

**BIOLOGY 205 – COMPARATIVE INVERTEBRATE ZOOLOGY**  
**EXAM FORMAT WITH SAMPLE QUESTIONS**

(The directions are exactly as you'll see them on the actual exam)

**DIRECTIONS:** Please read all of the questions carefully before you answer. Notice that in some cases you have a choice of questions to address. Write only on this examination paper; use the backs of pages if you need more space. If you think that a question is unclear or ambiguous, feel free to write explanatory or qualifying comments with your answers.

**I.** If the *italicized term(s)* is correctly used, then place an X in the blank to the right. If the *italicized term(s)* is incorrectly used, then write in the blank an appropriate replacement term for the term in italics. (2 marks each)

1. (Example) *W. Paley* proposed a hypothetical mechanism for biological evolution that emphasized the “inheritance of acquired characters”. \_\_\_\_\_

2. (Example) *Plate tectonics* refers to the relative movements of continental and oceanic masses of the earth’s crust through geological time. \_\_\_\_\_

About 10 questions.

**II.** Classification spot check. Below are descriptions of some taxa we have discussed in class. Give the name of each taxon at the categorical rank indicated. (2 marks each)

1. (Example) Diploblastic, radial symmetry, most have a dimorphic life cycle:  
Phylum \_\_\_\_\_

About 8 questions.

**III.** Multiple choice. Place an X in the blanks next to each and every correct statement. Any number, from none to all, may be correct. (1 mark each)

1. (Example) Which of the following are correct about animal digestion/nutrition?

- \_\_\_\_\_ the lymphatic system transports fats
- \_\_\_\_\_ undigested food is assimilated by the body
- \_\_\_\_\_ polysaccharides are chains of amino acids
- \_\_\_\_\_ enzymes are proteins that speed up chemical reactions
- \_\_\_\_\_ the liver converts nitrogenous wastes into urea

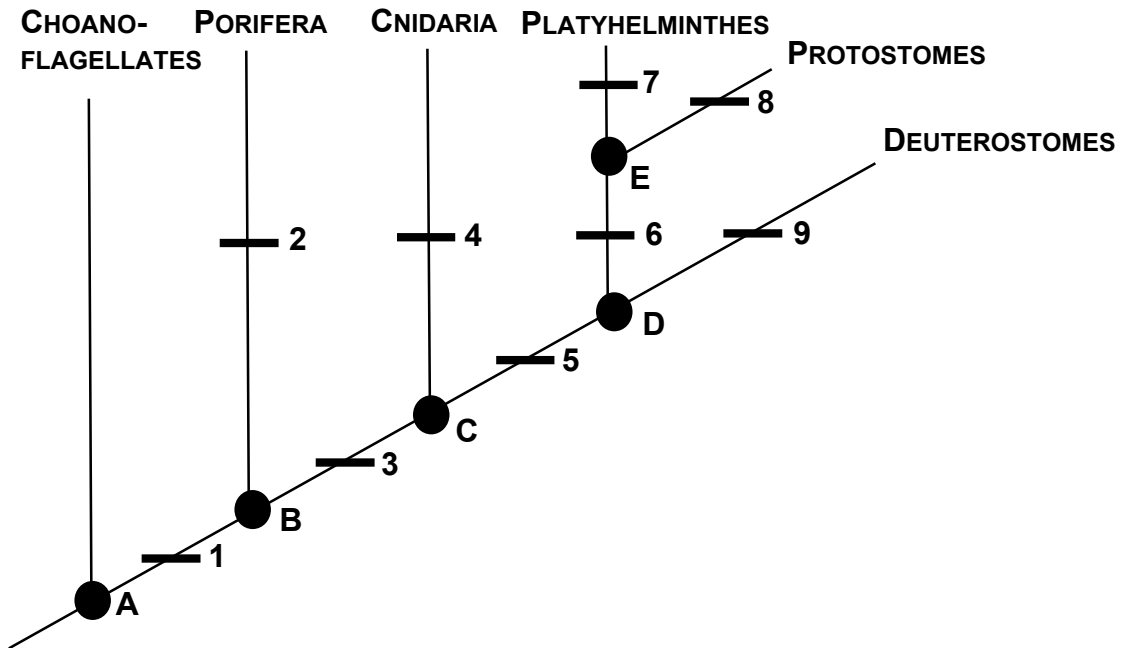
About 25 questions – in groups of 5 as shown above.

IV. In the space below, answer EITHER A OR B. (14 marks)

A. (Example) Diagram a generalized chordate. Label all parts shown and indicate any synapomorphies for the group.

B. (Example) Discuss how the general body forms and associated morphological characters of snails, clams and squids relate to their modes of feeding. Be as direct and thorough as possible.

V. The following questions refer to the cladogram below.



1. (Example) Write a brief description of ancestor D. (2 marks)

2. (Example) Listed below are a variety of characters found in animals. Indicate where each first evolved on the cladogram by writing the appropriate **number** in the blank. (1 mark each)

\_\_\_\_\_ spiral cleavage  
 \_\_\_\_\_ aquiferous system

\_\_\_\_\_ schizocoelous coelom  
 \_\_\_\_\_ cephalization

VI. Distinguish clearly and fully between the members in the following pairs of terms. (4 marks per pair)

1. (Example) Analogous vs. homologous structure

About 3 pairs.