organisms for energy.
    d. All bacteria are single-celled.
    e. All fungi break down their food externally.
    ANS: C   PTS: 1
    DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
    MSC: Select the exception

68. All of the following statements concerning Archaea are correct with one exception. Select the exception.
   a. all are single-celled
   b. all have DNA
   c. none have a nucleus
   d. they are most closely related to bacteria
   e. some are producers
   ANS: D   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge, Comprehension
   MSC: Selecting the exception

69. Science involves all of the following with one exception. Select the exception.
   a. the systematic study of the observable world.
   b. using objective evidence to study objects and events.
   c. collecting data.
   d. devising observations and experiments to test predictions.
   e. using the personal biases of the experimenter to draw conclusions..
   ANS: E   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
   MSC: Selecting the exception

70. Critical thinking implies all of the following with one exception. Select the exception.
   a. being aware of your own biases and that of others.
   b. deciding whether ideas are based on opinion or evidence.
   c. judging information before accepting it.

   d. considering other ways to interpret the facts.
   e. accepting whatever information is provided so long as it does not contradict your beliefs.
   ANS: E   PTS: 1
   DIF: Easy
   OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Comprehension
   MSC: Selecting the exception

71. With one exception, members of the same species always share the following things. Select the exception.
   a. morphology
   b. biochemistry
   c. behavioral traits
   d. geography
   e. the same genus
   ANS: D   PTS: 1
   DIF: Moderate
   OBJ: Bloom's Taxonomy: Knowledge, Comprehension
   MSC: Selecting the exception

72. One of the following is not a part of its paired term. Choose the exception.
   a. atom; organism
   b. community; ecosystem
   c. population; cell
   d. molecule; biosphere
   e. species; community
   ANS: C   PTS: 1
   DIF: Difficult
   OBJ: Bloom's Taxonomy: Comprehension, Application
   MSC: Selecting the exception

MATCHING

Based on the Olestra potato chip experiment, match the following letters to the number with which they best correspond.
   a. Observation
   b. Hypothesis
   c. Prediction
   d. Experiment
   e. Control group
   f. Experimental group
   g. The variable
   h. Assess results
   i. Conclusion

73. People who eat potato chips with Olestra will be more likely to get intestinal cramps than those who eat potato chips made without Olestra.
74. Olestra.

75. Percentages are about equal. Therefore, Olestra is not the cause of intestinal cramps observed in some people who have ingested Olestra-containing food.
76. Olestra causes intestinal cramps.
77. A set of people got regular potato chips.
78. 1,100 people between the ages of thirteen and thirty-eight were asked to watch a movie and eat potato chips.
79. Some people complained of intestinal problems after eating chips containing Olestra.
80. A subset of people got Olestra-containing chips.
81. In the control group, 17.6% of people get cramps later, while in the experimental group, 15.8% of people get cramps later.

73. ANS: C   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
74. ANS: G   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
75. ANS: I   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
76. ANS: B   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
77. ANS: E   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
78. ANS: D   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
79. ANS: A   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
80. ANS: F   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis
81. ANS: H   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Application | Bloom's Taxonomy: Synthesis

Classification. Answer the following questions in reference to the levels of organization of life. Choose only the most correct answer.

a. population
b. living cells
c. molecules
d. biosphere
e. ecosystem
f. organs
g. tissues
h. community

82. Lions, zebras, African tall grass, soil, and air are all a part of one of these.
83. A collection of cells performing a common function.
84. In a South American tropical forest, the trees, flowers, and animals constitute one of these.
85. Atoms held together by chemical bonds.
86. These are the smallest units of an organism that are able to perform all functions of life.
87. These are more inclusive than cells but less than organs.
88. This includes all of the ecosystems on earth.
89. These are the sites for the production of all life's molecules.
90. A herd of horses living on the Montana plains is an example of this.
91. A one-way flow of energy and cycling of nutrients is essential for its dynamic.

82. ANS: E   PTS: 1   DIF: Easy
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
83. ANS: G   PTS: 1   DIF: Moderate
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
84. ANS: H   PTS: 1   DIF: Moderate
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
85. ANS: C   PTS: 1   DIF: Difficult
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
86. ANS: B   PTS: 1   DIF: Easy
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
87. ANS: F   PTS: 1   DIF: Moderate
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
88. ANS: D   PTS: 1   DIF: Difficult
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
89. ANS: B   PTS: 1   DIF: Difficult
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
90. ANS: A   PTS: 1   DIF: Easy
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification
91. ANS: E   PTS: 1   DIF: Difficult
      OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
      Synthesis   MSC: Classification

Classification. Answer the following questions in reference to life's diversity. Choose only the most correct answer.

a. archaea   e. fungi
b. bacteria   f. animalia
c. eukarya   g. protists
d. plantae

92. Often found in extreme environments while having no nucleus, this domain is closer genetically to eukarya.
93. In this eukaryotic group, members range from single-celled consumers to giant, multi-celled producers.
94. Multi-celled consumers that are active at least in part of their lives are in this kingdom.
95. They have no nucleus and are the most numerous organisms on Earth.
96. Yeasts belong to this group.
97. In this domain members have a nucleus and numerous membrane-bound organelles.
98. These prokaryotes are able to colonize extreme environments such as hydrothermal vents on the seafloor.
99. Besides feeding themselves, these multi-celled organisms, serve as food for most other organisms.
100. These multi-celled consumers include herbivores and carnivores.
101. In this kingdom, multi-celled organisms digest their food outside of their bodies.

92. ANS: A   PTS: 1   DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
93. ANS: G   PTS: 1   DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
94. ANS: F   PTS: 1   DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
95. ANS: B   PTS: 1   DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
96. ANS: E   PTS: 1   DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
97. ANS: C   PTS: 1   DIF: Moderate
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
98. ANS: A   PTS: 1   DIF: Difficult
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
99. ANS: D   PTS: 1   DIF: Easy
    OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
    Synthesis   MSC: Classification
100. ANS: F   PTS: 1   DIF: Easy
     OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
     Synthesis   MSC: Classification
101. ANS: E   PTS: 1   DIF: Difficult
     OBJ: Bloom's Taxonomy: Knowledge | Bloom's Taxonomy: Application | Bloom's Taxonomy:
     Synthesis   MSC: Classification