

Name: _____ Date: _____

Jurassic World: Advanced Taxonomy & Phylogeny Finals for Seniors

Go beyond simple naming conventions to identify structural differences between Eukarya and Prokarya in this formative assessment on biological organization.

1. While analyzing a microscopic sample from a deep-sea hydrothermal vent, you find a unicellular organism that lacks a nucleus and possesses membrane lipids with ether-linked branched chains. To which domain does this organism belong?

- A. Bacteria
- B. Protista
- C. Archaea
- D. Eukarya

2. The use of binomial nomenclature ensures that a single organism, such as the North American cougar, is recognized by the same scientific name (*Puma concolor*) globally regardless of regional common names.

- A. True
- B. False

3. An organism that is multicellular, eukaryotic, and lacks a cell wall while obtaining nutrients through ingestion belongs to the Kingdom _____.

- A. Fungi
- B. Animalia
- C. Protista
- D. Plantae

4. In the modern taxonomic hierarchy, which of the following levels contains the greatest diversity of genetic variation and the largest number of organisms?

- A. Phylum
- B. Class
- C. Genus
- D. Kingdom

5. Organisms classified within the Kingdom Fungi are primary producers that utilize chlorophyll to synthesize glucose from sunlight.

- A. True
- B. False

6. The scientific name for the common baker's yeast is *Saccharomyces cerevisiae*. In this name, 'Saccharomyces' represents the _____ level of classification.

- A. Order

Name: _____ Date: _____

- B. Species
- C. Genus
- D. Family

7. Which of the following is the most accurate reason why the Kingdom Protista is often referred to as a 'taxonomic drawer' or catch-all group?

- A. It contains only prokaryotic organisms that are not bacteria.
- B. It includes any eukaryote that does not fit into plants, animals, or fungi.
- C. All organisms in this kingdom are strictly autotrophic and multicellular.
- D. Members of this kingdom lack a nucleus but have complex organelle systems.

8. According to the hierarchical system of classification, two organisms belonging to the same 'Order' must also belong to the same 'Class'.

- A. True
- B. False

9. Cyanobacteria are unique because, although they are prokaryotic, they perform oxygenic photosynthesis. They are classified under the Domain _____.

- A. Eukarya
- B. Archaea
- C. Protista
- D. Bacteria

10. When comparing a redwood tree (Plantae) and a puffball mushroom (Fungi), what is a fundamental difference in their cellular composition?

- A. Redwoods have prokaryotic cells, while mushrooms have eukaryotic cells.
- B. Redwoods have cell walls made of cellulose; mushrooms have cell walls of chitin.
- C. Redwoods have mitochondria, but mushrooms only have chloroplasts.
- D. Redwoods lack a cytoplasm, whereas mushrooms have highly fluid cytoplasm.