

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]

polyphyletic

sessile benthic epifaunal filter-feeder

Archaeocyatha

rugae

coenosteum

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

Preservation mode where minerals are added to a porous skeleton: _____

Life mode of an organism suspended or floating in the water: _____

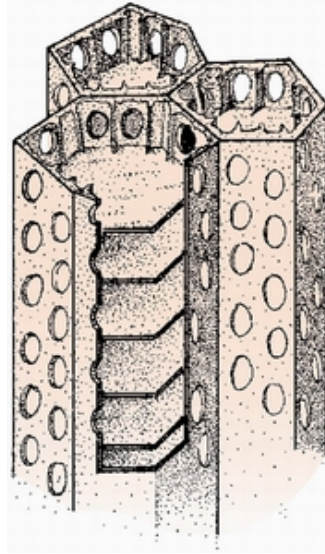
Kingdom of single-celled eucaryotes: _____

Cnidarian class with no medusae: _____

Scleractinian skeletons are made of this mineral: _____

5. What is **evolutionary convergence**? Please give at least one example and then tell me why this can be a problem when identifying fossils and interpreting evolutionary lineages. [9 points]

6. Please label all the parts of the fossil skeleton below and answer the following questions. [9 points]



What was the original mineral that composed this skeleton? _____

What is the formal name for the **Family** to which this fossil belongs? _____

Is this family ever found in solitary form? (Circle YES or NO)

7. Why is the **leucon** grade of sponge the most efficient filter-feeding type of its phylum? I expect you first to describe this grade (using a diagram) and then tell me why it is better for filtration than the other sponge grades. [6 points]

8. This question is too good not to use again. Please draw below a cross-section of a living sponge wall, showing and labeling all the cell types and other structures. Indicate the inside and outside of the wall. [10 points total]

9. What is **ecophenotypy**? Please give a definition and at least one example. [6 points]

10. What clues can we use to determine if a fossil coral had **zooxanthellae**? [9 points]

11. Forams! This should be simple considering all we've done in class and lab. Please draw lines connecting each taxonomic name on the left with its proper description on the right. [10 points]

Fusulinids

Agglutinated test wall.

Miliolids

Granular calcareous test; usually football-shaped; relatively large.

Globigerinids

Imperforate calcareous test; appears like porcelain.

Rotalids

Perforate; globular chambers.

Textularids

Perforate calcareous test; sometimes translucent; some are large.