

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

- 1) What is a localized group of organisms that belong to the same species called? 1) _____
A) family
B) population
C) community
D) ecosystem
E) biosystem
- 2) Organisms interact with their environments, exchanging matter and energy. For example, what do plant chloroplasts convert the energy of sunlight into? 2) _____
A) oxygen
B) the energy of motion
C) carbon dioxide and water
D) kinetic energy
E) the chemical energy of chemical bonds
- 3) What does the main source of energy for producers in an ecosystem come from? 3) _____
A) the atmosphere
B) plants
C) water
D) solar energy
E) other animals as a food source
- 4) Which of the following types of cells utilize deoxyribonucleic acid (DNA) as their genetic material but do *not* have their DNA encased within a nucleus? 4) _____
A) archaea B) plant C) fungi D) animal E) protists
- 5) To understand the chemical basis of inheritance, we must understand the molecular structure of DNA. This is an example of the application of which concept to the study of biology? 5) _____
A) reductionism
B) the cell theory
C) feedback regulation
D) emergent properties
E) evolution
- 6) Once labour begins in childbirth, contractions increase in intensity and frequency until delivery. The increasing labour contractions of childbirth are an example of which type of regulation? 6) _____
A) enzymatic catalysis
B) negative feedback
C) a bioinformatic system
D) positive feedback
E) feedback inhibition

- 7) When the body's blood glucose level rises, the pancreas secretes insulin and, as a result, the blood glucose level declines. When the blood glucose level is low, the pancreas secretes glucagon and, as a result, the blood glucose level rises. What is this regulation of the blood glucose level the result of? 7) _____
- A) bioinformatic regulation
 - B) catalytic feedback
 - C) negative feedback
 - D) positive feedback
 - E) protein-protein interactions
- 8) Which technology can analyze many biological samples very rapidly? 8) _____
- A) proteomics
 - B) schematic biology
 - C) genomics
 - D) bioinformatics
 - E) evolution
- 9) Prokaryotes are classified as belonging to two different domains. What are the domains? 9) _____
- A) Eukarya and Monera
 - B) Bacteria and Protista
 - C) Bacteria and Eukarya
 - D) Bacteria and Archaea
 - E) Archaea and Monera
- 10) Global warming, as demonstrated by observations such as melting of glaciers, increasing CO₂ levels, and increasing average ambient temperatures, has already had many effects on living organisms. Which of the following might best offer a solution to this problem? 10) _____
- A) Limit the burning of fossil fuels and regulate our loss of forested areas.
 - B) Recycle as much as possible.
 - C) Increase the abilities of animals to migrate to more suitable habitats.
 - D) Continue to measure these and other parameters of the problem.
 - E) Do nothing; nature will attain its own balance.
- 11) A water sample from a hot thermal vent contained a single-celled organism that but lacked a nucleus. What is its most likely classification? 11) _____
- A) Protista B) Animalia C) Eukarya D) Archaea E) Fungi
- 12) A filamentous organism has been isolated from decomposing organic matter. This organism has organelles and a cell wall but no chloroplasts. How would you classify this organism? 12) _____
- A) domain Eukarya, kingdom Protista
 - B) domain Bacteria, kingdom Prokaryota
 - C) domain Archaea, kingdom Bacteria
 - D) domain Eukarya, kingdom Fungi
 - E) domain Eukarya, kingdom Plantae
- 13) Which of these provides evidence of the common ancestry of all life? 13) _____
- A) structure of the nucleus
 - B) near universality of the genetic code
 - C) structure of chloroplasts
 - D) ubiquitous use of catalysts by living systems
 - E) structure of cilia

- 14) Which of the following is (are) *true* of natural selection? 14) _____
- A) It involves differential reproductive success.
 - B) It results in descent with modification.
 - C) It requires genetic variation, results in descent with modification, and involves differential reproductive success.
 - D) It results in descent with modification and involves differential reproductive success.
 - E) It requires genetic variation.
- 15) Charles Darwin proposed a mechanism for descent with modification that stated that organisms of a particular species are adapted to their environment when they possess which of the following? 15) _____
- A) inheritable traits that enhance their survival and reproductive success in the local environment
 - B) non-inheritable traits that enhance their reproductive success in the local environment
 - C) non-inheritable traits that enhance their survival and reproductive success in the local environment
 - D) inheritable traits that decrease their survival and reproductive success in the local environment
 - E) non-inheritable traits that enhance their survival in the local environment
- 16) Which of these individuals is likely to be most successful in an evolutionary sense? 16) _____
- A) an organism that lives 100 years and leaves two offspring, both of whom survive to reproduce
 - B) a male who mates with 20 females and fathers one offspring
 - C) a female who mates with 20 males and produces one offspring that lives to reproduce
 - D) a reproductively sterile individual who never falls ill
 - E) an organism that dies after five days of life but leaves 10 offspring, all of whom survive to reproduce
- 17) In a hypothetical world, every 50 years people over 6 feet tall are eliminated from the population before they reproduce. Based on your knowledge of natural selection, what would you predict about how the average height of the human population will change over time? 17) _____
- A) Average height will rapidly increase.
 - B) Average height will gradually decline.
 - C) Average height will rapidly decline.
 - D) Average height will remain unchanged.
 - E) Average height will gradually increase.
- 18) Through time, the lineage that led to modern whales shows a change from four-limbed land animals to aquatic animals with two limbs that function as flippers. Which of the following explains this change? 18) _____
- A) natural philosophy
 - B) feedback inhibition
 - C) the hierarchy of the biological organization of life
 - D) natural selection
 - E) creationism
- 19) Which of the following statements is *true*? 19) _____
- A) All eukarya belong to one domain.
 - B) Only organisms that produce their own food belong to one of the domains.
 - C) A kingdom can include several subgroups known as domains.
 - D) The importance of fungi has led scientists to make them the whole of one domain.
 - E) All prokaryotes belong to one domain.

- 20) What is the name of the process by which the information in a gene directs the synthesis of a protein? 20) _____
- A) transcription
 - B) post translation modification
 - C) cloning
 - D) gene expression
 - E) replication
- 21) Why is Darwin considered original in his thinking? 21) _____
- A) He provided examples of organisms that had evolved over time.
 - B) He proposed the mechanism that explained how evolution takes place.
 - C) He demonstrated that evolution is continuing to occur now.
 - D) He observed that organisms produce large numbers of offspring.
 - E) He described the relationship between genes and evolution.
- 22) Darwin's finches, collected from the Galápagos Islands, illustrate which of the following? 22) _____
- A) vestigial anatomic structures
 - B) ancestors from different regions
 - C) adaptive radiation
 - D) mutation frequency
 - E) the accuracy of the fossil record
- 23) When your body temperature rises on a hot day, the neural and hormonal mechanisms activate sweating. Evaporation of sweat leads to cooling of the body surface. What is this an example of? 23) _____
- A) negative feedback regulation
 - B) chemical regulation
 - C) emergent properties
 - D) positive feedback regulation
 - E) chemical cycling
- 24) According to Darwinian theory, which of the following exhibits the greatest likelihood for evolutionary success? 24) _____
- A) the species with the longest life
 - B) the organism that produces its own nutrients most efficiently
 - C) the individuals within a population that have the greatest reproductive success
 - D) the community of organisms that is capable of living in the most nutrient-poor environment
 - E) the genus with members that occupy the greatest number of habitats
- 25) Which of the following do humans and roses have in common? 25) _____
- A) Humans and roses have nothing in common.
 - B) They are both producers.
 - C) Both are multicellular.
 - D) Both are prokaryotic.
 - E) Both lack a membrane-bound nucleus inside their cells.

- 26) Why is the theme of evolution considered to be the core theme of biology by biologists? 26) _____
- A) Since it cannot be proven, biologists will be able to study evolutionary possibilities for many years.
 - B) Biologists do not subscribe to alternative models.
 - C) It provides a framework within which all biological investigation makes sense.
 - D) It is recognized as the core theme of biology by organizations such as the National Science Foundation.
 - E) Controversy about this theory provides a basis for a great deal of experimental research.
- 27) The method of scientific inquiry that draws conclusions from careful observation and the analysis of data is known as which of the following? 27) _____
- A) hypothesis-based science
 - B) quantitative science
 - C) qualitative science
 - D) inductive reasoning
 - E) deductive reasoning
- 28) When applying the process of science, which of these is specifically tested? 28) _____
- A) a result
 - B) a question
 - C) a prediction
 - D) a hypothesis
 - E) an observation
- 29) Which of the following describes a controlled experiment? 29) _____
- A) There are at least two groups, one of which does not receive the experimental treatment.
 - B) The experiment is repeated many times to ensure that the results are accurate.
 - C) There is one group for which the scientist controls all variables.
 - D) The experiment proceeds at a slow pace to guarantee that the scientist can carefully observe all reactions and process all experimental data.
 - E) There are at least two groups, one differing from the other by two or more variables.
- 30) Why is it important that an experiment include a control group? 30) _____
- A) A control group is required for the development of an "If...then" statement.
 - B) The control group is the group that the researcher is in control of, the group in which the researcher predetermines the results.
 - C) A control group assures that an experiment will be repeatable.
 - D) Without a control group, there is no basis for knowing if a particular result is due to the variable being tested.
 - E) The control group provides a reserve of experimental subjects.
- 31) Which of the following describes the application of scientific knowledge for some specific purpose? 31) _____
- A) deductive science
 - B) pure science
 - C) technology
 - D) anthropologic science
 - E) inductive science

- 32) Which of the following are qualities of any good scientific hypothesis? 32) _____
- I. It is testable.
 - II. It is falsifiable.
 - III. It produces quantitative data.
 - IV. It produces results that can be replicated.
- A) I only B) II only C) III only D) I and II E) III and IV
- 33) When a hypothesis cannot be written in an "If...then" format, what does this mean? 33) _____
- A) The subject cannot be explored scientifically.
 - B) The hypothesizer does not have sufficient information.
 - C) It cannot be testable.
 - D) It does not represent deductive reasoning.
 - E) It cannot be a scientific hypothesis.
- 34) Which of the following is the best description of a control for an experiment? 34) _____
- A) The control group is matched with the experimental group except for the one experimental variable.
 - B) Only the experimental group is tested or measured.
 - C) The control group is kept in an unchanging environment.
 - D) The control group is exposed to only one variable rather than several.
 - E) The control is left alone by the experimenters.
- 35) Given the cooperativity of science, which of the following is most likely to result in an investigator being intellectually looked down upon by other scientists? 35) _____
- A) Doing meticulous experiments that show data that contradict what has been previously reported by the scientific community.
 - B) Getting negative results from the same set of experiments.
 - C) Making money as the result of studies in which a new medication is discovered.
 - D) Spending most of a lifetime investigating a small and seemingly unimportant organism.
 - E) Being found to have falsified or created data to better fit a hypothesis.
- 36) Which of these is an example of inductive reasoning? 36) _____
- A) Hundreds of individuals of a species have been observed and all are photosynthetic; therefore, the species is photosynthetic.
 - B) These organisms live in sunny parts of this area so they are able to photosynthesize.
 - C) If two species are members of the same genus, they are more alike than each of them could be to a different genus.
 - D) If protists are all single-celled, then they are incapable of aggregating.
 - E) If horses are always found grazing on grass, they can be only herbivores and not omnivores.
- 37) In a high school laboratory, which of the following constitutes an experiment? 37) _____
- I. learning to use a microscope by examining fixed specimens on slides
 - II. being able to examine swimming protists under a microscope
 - III. extracting pigments from plant leaves and separating the types of pigments for identification
 - IV. preparing root tips for examination by staining them
- A) I only
B) II only
C) III only
D) II and III only
E) II, III, and IV

- 38) Which of the following best describes a model organism? 38) _____
- A) It is small, inexpensive to grow, and lives a long time.
 - B) It is often pictured in textbooks and easy for students to imagine.
 - C) It is well studied, easy to grow, and results are widely applicable.
 - D) It has been chosen for study by the earliest biologists.
 - E) It lends itself to many studies that are useful to beginning students.
- 39) Why is a scientific topic best discussed by people of varying points of view, a variety of subdisciplines, and diverse cultures? 39) _____
- A) This is another way of making science more reproducible.
 - B) Scientists need to exchange their ideas with other disciplines and cultures so that all groups are in consensus with the course of future research.
 - C) Robust and critical discussion between diverse groups improves scientific thinking.
 - D) They can rectify each other's approach to make it truly scientific.
 - E) Scientists can explain to others that they need to work in isolation to utilize the scientific method more productively.
- 40) What does the observation that a whale's front flippers have the same bone structure as all mammalian forelimbs suggest? 40) _____
- A) Whales once walked on land.
 - B) All mammals descended from a common ancestor.
 - C) There must have been land and aquatic ancestors that coevolved.
 - D) Land mammals originally came from the sea.
 - E) Whales show remarkable diversity.
- 41) Which of the following best describes the search for information and explanations of natural phenomena? 41) _____
- A) hypothesis formation
 - B) deduction
 - C) non-scientific interest
 - D) curiosity
 - E) scientific inquiry
- 42) When you conduct research at a community level, you are generally interested in which major biological theme? 42) _____
- A) Structure and function are correlated at all levels of biological organization.
 - B) Life requires energy transfer and transformation.
 - C) New properties emerge at each level in the biological hierarchy.
 - D) Evolution accounts for the unity of diversity of life.
 - E) Organisms interact with other organisms and the physical environment.
- 43) Which of the following theme(s) does research into evolutionary adaptation consider? 43) _____
- A) Organisms interact with other organisms and the physical environment.
 - B) The continuity of life is based on heritable information in the form of DNA.
 - C) Structure and function are correlated at all levels of biological organization.
 - D) All of the above are considered in this form of research.
 - E) None of the above apply to evolution.

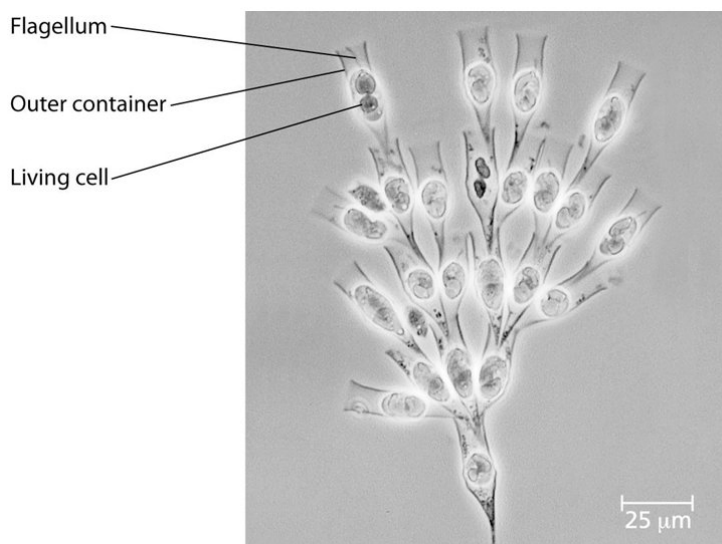
44) In what sense does the comment "the whole is greater than the sum of its parts" apply to biology?

44) _____

- A) The basic unit in biological systems is cells and they must be combined to make more complex organisms.
- B) Cooperation and interdisciplinary research allows us to understand systems rather than just parts of the system.
- C) This statement has nothing to do with biology.
- D) As we move up through biological levels, the systems become more complex.
- E) As we move up through biological levels, novel properties emerge that could not be identified at lower levels.

Use the following information to answer the questions below.

Golden algae are a group of photosynthetic protists whose colour is due to carotenoid pigments: yellow and brown. A group of students was given a significant sample of golden algae (*Dinobryon*); this algae is colonial and has flagella. Their instructions for the project were to design two or more experiments that could be done with these organisms.



45) Since these organisms are protists, which of these characteristics could the students assume to be true?

45) _____

- A) All of them are marine.
- B) They have membrane-bound organelles.
- C) The organisms are photosynthetic.
- D) They are single-celled.
- E) Each has a single circular molecule of DNA.

46) The students decide that for one of their experiments, they want to see whether the organisms can photosynthesize. Which of the following is the best hypothesis?

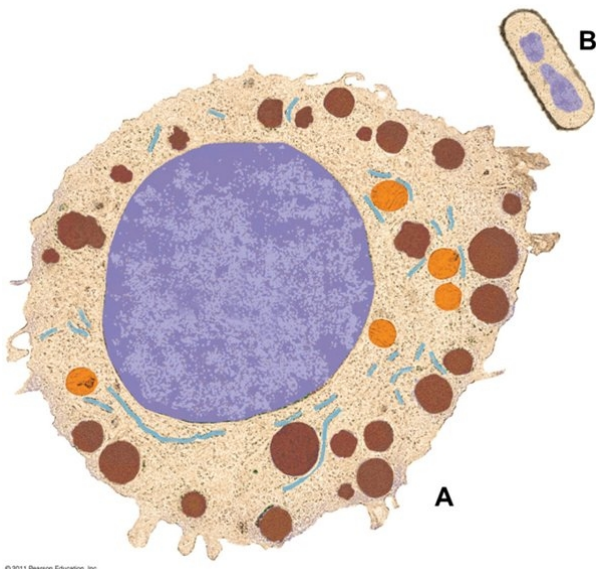
46) _____

- A) If the *Dinobryon* are kept in the dark, one-half will be expected to die in 5 days.
- B) If the *Dinobryon* photosynthesize, they must need no other minerals or nutrients and will be able to live in distilled water and light alone.
- C) If the *Dinobryon* are able to photosynthesize, the students should be able to extract photosynthetic pigments.
- D) If the *Dinobryon* can live > 5 days without added food, they must be able to photosynthesize.
- E) If the *Dinobryon* can live without exposure to light for > 5 days, they must be able to photosynthesize.

- 47) For their second experiment, the students want to know whether the *Dinobryon* have to live in colonies or can be free living. How might they proceed? 47) _____
- A) Divide a sample into single cells and measure the length of time they remain this way.
 - B) Observe whether only specialized cells are able to divide to produce new colonies.
 - C) Divide a sample into single cells and see whether they come back together.
 - D) Observe each day to see whether new organisms are ever reproduced as single cells.
 - E) Divide a sample into single cells and observe them.

- 48) The students plan to gather data from the project. Which of the following would be the best way to present what they gather from experimental groups as opposed to controls? 48) _____
- A) counting the number of new colonies after a week
 - B) measuring the dry weight of all new colonies in grams
 - C) measuring the number of new colonies formed during every 12-hour period
 - D) qualitatively, noting colour, size, and so on
 - E) measuring the size of each new colony in millimetres (mm) of length

Use the following information to answer the questions below.



- 49) What do the two cells pictured above have in common? 49) _____
- A) cell walls
 - B) organelles used in photosynthesis
 - C) The two cells are the smallest unit of a complex organism.
 - D) membranes surrounding their DNA
 - E) membranes separating them from their surroundings
- 50) Figure B is which of the following? 50) _____
- A) mitochondrion
 - B) chloroplast
 - C) prokaryote
 - D) protist
 - E) eukaryote

- 51) How do we know that Figure A is an eukaryote? 51) _____
- A) It is larger than B.
 - B) A membrane surrounds it completely.
 - C) Internal membrane-bound structures are visible.
 - D) It has no defined nucleus.
 - E) It is not perfectly smooth.

- 52) Which of the following best describes all the living things in a particular area? 52) _____
- A) organisms
 - B) population
 - C) community
 - D) ecosystem
 - E) biosphere

The following is a list of biology themes discussed in Chapter 1. Use them to answer the questions below.

- I. New properties emerge at each level in the biological hierarchy.
- II. Organisms interact with other organisms and the physical environment.
- III. Life requires energy transfer and transformation.
- IV. Structure and function are correlated at all levels of biological organization.
- V. Cells are an organism's basic units of structure and function.
- VI. The continuity of life is based on heritable information in the form of DNA.
- VII. Feedback mechanisms regulate biological systems.
- VIII. Evolution accounts for the unity and diversity of life.

- 53) Which theme(s) is/are best illustrated by an experiment in which a biologist seeks a medication that will inhibit pain responses in a cancer patient? 53) _____
- A) III and V B) II C) V and VIII D) VI and VII E) VII

- 54) Which theme(s) is/are best illustrated by a group of investigators who are trying to classify and explain the ecology of the community living within a specific region of prairie grassland? 54) _____
- A) I only B) II only C) IV and VI D) I and II E) VIII only

- 55) Which theme(s) is/are illustrated when a group of students is trying to establish which phase of cell division in root tips happens most quickly? 55) _____
- A) IV only
- B) V only
- C) IV, V, and VI
- D) V, VI, and VII
- E) VII only

- 56) Which theme(s) is/are illustrated when a biology class is comparing the rates of photosynthesis between leaves of a flowering plant species (*Gerbera jamesonii*) and a species of fern (*Polypodium polypodioides*)? 56) _____
- A) I only
- B) II only
- C) I and III
- D) I and VII
- E) I, III, and V

Use the following information to answer the questions below.

You are studying photosynthesis and its overall function and purpose. You choose to use several aquatic plants of the same species and divide them into two tanks. One tank is under a low light regime and the other a high light regime. You grow them in these conditions for several weeks and make observations.

- 57) After several weeks you notice that the plants in high light are larger (grew more) and there are more air bubbles in the tank than in the low light tank. Which of the following is the most logical conclusion? 57) _____
- A) You didn't do the study properly and put larger plants in one tank.
 - B) You need to do more research to fully understand what could be happening.
 - C) The difference in light must have an influence on growth.
 - D) Something in the low light tank must be stopping growth.
 - E) More air in the tank has helped the plants to grow.
- 58) You are studying photosynthesis and its overall function and purpose. You choose to use several aquatic plants of the same species and divide them into two tanks. One tank is under a low light regime and the other a high light regime. You grow them in these conditions for several weeks and make observations. What is the logic above an example of? 58) _____
- A) collecting data
 - B) poor science
 - C) deductive reasoning
 - D) making a prediction
 - E) inductive reasoning
- 59) You are studying photosynthesis and its overall function and purpose. You choose to use several aquatic plants of the same species and divide them into two tanks. One tank is under a low light regime and the other a high light regime. You grow them in these conditions for several weeks and make observations. This conclusion can be considered which of the following? 59) _____
- A) theory
 - B) natural selection
 - C) mistake
 - D) hypothesis
 - E) prediction
- 60) The plant you chose has never been studied before. Perhaps you could have chosen a plant that many researchers are working on so that you could use and add to the body of knowledge about that organism. What is this type of species known as? 60) _____
- A) modified organism
 - B) logical organism; competition
 - C) shared species
 - D) common research organism
 - E) model organism
- 61) All the organisms on your campus make up which of the following? 61) _____
- A) a community
 - B) an ecosystem
 - C) a taxonomic domain
 - D) a population
 - E) an experimental group

- 62) Which of the following is a *correct* sequence of levels in life's hierarchy, proceeding downward from an individual animal? 62) _____
- A) organ system, nervous tissue, brain
 - B) brain, organ system, nerve cell, nervous tissue
 - C) organism, organ system, tissue, cell, organ
 - D) nervous system, brain, nervous tissue, nerve cell
 - E) organ system, tissue, molecule, cell
- 63) Which of the following is *not* an observation or inference on which Darwin's theory of natural selection is based? 63) _____
- A) Poorly adapted individuals never produce offspring.
 - B) Individuals whose inherited characteristics best fit them to the environment will generally produce more offspring.
 - C) Because of overproduction of offspring, there is competition for limited resources.
 - D) There is heritable variation among individuals.
 - E) A population can become adapted to its environment over time.
- 64) Which of the following is the main goal of systems biology? 64) _____
- A) Build high-throughput machines for the rapid acquisition of biological data.
 - B) Simplify complex problems by reducing the system into smaller, less complex units.
 - C) Understand the behaviour of entire biological systems.
 - D) Analyze genomes from different species.
 - E) Speed up the technological application of scientific knowledge.
- 65) Why are protists and bacteria grouped into different domains? 65) _____
- A) Because protists eat bacteria.
 - B) Because bacteria are not made of cells.
 - C) Because bacteria decompose protists.
 - D) Because protists have a membrane-bounded nucleus, which bacterial cells lack.
 - E) Because protists are photosynthetic.
- 66) Which of the following *correctly* describes a cell? 66) _____
- A) Cells may group together to form tissues but are not able to perform a specialized function until higher levels of structure.
 - B) There are 5 different types of molecules within a cell.
 - C) A cell is not able to perform all the functions of life.
 - D) One example of a specialized tissue is a chloroplast.
 - E) The cell is the fundamental unit of living organisms.
- 67) Which of the following is *true* for a controlled experiment? 67) _____
- A) It is repeated many times to make sure the results are accurate.
 - B) It is supervised by an experienced scientist.
 - C) It proceeds slowly enough that a scientist can make careful records of the results.
 - D) It tests experimental and control groups in parallel.
 - E) It keeps all variables constant.

- 68) Which of the following statements best distinguishes hypotheses from theories in science? 68) _____
- A) Theories are proved true; hypotheses are often falsified.
 - B) Theories are hypotheses that have been proved.
 - C) Hypotheses and theories are essentially the same thing.
 - D) Hypotheses are guesses; theories are correct answers.
 - E) Hypotheses usually are relatively narrow in scope; theories have broad explanatory power.
- 69) Which of the following is an example of qualitative data? 69) _____
- A) The plant's height is 25 centimetres (cm).
 - B) The six pairs of robins hatched an average of three chicks.
 - C) The contents of the stomach are mixed every 20 seconds.
 - D) The fish swam in a zigzag motion.
 - E) The temperature decreased from 20°C to 15°C.
- 70) Which of the following best describes the logic of scientific inquiry? 70) _____
- A) If I generate a testable hypothesis, tests and observations will support it.
 - B) If my hypothesis is correct, I can expect certain test results.
 - C) If my prediction is correct, it will lead to a testable hypothesis.
 - D) If my experiments are set up correctly, they will lead to a testable hypothesis.
 - E) If my observations are accurate, they will support my hypothesis.
- 71) In comparison to eukaryotes, prokaryotes are considered which of the following? 71) _____
- A) do not have membranes
 - B) larger
 - C) have more organelles
 - D) more structurally complex
 - E) are smaller
- 72) Which of the following is *true* about the diversity of life? 72) _____
- A) More vertebrate species have been identified than plant species.
 - B) Researchers identify thousands of additional species each year.
 - C) Estimates of the total number of species on Earth range from 8-10 million.
 - D) Biologists have identified and named about 5 million species of organisms.
 - E) At least 500,000 fungi have been identified.
- 73) Why are protists now placed in several groups rather than in one kingdom? 73) _____
- A) Because it was discovered that there were both single and multi-cellular protists.
 - B) Because some protists use DNA as their genetic molecule and other protists use RNA.
 - C) Because it was determined that some protists were more closely related to plants, animals and fungi than other protists.
 - D) Because protists are the most abundant organisms on earth.
 - E) Because protists were discovered to be both eukaryotic and prokaryotic.
- 74) An organism was discovered that is 50 μm in length and eukaryotic. Which of the following categories is the organism most likely to fall into? 74) _____
- A) Bacteria B) Animalia C) Archaea D) Protist E) Plantae

- 75) Why are cilia described as an example of unity underlying the diversity of life? 75) _____
A) Cilia provide motility to all the cells on which they reside.
B) Humans and *Paramecium* both share the same architecture of their cilia.
C) Imprints of cilia have been found in the fossilized remains of prokaryotes.
D) Cilia have an elaborate system of tubules.
E) Cilia are cells that function in locomotion.
- 76) What does Darwin's proposed mechanism of natural selection require? 76) _____
A) Natural selection requires equal reproductive success of individuals with different traits.
B) The environment increases the variation in a species.
C) The environments must vary for natural selection to occur.
D) Individuals with new traits always survive for a shorter period of time.
E) The species' environments selects for certain traits.
- 77) Which of the following *correctly* describes the properties and processes of life? 77) _____
A) Organisms are not able to regulate their internal environment.
B) An organism's adaptations evolve over 2 or 3 generations.
C) Inherited information controls the pattern of growth but not the development of an organism.
D) Life is disordered.
E) Organisms process energy during the course of their lives.
- 78) What is the application of scientific knowledge for some specific purpose is known as? 78) _____
A) deductive science
B) pure science
C) inquiry
D) technology
E) inductive science
- 79) Which of the following is an example of qualitative data? 79) _____
A) The six pairs of robins hatched an average of three chicks each.
B) The temperature decreased from 20°C to 15°C.
C) The contents of the stomach are mixed every 20 seconds.
D) The fish swam in a zigzag motion.
E) Fourteen colonies were resistant to antibiotics.
- 80) The temperature at which an alligator's egg is incubated will determine the sex of the offspring. 80) _____
What are the dependent and the independent variables in this experiment?
A) There are no independent variables.
B) The number of offspring and temperature in the incubator respectively.
C) The size of the incubator and size of the baby alligator respectively.
D) The sex of the baby alligator and temperature respectively.
E) The temperature and sex of the baby alligator respectively.

81) In presenting data that result from an experiment, a group of students find that most of their measurements fall on a straight diagonal line on their graph. However, two of their data points are "outliers" and fall far to one side of the expected relationship. What should they do?

81) _____

- A) Change the details of the experiment until they can obtain the expected results.
- B) Use another groups results.
- C) Do not show these points because clearly something went wrong in the experiment.
- D) Show all results obtained and then try to explore the reason(s) for these outliers.
- E) Average several trials, rule out the improbable results, and do not show them in the final work.

Answer Key

Testname: UNTITLED1

- 1) B
- 2) E
- 3) D
- 4) A
- 5) A
- 6) D
- 7) C
- 8) D
- 9) D
- 10) A
- 11) D
- 12) D
- 13) B
- 14) C
- 15) A
- 16) E
- 17) B
- 18) D
- 19) A
- 20) D
- 21) B
- 22) C
- 23) A
- 24) C
- 25) C
- 26) C
- 27) D
- 28) C
- 29) A
- 30) D
- 31) C
- 32) D
- 33) D
- 34) A
- 35) E
- 36) A
- 37) C
- 38) C
- 39) C
- 40) B
- 41) E
- 42) E
- 43) D
- 44) E
- 45) B
- 46) C
- 47) A
- 48) C
- 49) E
- 50) C

Answer Key

Testname: UNTITLED1

- 51) C
- 52) D
- 53) E
- 54) D
- 55) C
- 56) E
- 57) C
- 58) E
- 59) D
- 60) E
- 61) A
- 62) D
- 63) A
- 64) C
- 65) D
- 66) E
- 67) D
- 68) E
- 69) D
- 70) B
- 71) E
- 72) B
- 73) C
- 74) D
- 75) B
- 76) E
- 77) E
- 78) D
- 79) D
- 80) D
- 81) D