

SECTION 30-1 REVIEW

THE CHORDATES

VOCABULARY REVIEW Define the following terms.

- 1. **notochord** _____

- 2. **pharyngeal pouch** _____

- 3. **lancelet** _____

- 4. **chordate** _____

- 5. **tunicate** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. In most chordates, the function of the notochord is taken over by the
a. backbone. b. brain. c. spinal cord. d. pharynx.
- _____ 2. The gill chambers of aquatic chordates evolved from the
a. dorsal nerve cord. c. pharyngeal pouches.
b. backbone. d. postanal tail.
- _____ 3. The marine animals in the subphyla Cephalochordata and Urochordata live
a. only in fresh water. c. only on land.
b. only in the ocean. d. in fresh water, in the ocean, and on land.
- _____ 4. A lancelet feeds by
a. pursuing and capturing small animals with its tentacles.
b. sucking blood from the skin of a larger animal.
c. digesting nutrients contained in the bottom sediments it swallows.
d. filtering food particles from the water that passes through its pharynx.
- _____ 5. Unlike adult lancelets, adult tunicates
a. have segmented muscles in their tail. c. lack a notochord and a tail.
b. are radially symmetrical. d. have a backbone to protect their spinal cord.

SHORT ANSWER Answer the questions in the space provided.

1. List the chordate characteristics that lancelets have as adults. (p.770) _____

2. How do lancelets feed? (p.770) _____

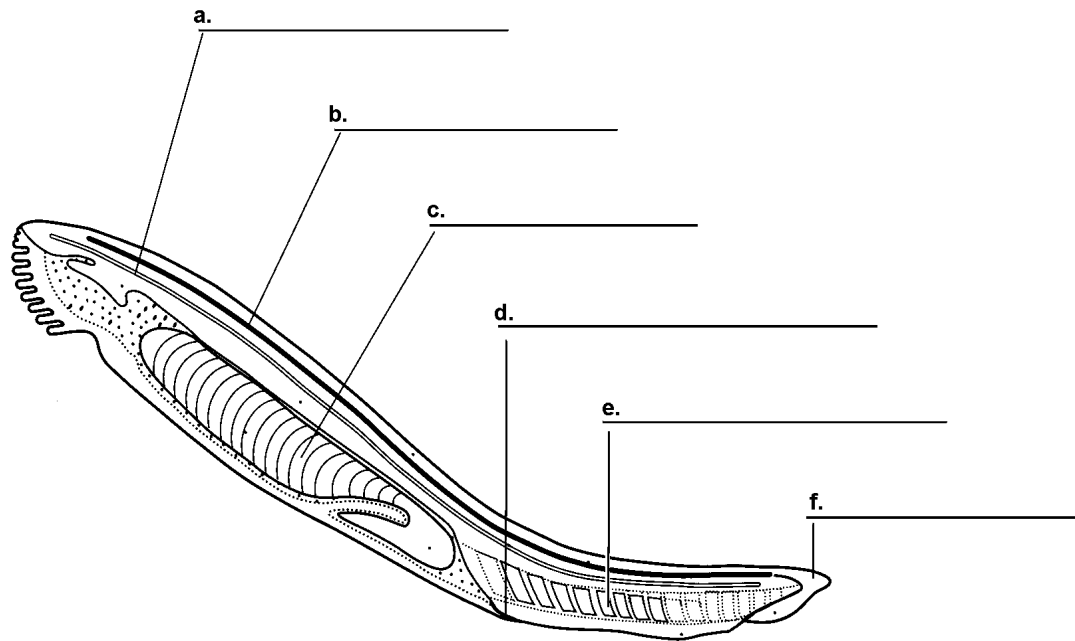
3. How did tunicates receive their name? (p.769) _____

4. What behavior do tunicates exhibit when touched? (p.769) _____

5. How does the structure of a larval tunicate differ from that of an adult tunicate? (p.769) _____

5. **Critical Thinking** How are most adult tunicates similar to sponges? (p.665 and p.769)

STRUCTURES AND FUNCTIONS Identify the structures labeled *a - f* in the diagram of a lancelet shown below. Use the following terms: segmented muscles, anus, notochord, hollow nerve cord, pharynx with gill slits, and tail. (p.770)



SECTION 30-2 REVIEW

FISHES

VOCABULARY REVIEW Distinguish between the terms in each of the following.

- 1. **atrium, ventricle** _____

- 2. **cerebrum, cerebellum** _____

- 3. **oviparous, viviparous, ovoviviparous** _____

- 4. **anadromous, catadromous** _____

- 5. **Chondrichthyes, Osteichthyes** _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Fishes obtain the oxygen they need by absorbing it through their
a. kidneys. b. gills. c. skin. d. rectal gland.
- _____ 2. Which of the following fish are jawless?
a. lamprey b. shark c. trout d. catfish
- _____ 3. One characteristic of many lampreys but not of hagfishes is
a. a parasitic lifestyle. c. the absence of fins.
b. a bony skeleton. d. the presence of jaws.
- _____ 4. In a fish, the blood that leaves the heart goes first to the
a. kidneys. b. brain. c. muscles. d. gills.
- _____ 5. The organ that adjusts the buoyancy of many bony fishes is the
a. swim bladder. b. gall bladder. c. urinary bladder. d. lungs.

SHORT ANSWER Answer the questions in the space provided.

1. What two organs are involved in the excretion of water and salt in a bony fish? (p.776) _____

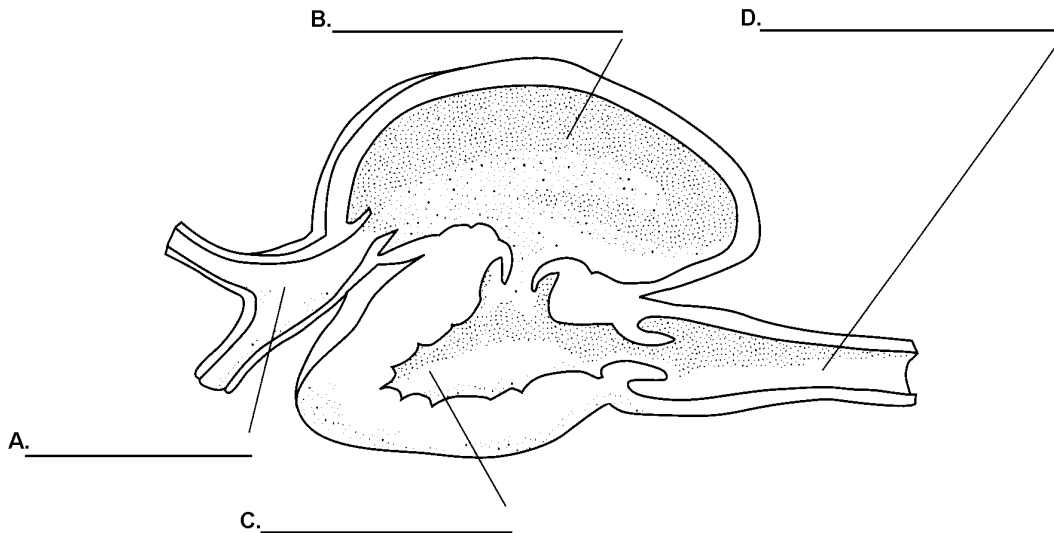
2. How does a bony fish adjust its buoyancy? (p.777) _____

3. Give an example of a fish that is oviparous, ovoviviparous, and viviparous. What is the difference between these three terms? (p.778) _____

4. Name the five basic fins of a bony fish. Which of these fins is used for swimming rapidly? (p.771) _____

5. Name the three main parts of a fish's brain and describe the function of each part. (p.777) _____

STRUCTURES AND FUNCTIONS Identify the structures labeled A-D in the diagram of a fish's heart shown below. Draw three arrows on the diagram to show where blood enters and leaves the heart. Color the chambers either red or blue depending on whether it is oxygenated (red) or deoxygenated (blue). Use the following terms for labeling the fish heart: atrium, ventricle, sinus venosus, and bulbous arteriosus. (p.776)



SECTION 30-3 REVIEW

AMPHIBIANS

VOCABULARY REVIEW Define the following terms.

- 1. tadpole _____

- 2. cloaca _____

- 3. nictitating membrane _____

- 4. tympanic membrane _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. Most amphibian eggs
 - a. are fertilized internally.
 - b. have a shell around them.
 - c. are surrounded by cell walls.
 - d. are laid in water or in moist places.
- _____ 2. The feet of most amphibians
 - a. are webbed.
 - b. have claws.
 - c. have eight toes.
 - d. are like the fins of fish.
- _____ 3. The part of a frog's heart that pumps blood to the lungs and the rest of the body is the
 - a. ventricle.
 - b. left atrium.
 - c. right atrium.
 - d. sinus venosus.
- _____ 4. One factor that increases the chances of successful fertilization in frogs is that
 - a. eggs can be fertilized by sperm of any frog species.
 - b. the female produces a single egg.
 - c. fertilization occurs internally.
 - d. fertilization occurs while the male grasps firmly onto the female.
- _____ 5. An amphibian's mucous glands
 - a. filter nitrogenous wastes from the blood.
 - b. supply a lubricant that keeps the skin moist in air.
 - c. secrete poisonous substances that repel predators.
 - d. Both b and c are correct.

SHORT ANSWER Answer the questions in the space provided.

1. Name three ways that amphibians carry out gas exchange. (p.784) _____

2. Many frogs are both poisonous and very colorful. What function does their coloration likely serve? (p.789)

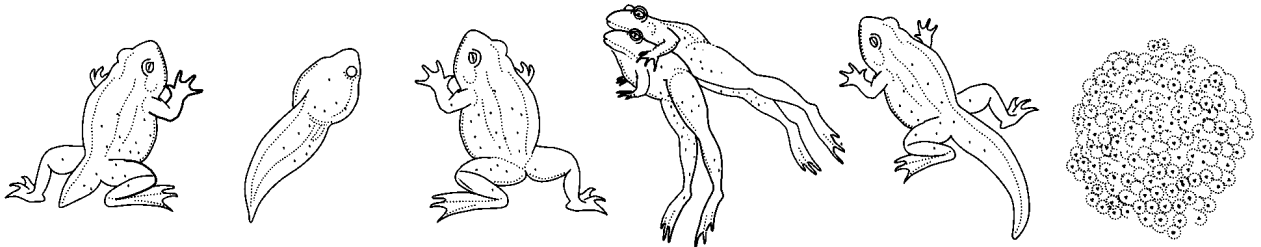
3. The amphibian has a double loop circulatory system. Explain the difference between each of the loops. (p.785)

4. Describe three ways that an amphibian may take care of its eggs or young. (p.786) _____

5. List three changes that occur in the body of a tadpole during metamorphosis. (p.786) _____

6. How do the nictitating membranes, tympanic membranes and lateral lines help the amphibian respond to their environment? (p.787) _____

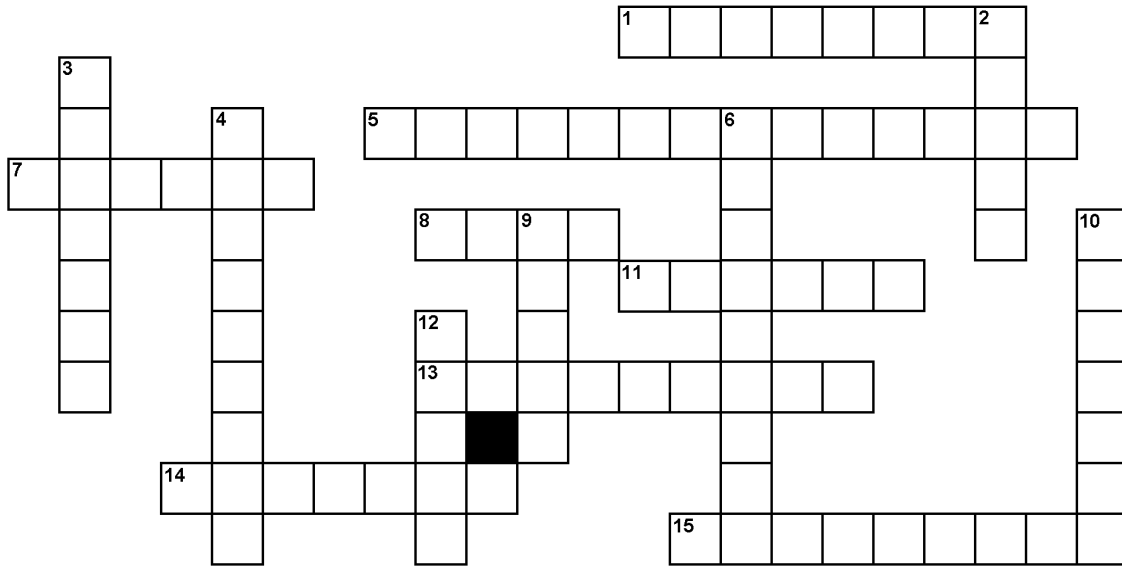
STRUCTURES AND FUNCTIONS The drawings below represent the stages in the life cycle of a frog. Place the stages in the correct order by writing the numbers 1-6 in the spaces beneath the drawings, beginning with the stage that shows a cluster of fertilized eggs. (p.786)



- a. _____ b. _____ c. _____ d. _____ e. _____ f. _____

VOCABULARY - CHAPTER 30

The crossword puzzle is a simple way to master some of the more important vocabulary terms in this chapter.



Across

1. modified pelvic fins used by male sharks for transferring sperm to female sharks during internal fertilization
5. the fish gill is very efficient at extracting oxygen from the water; it uses _____ flow where the water and blood flow opposite of each other
7. the _____ fin is found at the posterior end of the fish
8. jaws of the fish are thought to have evolved from the first pair of _____ arches
11. a blood vessel that carries blood away from the heart
13. a cheek covering over the gills of bony fish
14. the cavity in the head where the brain is located
15. the _____ column protects the dorsal nerve cord

Down

2. _____ venosus is the first chamber to receive deoxygenated blood in a fish heart
3. the swim _____ controls buoyancy in bony fish
4. the smallest blood vessel where nutrients and wastes are exchanged with cells
6. sharks have a skeleton made of _____ which is different from that of bony fish
9. sharks lack a swim bladder but use their oily _____ for buoyancy
10. the _____ line system is a sensory system used to detect pressure waves in the water
12. the bulbous or _____ arteriosus is the last chamber to receive deoxygenated blood in a fish heart

The following terms are **not** used in this chapter but are found in this puzzle. Use a reference source and look up their meanings so you can complete this vocabulary puzzle. **claspers, countercurrent, caudal, gill, artery, cranium, capillary, liver, and conus.**