

**Purpose:** This study guide will help you identify the information you should know in order to discuss how cnidarians and ctenophores address the challenges of life in lecture and that you should study for the first Lecture Exam.

Learning objectives: By completing this study guide, students will be able to:

- Identify the Class, Subclasses, and Orders to which certain cnidarians belong
- Learn the distinctive features of the class, subclasses, and orders
- Label diagrams of the anatomies of representative members of the class and subclasses
- Study the life cycle of this class of cnidarians
- Identify the Phylum to which ctenophores belong
- Learn some of the distinctive features of this phylum

## CLADE METAZOA

### CLADE EUMETAZOA

#### Phylum Cnidaria

#### Class Anthozoa – “flower animal”

**Habitat(s) - Marine**

**1. Body forms – which form or forms exist in the life cycles of anthozoans (page 275)?:**

**2. Solitary or colonial? – circle the state(s) in which anthozoans exist (page 281 – Taxonomy of Phylum Cnidaria):**

Solitary

Colonial

**3. Distinctive characteristics (vs. other cnidarians) - circle the answer or answer the question:**

Gonads (page 281):

Ectodermal

Endodermal

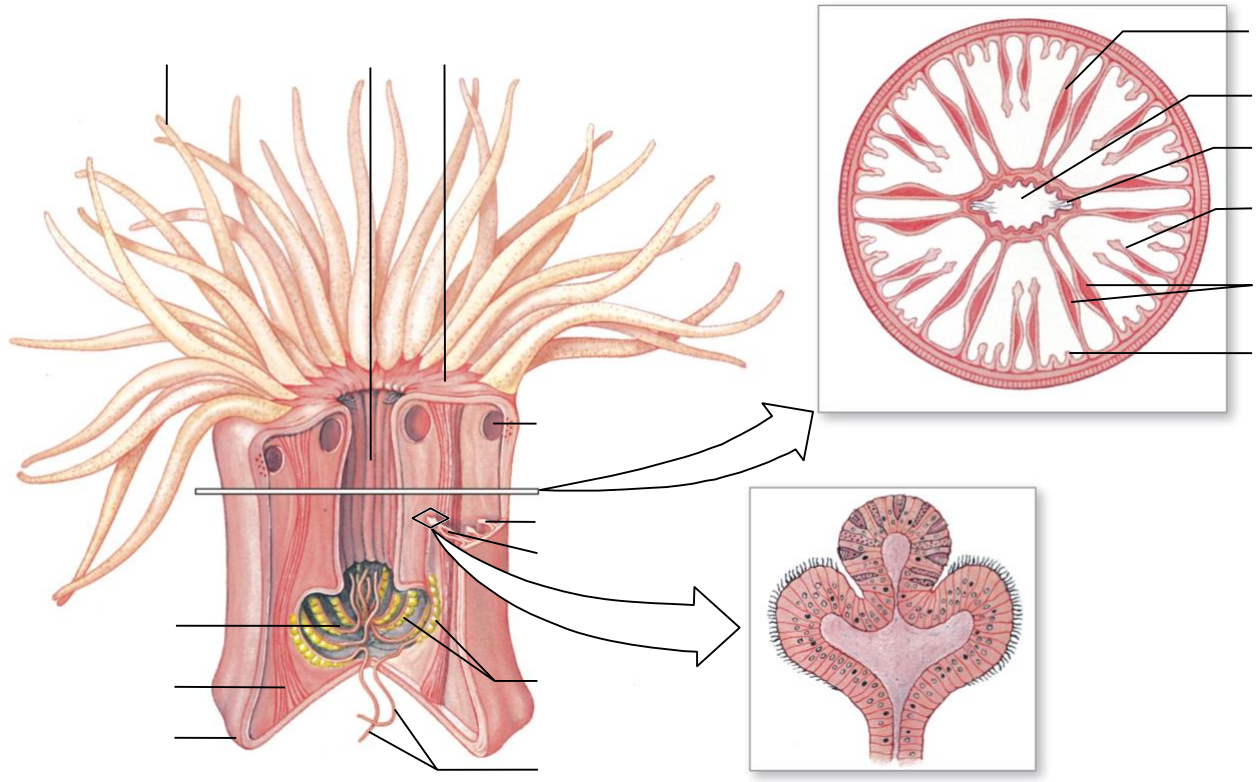
Cnidocytes (Lecture):

Epidermis

Gastrodermis

**4. Name the structures that subdivide the gastrovascular cavity of anthozoans (page 275):**

5. Label the diagram below using the following list of terms: acontia, complete septum, cross-section through pharynx, gastrovascular cavity, gonads, oral disc, pharynx (x2), pedal disc, retractor muscle, retractor muscles, secondary septum (x2), septal filament, septal perforation, siphonoglyph, tentacle, and tertiary septum (x2) (Figure 13.24 – page 276).



**Examples include:** sea anemones, hard corals, tube anemones, thorny corals, soft and horny corals, sea pens, sea fans, sea pansies

**Subclass Hexacorallia**

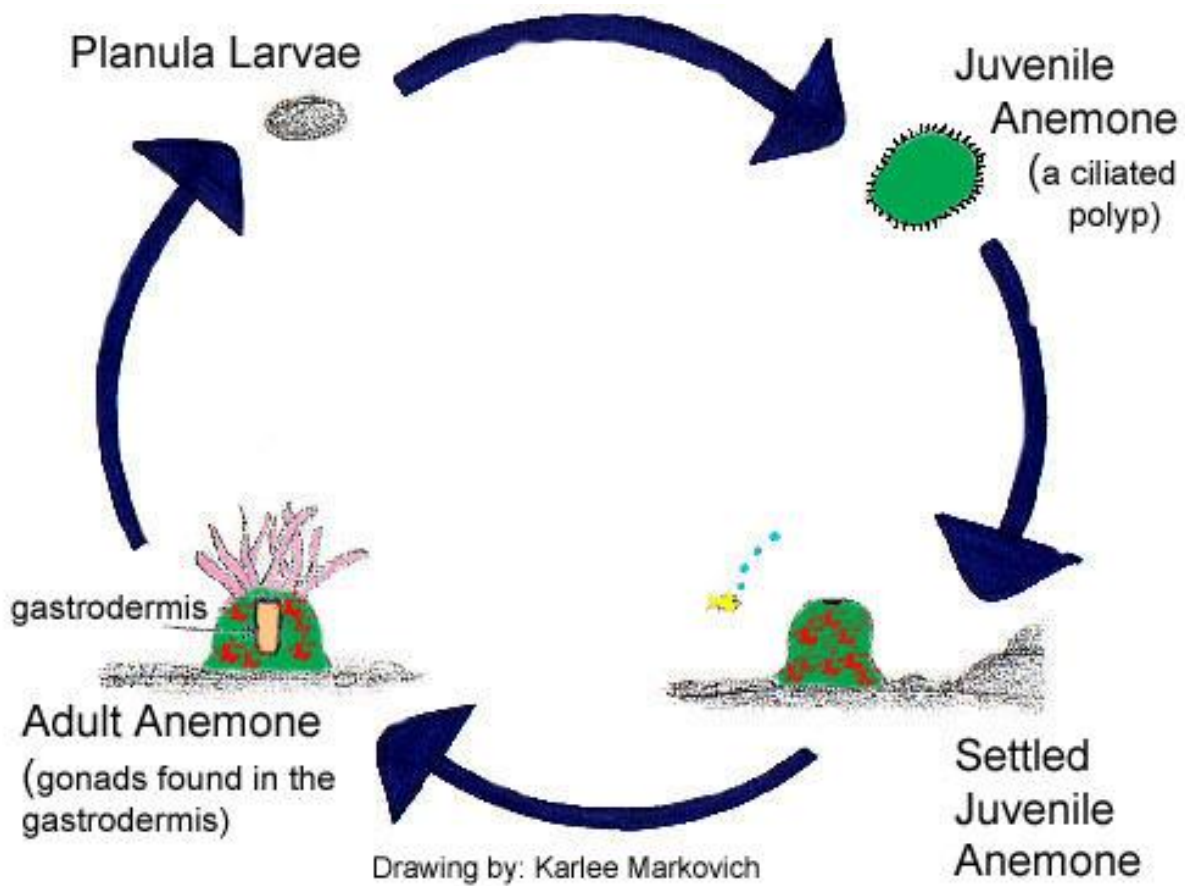
**Distinctive characteristics – circle the answer:**

6. Septa (page 281):            Unpaired                    Paired
7. Symmetry (page 277):        None                            Hexamerous                Octomerous

Tentacles: **Tubular**

**Order Actinaria – siphonoglyph; examples include: *Metridium senile*, sea anemones**

8. Circle one (Lecture):            Solitary                        Colonial

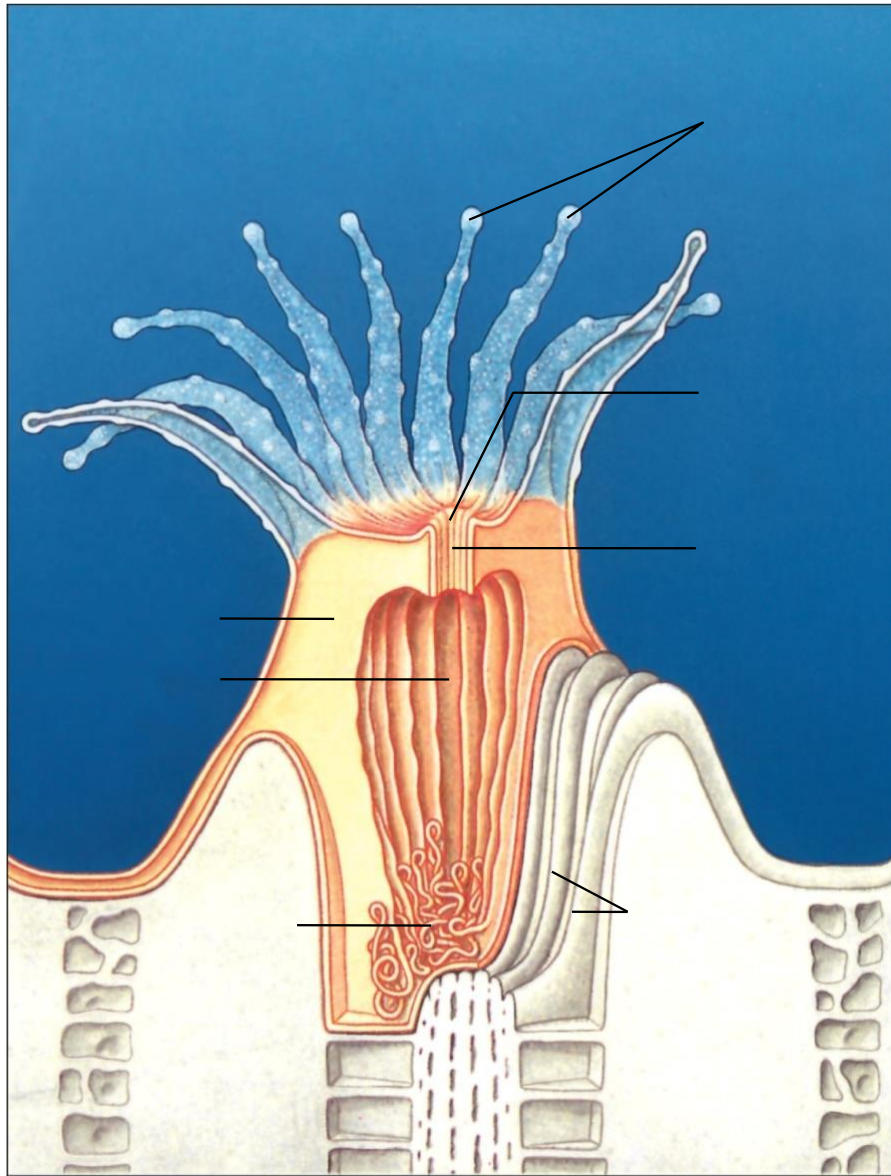


**Figure Dearolf.1.** Diagram of the life cycle of *Metridium*.

**Order Scleractinia** – calcareous exoskeleton (corallite); **examples include:** *Acropora* sp., hard corals

9. Circle one (Lecture):      Solitary      Colonial

10. Label the diagram below using the following list of terms: calcium carbonate exoskeleton, gastrovascular cavity, mouth, pharynx, sclerosepta, septal filament, septum, and tentacles (Figure 13.28 – page 278).



***Subclass Ceriantipitharia***

**Distinctive characteristics – circle the answer:**

11. Septa (page 277):            Unpaired                    Paired
12. Symmetry (Lecture):        None                            Hexamerous                Octomerous
13. Tube anemones (circle one) (page 277): Solitary                    Colonial

14. Thorny corals (circle one) (page 279): Solitary Colonial

**Examples include:** *Cerianthus* sp., tube anemones, thorny corals

***Subclass Octocorallia***

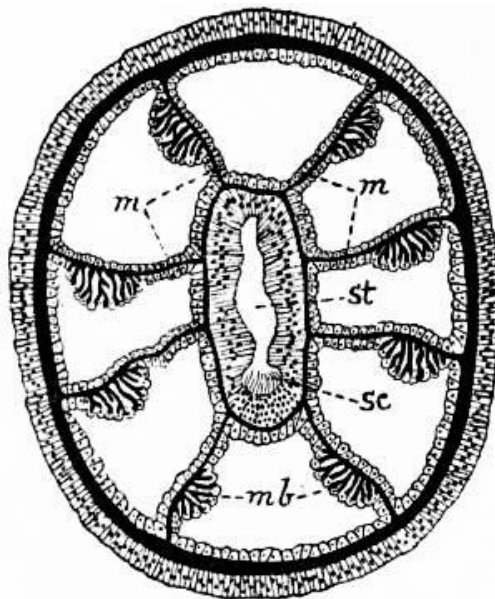
**Distinctive characteristics – circle the answer:**

15. Septa (page 279): Unpaired Paired

16. Symmetry (page 279): None Hexamerous Octomerous

Tentacles: **Feathery (Pinnate)**

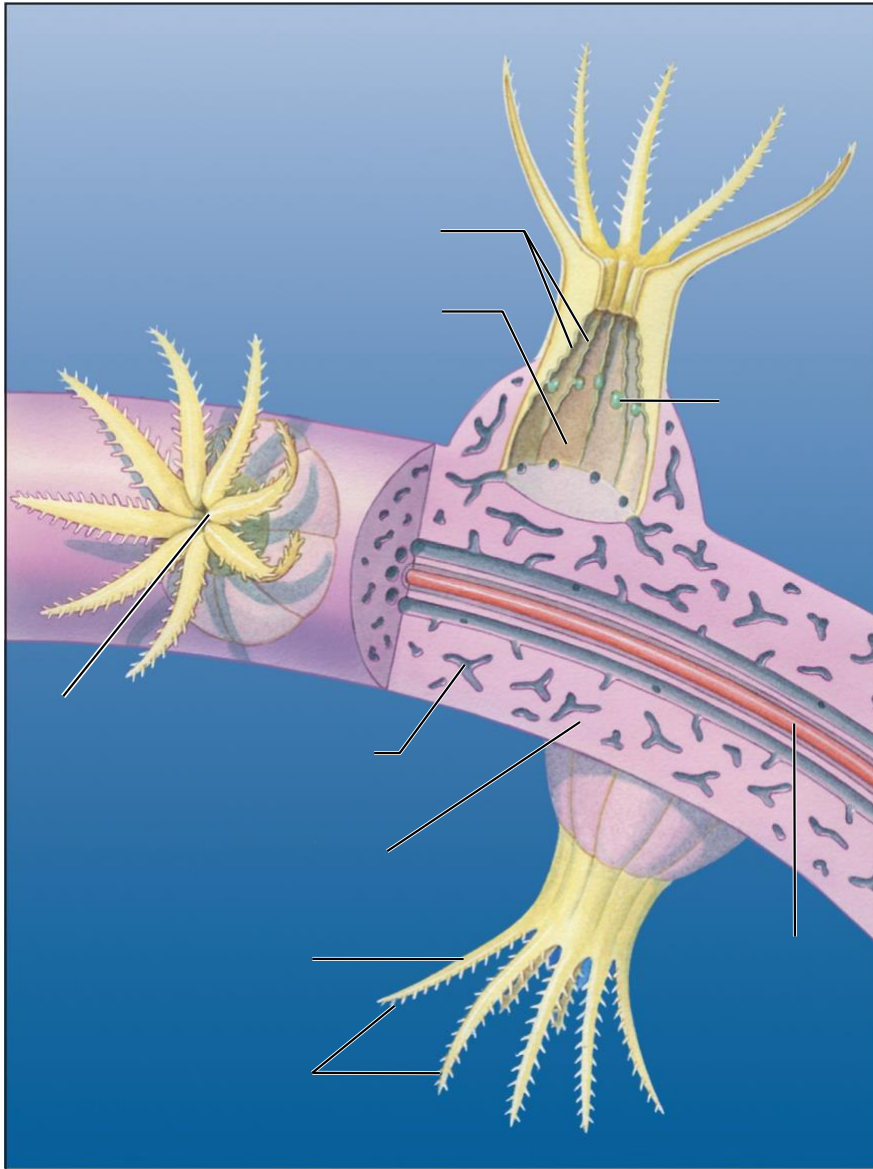
17. Circle one (page 279): Solitary Colonial



**Figure Dearolf.2.** Diagram of a cross-section of an octocorallian.

**Examples include:** *Gorgonia* sp., soft and horny corals, sea pens, sea fans, and sea pansies

18. Label the diagram below using the following list of terms: axial rod, coenenchyme, gastrodermal tube (solenia), gastrovascular cavity, gonad, mouth, pinnules, septal filaments, and tentacle (Figure 13.32 – page 279).



**CLADE METAZOA**

**CLADE EUMETAZOA**

**Phylum Ctenophora**

**Distinctive characteristics - answer the questions:**

19. Level of organization:

20. Symmetry:

21. Diplo or Triploblastic:

22. Protostome or Deuterostome: **Not applicable**

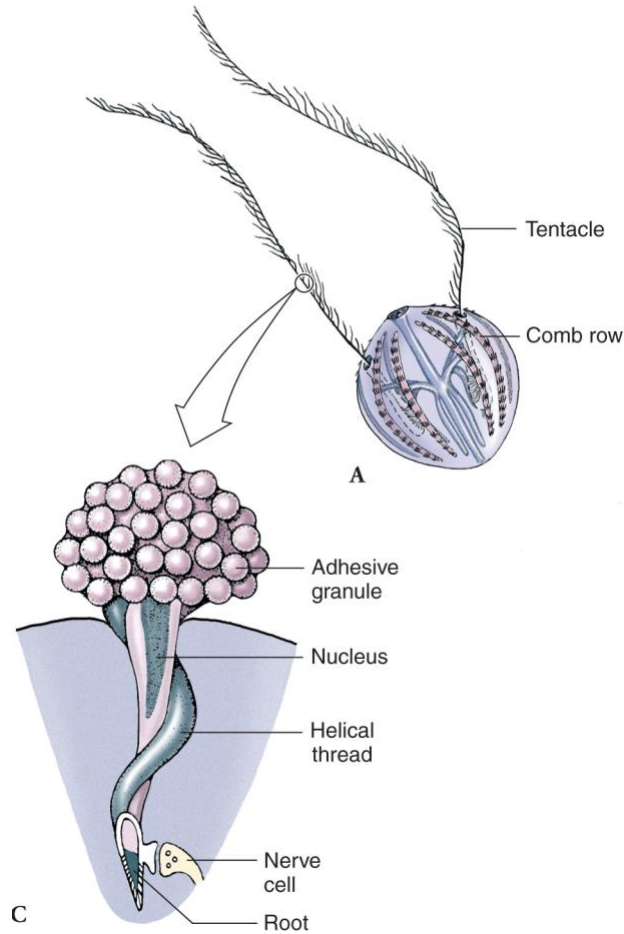
23. Acoelomate/Pseudocoelomate/Coelomate: **Not applicable**

24. Schizo or Enterocoelous: **Not applicable**

25. Segmented?:

26. Number of rows of combs possessed by ctenophores (page 282):

27. Type of cell unique to ctenophores (page 283):



**Figure 13.38 (edited).** Diagrams of the anatomy of a comb jelly (A) and a colloblast (C).

**Habitat(s) - Marine**

**Hickman Chapter 13**

Class Anthozoa

Sea Anemones

Figure 13.24 (page 276)

Hexacorallian Corals

Figure 13.28 (page 278)

Tube Anemones and Thorny Corals

Octocorallian Corals

Figure 13.32 (page 279)

Coral Reefs – coral bleaching (pages 280-281)

Phylum Ctenophora

Characteristics of Phylum Ctenophora (page 284)

Figure 13.38 (page 283)