

Name: _____

LECTURE EXAMINATION #1

Invertebrate Paleontology

September 21, 2017

[This test is due at 9:20 a.m.]

1. How does the process of **permineralization** work in preserving a porous object like a piece of wood or bone? What is the most common mineral or compound that does the permineralization? [6 points]

2. You knew this had to come. Fill in the blanks! This is the standard Linnean classification system [10 points]

Kingdom

Species

3. Identify, define and/or describe any **three** of the following terms. Be sure to include dates, examples and diagrams where appropriate. When possible, mention any special significance for paleontology. [15 points total]

zooxanthellae

diatom

pseudopodia

coccolith

medusa (in cnidarians)

4. Fill in the blanks! [10 points total]

Foraminiferid order with agglutinated walls: _____

Radiolarian tests are made of this material: _____

Sponge class with calcareous spicules: _____

The class to which the Portuguese Man-o-War belongs: _____

Term for corals that build reefs: _____

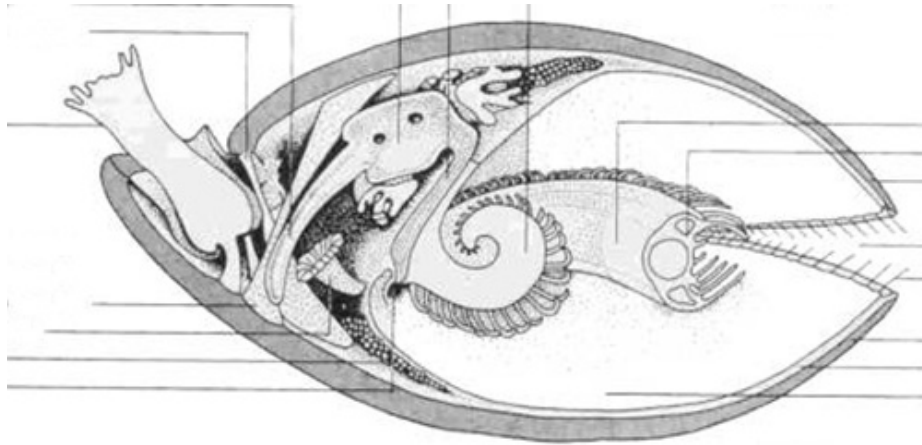
5. In the familiar diagram below, label the listed parts. You do not need to use all the lines, and you can make your own lines. Just be sure it is clear what you are labeling. [8 points]

dorsal valve
ventral valve
posterior

lophophore
mouth
gut

mantle cavity
body cavity
pedicle

adductor muscle
mantle
anterior



6. You find a colonial coral in an old museum drawer without a label. There are plenty of septa in the simple, polygonal corallites, so you're sure it is either a **rugose** or a **scleractinian** coral. How can you determine which it is? Assume you can do any test or procedure. Please list all the relevant features you can here. [10 points]

7. Please draw below a cross-section through the wall of a typical living sponge, showing and labeling all the appropriate cell types and structures. [10 points]

8. Why might a skeleton made of silica have some advantages over one made of calcium carbonate? In turn, why can calcite sometimes be better than silica for a skeleton? [9 points total]

9. Foraminiferids have an *alternation of generations* as part of their life histories. What does this mean? What advantages are there to this alternation? [8 points]

10. How do we define a *species*? In other words, what is the Biological Species Concept? Please use an example or two after your definition. [6 points]

11. What is the fossil illustrated below? What is its age? Please label as many features as you can. [8 points]

