Name _____ Class _____ Date _____

Reviewing Key Concepts

Completion *On the lines provided, complete the following paragraph.*

Animals are _____ (1.), or composed of many cells. Those cells are _____ (2.), meaning that they contain a nucleus and organelles. Animal cells do not have _____ (3.); they are surrounded only by a cell membrane. Animals are _____ (4.), because they obtain nutrients by feeding on other organisms.

Short Answer *On the lines provided, answer the following questions.*

5. What happens when an animal respires? _____
6. What is the function of a circulatory system? _____
7. Why must all living things excrete waste products? _____
8. How do muscles and musclelike tissues generate force? _____
9. How might sexual reproduction help a species to cope with environmental change? _____
10. What are some characteristics of complex animals? _____

Reviewing Key Skills

11. **Comparing and Contrasting** How is the blastopore of a protostome similar to that of a deuterostome? How do these blastopores differ?

12. **Comparing and Contrasting** How do the body plans of animals with bilateral and radial symmetry differ?

13. **Applying Concepts** What is the relationship between the degree of cephalization and the complexity of the animal?

Name _____ Class _____ Date _____

Reviewing Key Concepts

Completion *On the lines provided, complete the following sentences using one of the words in parentheses.*

1. A sponge is classified as a(an) _____ (plant/animal).
2. Sponges are _____ (autotrophs/heterotrophs).
3. The cells of sponges _____ (do/do not) have cell walls.
4. Sponges contain _____ (no/some) specialized cells.

Short Answer *On the lines provided, answer the following questions.*

5. What role does the movement of water play in the essential functions of a sponge?

6. How does a sponge move water through its body?

7. Describe how a sponge obtains and digests food.

Reviewing Key Skills

8. **Comparing and Contrasting** How do sponges reproduce sexually? How does this differ from asexual reproduction?

9. **Inferring** When faced with difficult environmental conditions, sponges produce gemmules. How does this help sponges?

10. **Applying Concepts** How might the extinction of a species of sponge affect other organisms in the same kind of habitat?

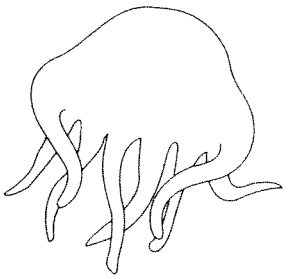
Name _____ Class _____ Date _____

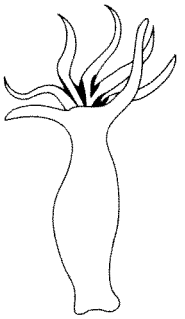
Reviewing Key Concepts

Completion *On the lines provided, list five main features of cnidarians.*

1. _____
2. _____
3. _____
4. _____
5. _____

Identifying Diagrams *On the lines provided, write the stage of the cnidarian life cycle shown by each diagram.*





6. _____ 7. _____

Short Answer *On the lines provided, answer the following question.*

8. What are the three groups of cnidarians?

_____

_____

Reviewing Key Skills

9. **Comparing and Contrasting** How are the functions of a statocyst and an ocellus similar? How are they different?

_____

_____

_____

_____

10. **Inferring** What human activities or products of human activities might be responsible for a decline in coral population?

_____

_____

_____

_____

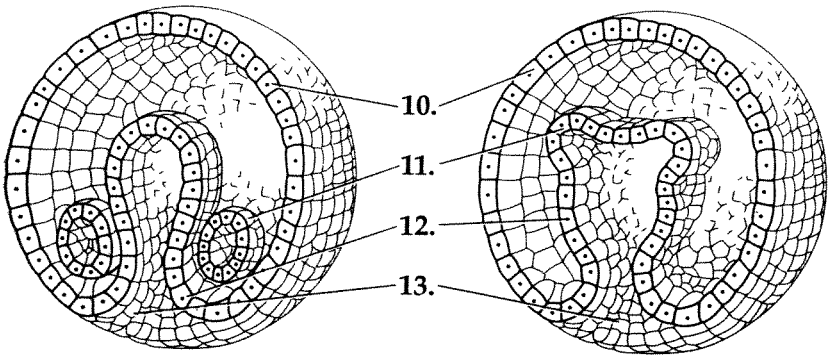
Name _____ Class _____ Date _____

Matching *On the lines provided, write the letter of the definition that matches each term.*

_____ 1. invertebrate
_____ 2. vertebrate
_____ 3. filter feeder
_____ 4. parasite
_____ 5. protostome
_____ 6. deuterostome
_____ 7. radial symmetry
_____ 8. bilateral symmetry
_____ 9. cephalization

a. animal that has no backbone
b. characterized by body parts that repeat around the center of a body
c. the concentration of nerve cells and sense organs at the anterior end of the body
d. animal with a backbone
e. aquatic animal that strains tiny floating plants and animals from the water around it
f. animal whose mouth is formed from a blastopore
g. organism that lives and feeds on another organism, harming it
h. body plan in which a single, imaginary line can divide the body into two equal halves
i. animal whose anus is formed from a blastopore

Labeling Diagrams *On the lines provided, write the names of the structures that correspond to the numbers in the diagram.*



10. _____
11. _____
12. _____
13. _____

Completion *On the lines provided, complete the following sentences.*

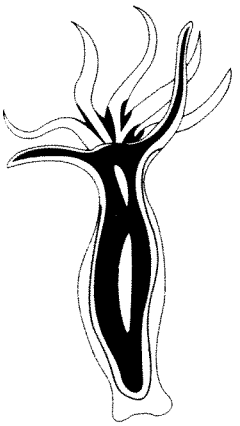
14. The specialized cells of a sponge that produce its spike-shaped _____ are called _____.
15. An immature stage of an organism that does not look like the adult form is called a(an) _____.
16. A group of archaeocytes surrounded by a tough layer of spicules is called a(an) _____.
17. Within each _____, or stinging cell, of a cnidarian, is a(an) _____, a poison-filled, stinging structure.

Name _____ Class _____ Date _____

Multiple Choice *On the lines provided, write the letter of the answer that best answers each question.*

_____ **18.** Which form of a cnidarian is shown in the illustration below?

a. polyp
b. archaeocyte
c. medusa
d. mesoglea



_____ **19.** What is the inner lining of the gastrovascular cavity in a cnidarian called?

a. the ectoderm
b. the gastroderm
c. the mesoderm
d. the mesoglea

_____ **20.** What lies between the gastroderm and the epidermis?

a. the gastrovascular cavity
b. the mesoglea
c. the cnidocyte
d. the mesoderm

_____ **21.** The digestive chamber of a cnidarian is called the

a. nematocyst.
b. osculum.
c. gastroderm.
d. gastrovascular cavity.

_____ **22.** What grouping of nerve cells allows a cnidarian to detect the touch of a foreign object?

a. statocysts
b. nematocysts
c. nerve nets
d. spicules

_____ **23.** What is the name for a group of sensory cells that helps a cnidarian determine the direction of gravity?

a. statocysts
b. blastulas
c. a nerve net
d. ocelli

_____ **24.** What structure allows a cnidarian to detect the absence or presence of light?

a. a statocyst
b. a nerve net
c. an ocellus
d. an osculum

_____ **25.** What allows cnidarian polyps to expand, shrink, and move their tentacles?

a. a hydrostatic skeleton
b. choanocytes
c. archaeocytes
d. internal fertilization

Name _____ Class _____ Date _____

The Portuguese Man-of-War

The Portuguese man-of-war is a marine animal found in the open waters of the Atlantic Ocean. It is a cnidarian, a member of the phylum Cnidaria, class Hydrozoa. The Portuguese man-of-war is not just one animal; it is actually an entire colony of animals. Because the Portuguese man-of-war contains several different organisms that are functionally distinct, it is called a polymorphic colony.

The Portuguese man-of-war is striking. It looks like a blue float from above. The top portion, which can be up to 30 cm in length, has a crest that actually works as a sail. The Portuguese man-of-war is propelled by the wind at the ocean surface. Underneath the sail is a colony of individuals. The individuals, suspended from the float, have different specializations. For example, some, called gastrozooids, specialize in feeding. Others are specialized for reproduction.

Below the blue body, the colony has short tentacles and longer fishing tentacles. The fishing tentacles can be several meters in length. Cnidocytes, poisonous stinging cells, are located in the ectoderm of the tentacles and in the mouth region. Inside a cnidocyte, there is a thin, coiled thread called a nematocyst. The nematocyst responds to stimuli, such as touch or certain chemicals, by uncoiling and extending beyond the cell. Nematocysts function only once and then the cnidarian must generate new ones.

Some nematocysts contain an adhesive and entangle prey. Others penetrate the prey and inject a toxin that subdues it. After the prey is subdued, the tentacles grasp and immobilize it. The tentacles contract, bringing the prey up to the gastrozooids, which feed on it. The nematocysts of most cnidarians cannot pierce human skin. The stinging cells of the Portuguese man-of-war, however, can penetrate human skin and cause swelling, allergic reactions, and even death.

Evaluation *On the lines provided, answer the following:*

1. Describe the functions of specialized individuals in the Portuguese man-of-war.

_____

_____

_____

_____

2. Give an example of a life process that requires interaction among several parts of the Portuguese man-of-war. How does each different part contribute to the process?

_____

_____

_____

_____

Name _____ Class _____ Date _____

Cycle Diagram

Life Cycle of the Cnidarian *Aurelia*

Use information from the chapter to complete the cycle diagram below. If there is not enough room in the cycle diagram to write your answers, write them on a separate piece of paper.