

TEST NAME: **Biology Test 3 - Biomolecules II**
TEST ID: **2222574**
GRADE: **11 - Eleventh Grade**
SUBJECT: **Life and Physical Sciences**
TEST CATEGORY: **School Assessment**

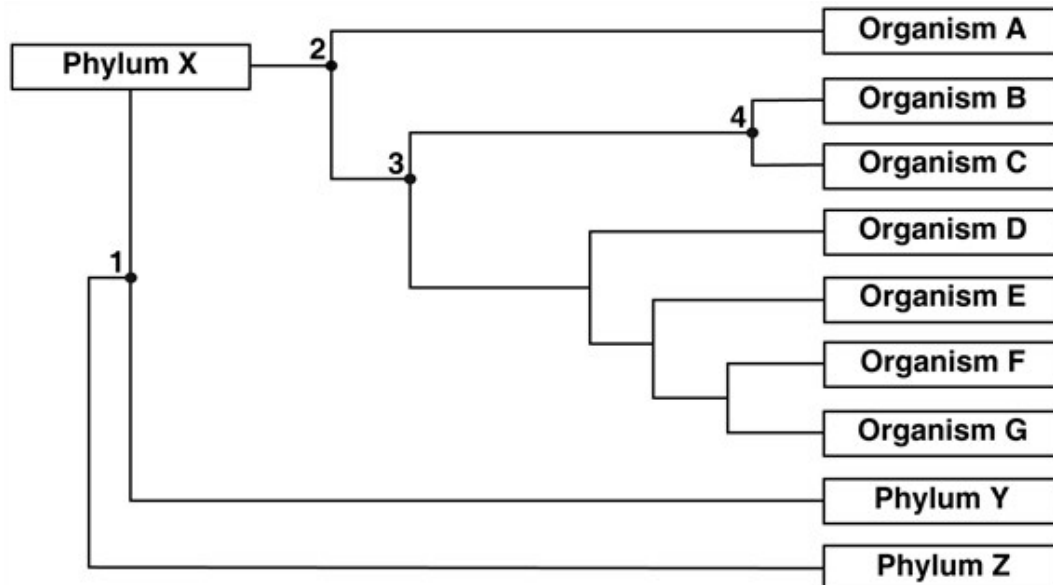
02/28/18, Biology Test 3 - Biomolecules II

Student: _____

Class: _____

Date: _____

1. The classification of some organisms has changed. Which new process is used to reclassify organisms?
 - A. Organisms are now given Latin-based scientific names.
 - B. Structures are now examined at the molecular level.
 - C. Organisms are now divided into three kingdoms.
 - D. Structures are now used to classify organisms.
2. Look at the phylogenetic tree below.



Which hypothetical organism is the most recent common ancestor for Organisms A and G?

- A. 1
- B. 2
- C. 3
- D. 4

3. A *Euglena* is a single-celled organism that is both heterotrophic and autotrophic. How did the discovery of *Euglena* change the classification system?
- A. The discovery made it necessary to add the fungus kingdom to the classification system.
 - B. The discovery made it necessary to add the protist kingdom to the classification system.
 - C. The discovery made it necessary to broaden the definition of the plant kingdom to include both heterotrophic and autotrophic organisms.
 - D. The discovery made it necessary to broaden the definition of the animal kingdom to include both heterotrophic and autotrophic organisms.
4. How are chromosomal comparisons, bio-geographical distribution, and biochemistry of extinct organisms used in modern classification systems?
- A. to refute the theory of evolution
 - B. to determine evolutionary relationships of species
 - C. to reinforce Aristotle's two-kingdom classification system
 - D. to support the theory that all organisms evolved from the same life form
5. **Which factor determines if two individuals are members of the same species?**
- A. They live in the same habitat and niche.
 - B. They forage and eat the same type of food.
 - C. They mate and produce fertile offspring.
 - D. They are similar in appearance and color.
6. *Canis lupus*, the scientific name for a wolf, is in which genus?
- A. *Canis*
 - B. *lupus*
 - C. Animalia
 - D. Mammalia

7. Which kingdoms contain autotrophic organisms?
- A. Protista and Fungi
 - B. Fungi and Animalia
 - C. Plantae and Protista
 - D. Animalia and Plantae
8. Which is used to classify and name an organism?
- A. karyotype
 - B. cladogram
 - C. dichotomous key
 - D. phylogenetic tree
9. In which of the following taxonomic groups would organisms have the **LEAST** number of similarities?
- A. kingdom
 - B. class
 - C. family
 - D. genus
10. The table shows some characteristics of four kingdoms.

Characteristics of Four Kingdoms

Kingdom	Cell Wall	Nucleus	Chlorophyll	Reproduction
Archaeobacteria	Yes	No	No	Asexual
Eubacteria	Yes	No	Yes and No	Asexual
Protista	Yes and No	Yes	Yes and No	Asexual and Sexual
Fungi	Yes	Yes	No	Asexual and Sexual

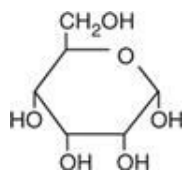
What characteristic separates Protista and Fungi from Archaeobacteria?

- A. protective cell wall
- B. identifiable nucleus
- C. method of reproduction
- D. light-activated chlorophyll

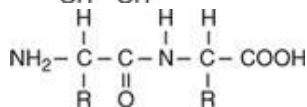
11. **Fats are specialized lipid molecules, and enzymes are specialized protein molecules. How do the functions of fats and enzymes differ?**
- A. Fats are structural building materials, while enzymes are transportation molecules.
 - B. Fats provide support for cells, while enzymes lower the pH of gastric fluids.
 - C. Fats regulate body functions, while enzymes denature invasive bacteria.
 - D. Fats are storage molecules, while enzymes are catalytic molecules.
12. Which **best** explains the process that occurs in order for energy to be derived from starch?
- A. It must be dissolved in water.
 - B. It must be converted into glucose.
 - C. It must be combined with another polysaccharide.
 - D. It must be decomposed into carbon, hydrogen, and oxygen.
13. While trying to identify molecules and compounds within a cell, a scientist stumbles upon a nucleic acid that contains the nitrogenous base uracil, the sugar ribose, and is single-stranded. Which nucleic acid has this scientist **most likely** found?
- A. DNA
 - B. RNA
 - C. amino acid
 - D. chromosome

14. **Proteins function to provide structure for tissues and organs. Which of the following are the building blocks of proteins?**

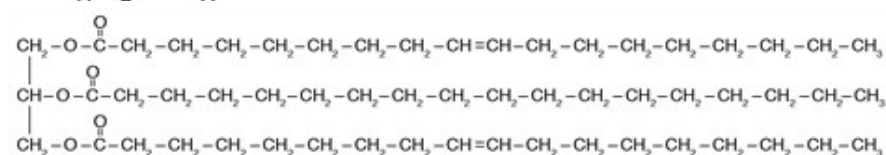
A.



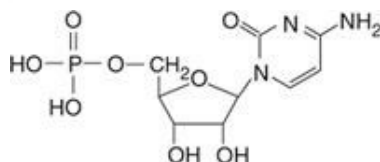
B.



C.



D.



15. **Why are lipids important for the survival of animals?**

- A. Lipids carry genetic information in the form of RNA.
- B. Lipids store energy and vitamins that animals need.
- C. Lipids provide animals with quick energy for routine tasks.
- D. Lipids contain amino acids necessary for protein synthesis.

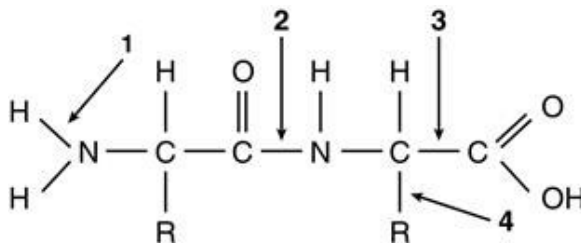
16. **All organisms contain DNA and RNA. What are the subunits of DNA and RNA?**

- A. simple sugars
- B. amino acids
- C. carbohydrates
- D. nucleotides

17. **Which type of molecule do whales use for energy storage and insulation?**

- A. DNA
- B. glucose
- C. fat
- D. starch

18. If in any organism a DNA molecule is 24% cytosine, how much adenine will that DNA molecule contain?
- A. 24%
B. 26%
C. 48%
D. 52%
19. The structural diagram demonstrates two joined amino acids.



Which arrow points to the peptide bond?

- A. 1
B. 2
C. 3
D. 4
20. Many poisons can enter the active site of enzymes essential for brain functioning. These poisons are never broken down and remain attached to the enzyme. Which **best** describes the effect this would have on the enzyme's activity?
- A. The enzyme activity would continue at its normal rate.
B. The enzyme would take longer to perform its normal functions.
C. The enzyme would be rendered useless since its active site was blocked.
D. The enzyme would transfer its active site to another location and continue its normal activity.
21. Which **best** describes how an enzyme affects the rate of a chemical reaction?
- A. It increases the temperature of the reaction.
B. It lowers the activation energy of the reaction.
C. It changes the products created in the reaction.
D. It causes the reaction to proceed in an unfavorable direction.

22. **Biochemical reactions that require high temperatures to proceed are able to take place at body temperature within the cells of living organisms. Which factor is MAINLY responsible for allowing biochemical reactions to proceed at body temperature?**
- A. The cellular enzymes act as catalysts.
 - B. The small size of cells keeps reactants together.
 - C. The pH of the cytoplasm increases reaction rate.
 - D. The reactants are present in small quantities in the cell.
23. **Why are enzymes considered reusable?**
- A. Enzymes are constantly renewed by other enzymes.
 - B. Enzymes are made of unusually strong materials.
 - C. Enzymes are constantly regenerated by respiration.
 - D. Enzymes are not changed when they catalyze a chemical reaction.
24. **To which class of organic compounds do enzymes belong?**
- A. proteins
 - B. fatty acids
 - C. nucleic acids
 - D. monosaccharides
25. **Which statement BEST explains why enzymes bind to specific substrates?**
- A. An enzyme can be inhibited so its active site is altered.
 - B. An enzyme folds differently in the presence of different substrates.
 - C. Different amino acid sequences cause variations in the shapes of an enzyme's active sites.
 - D. Enzyme-substrate binding is based on size so only large enzymes can bind to large substrates.