

Name: _____

(Six pages)

Regular Classroom Row Number: _____

HOUR EXAMINATION #2

History of Life

November 2, 2018

(All tests are due at 8:50 a.m.)

1. **Trilobites**, those cute little extinct arthropods, began to decline in diversity and abundance in the Ordovician. At the same time they went through distinct evolutionary changes. Please answer the questions below about this evolution. [10 points]

How did trilobite **eyes** change? Why?

How did trilobite **behavior** change? Why?

2. We discussed four genera of animals from the important Burgess Shale fauna of the Cambrian. Pick your favorite (just one), tell me its **name**, draw a simple **diagram** of it, and then describe its **life habits** (movement, feeding, etc.) [8 points]

3. Identify, define and/or describe any **three** of the following terms. Be sure to include **dates**, **examples** and **diagrams** where appropriate. For each selected term, state its importance in the History of Life. (If more than three are answered, only the first three are graded.) [15 points total]

keratin

analogous structure

Competitive Exclusion Principle

archosaur

Myllokunmingia

4. The current hypothesis of the cause of the Triassic-Jurassic extinctions is that massive volcanism began a process of global warming that led to catastrophe. Please answer the following questions about it --

What is our **evidence** for this Late Triassic volcanic activity? [2 points]

Why was there so much volcanic activity at this time? [5 points]

How can volcanic eruptions warm the atmosphere? [5 points]

5. Please draw below a labeled cross-section through a **spreading center** showing with arrows which directions the plates move and the *convection cells* in the *mantle* beneath them. [10 points]

6. What is the animal pictured below? _____ [10 points total]



During what period did this group appear? _____

During what period did this group go extinct? _____

It was endothermic. How did it retain its body heat? (Be specific.)

7. Please briefly describe below three lines of evidence that support the hypothesis that dinosaurs showed care for their young. Be sure to give evidence and not just the interpretations. [9 points]

First Line of Evidence

Second Line of Evidence

Third Line of Evidence

8. Fill in the blanks! All time terms must be spelled and capitalized correctly. [10 points total]

Period during which the first fish appeared: _____

Period during which the first amphibians appeared: _____

Period during which the trilobites went extinct: _____

Period during which the first reptile appeared: _____

Period during which the first mammal appeared: _____

9. What is **paedomorphosis** and how is it related to the early evolution of chordates? [8 points]

10. Birds and other theropod dinosaurs have air sacs as part of their respiratory systems. What use are these air sacs to their respiration? How does this system take advantage of the structure of their bones? [8 points]

Extra credit! One point for each correct prediction. Entirely optional, of course.

The 2018 midterm elections will result in a Democrat majority in the U.S. House of Representatives next year: True or False (circle one)

The 2018 midterm elections will result in a Democrat majority in the U.S. Senate next year: True or False (circle one)