

Read all instruction and answer the following questions. After choosing the best response to the question, Bubble in your choice on the answer sheet. Bubble in your response completely and thoroughly erase any changes. You will be held accountable for bubbling mistakes. Do not write on this paper.

- 1) Which of these is the best description of the science of biology?
 - a. The study of life
 - b. The study of rocks
 - c. The study of humans
 - d. The study of biodiversity
 - e. The study of the way humans interact with their environment
- 2) A maple leaf is at which level in the hierarchical organization of life?
 - a. tissue
 - b. organ
 - c. organelle
 - d. population
 - e. organism
- 3) Which of the following are molecules?
 - a. carbon
 - b. water
 - c. chlorophyll
 - d. A and B
 - e. B and C
- 4) What is a localized group of organisms that belong to the same species?
 - a. network
 - b. community
 - c. population
 - d. ecosystem
 - e. collection
- 5) In terms of the hierarchical organization of life, an amoeba is _____ level of organization, whereas a dog is at the _____ level of organization?
 - a. at the cell and organism.....multicellular organism
 - b. only at the cell.....organism
 - c. only at the organelle.....cell and multicellular organism
 - d. only at the tissue.....multicellular organism
 - e. only at the organelle.....unicellular organism
- 6) Which of these is a correct representation of the hierarchical organization of life from least to most complex?
 - a. hydrogen, water, heart muscle cell, nucleus, heart muscle tissue, heart, human
 - b. hydrogen, water, nucleus, heart muscle cell, heart, heart muscle tissue, human
 - c. hydrogen, nucleus, water, heart muscle cell, heart, heart muscle tissue, human
 - d. water, hydrogen, nucleus, heart muscle cell, heart muscle tissue, heart, human
 - e. nucleus, hydrogen, water, heart muscle cell, heart, heart muscle tissue, human

- f.
- 7) Which of the following is reflective of the phrase “the whole is greater than the sum of its parts?”
- the cell theory
 - emergent properties
 - homeostasis
 - reductionism
 - evolution
- 8) Which of these statements is one of the generalizations of the cell theory?
- Life is extraterrestrial in origin.
 - All cells contain a nucleus.
 - DNA is the genetic material of all cells.
 - Cells have a homeostatic mechanisms that maintain their internal environment.
 - New cells arise from preexisting cells.
- 9) Which of the following utilize DNA as their genetic material?
- prokaryotes
 - eukaryotes
 - archaea
 - A and C only
 - A, B and C
- 10) Chemical reactions of metabolism within cells are regulated by organic catalysts. What are these catalysts called?
- kinetic transformers
 - enzymes
 - feedback inhibitors
 - analogs
 - nutrients
- 11) The maintenance of a relatively stable internal environment is referred to as
- taxonomy
 - natural selection
 - evolution
 - cell theory
- e. homeostasis
- 12) Which branch of biology is concerned with the naming and classifying of organisms?
- genetics
 - physiology
 - genomics
 - taxonomy
 - evolution
- 13) What are the two classifications of prokaryotes?
- Domain Bacteria and Domain Eukarya
 - Domain Archaea and Kingdom Monera
 - Domain Eukarya and Domain Archaea
 - Domain Bacteria and Kingdom Monera
 - Domain Bacteria and Domain Archaea
- 14) A rose bush is classified into Domain _____ and Kingdom _____.
- Eukarya.....Animalia
 - Eukarya.....Fungi
 - Eukarya.....Plantae
 - Eukarya.....Protista
 - Bacteria.....Archaea
- 15) The fact that there is strong genetic similarity among species is string evidence in support of
- multiple independent origins of life
 - the extraterrestrial origin of life
 - creationism
 - evolution
 - intelligent design

- 16) Collecting data based on observation is an example of _____. Analyzing this data to reach a conclusion is an example of _____ reasoning.
- a. discovery science.....inductive
 - b. the process of science.....deductive
 - c. hypothesis testing.....deductive
 - d. descriptive science.....deductive
 - e. hypothesis generation.....deductive
- 17) What is a hypothesis?
- a. the same thing as a theory
 - b. an untestable idea
 - c. a verifiable observation
 - d. a tentative explanation
 - e. a fact
- 18) The statement “If you show your dog affection then your dog will seek your company” is an example of
- a. a statement that can be tested
 - b. a statement derived from a hypothesis
 - c. a prediction
 - d. deductive reasoning
 - e. all of the above
- 19) Why is it important that an experiment include a control group?
- a. The control group is the group that the researcher is in control of; it is the group in which the researcher predetermines the nature of the results.
 - b. The control group provides a reserve of experimental subjects.
 - c. A control group is required for the development of an “if...then” statement.
 - d. A control group assures that an experiment will be repeatable.
 - e. Without a control group, there is no basis for knowing if a particular result is due to the variable being tested or to some other factor.

Essay questions

Answer the following questions in a well formed multiple paragraph answer (average size $\frac{3}{4}$ page)

- 1) Explain in your own words what is meant by “form fits function”. (Provide at least two examples)