

Sponges (p. 618 - 621)

I. The Simplest Animals

p. 618

1. Sponges are placed in the phylum Porifera. (Not in the book.)

2. Sponges are animals.

Circle One :

True

False

- ① Heterotrophic
- ② No cell walls
- ③ Specialized Cells
- ④ Multicellular

3. Describe the body of a sponge.

- Masses of specialized cells embedded in a gel-like substance

4. Sponge cells are not organized into tissues and organs.

Circle One :

True

False

5. Match the anatomical terms of a sponge with the correct definitions.

- | | |
|---|--|
| 1. <u>A.</u> Mesophyl | A. Gel-like substance found in the interior of sponges. |
| 2. <u>B.</u> Ostia | B. "Pore Cells"; Tiny openings through which water enters. |
| 3. <u>D.</u> Osculum | C. Specialized cells that pick up nutrients from collar cells. |
| 4. <u>E.</u> ^(K) Choanocytes | D. Large opening through which water exits sponges. |
| 5. <u>C.</u> Amoebocytes | E. "Collar Cells"; Flagellated cells - move water in sponges. |

p. 619

6. Define the term sessile.

Sessile - live their entire adult life attached to a single spot + do not move

7. What does the movement of water through a sponge provide?

- Mechanism for feeding, respiration, circulation + excretion

8. Where does digestion take place in sponges?

- Intracellular (inside the cells)

9. Circle the letter of each sentence that is true about sponges. (Not in the book.)

- a. Sponges are filter feeders.
- b. Sponges reproduce only asexually.
- c. Sponges rely on water movement to carry out body functions.
- d. Sponges do not have a nervous system.

II. Sponge Diversity

1. What do folds in a sponge's body provide?

p. 620
 - Increase sponge size + surface area

2. A sponge has a skeleton.

Circle One : True False

3. Define the term spicule.

Spicule - tiny needle composed of silica or calcium carbonate
 (makes up sponge skeleton)

4. Define the term spongin.

Spongin - resilient, flexible protein fiber
 (makes up sponge skeleton)

5. List the three different groups of sponges.

Examples:
 - Venus Flower Basket
 - Sycon
 - Spongia
 - Spongilla

Calcareous Sponges - spicules composed of calcium carbonate
Glass Sponges - spicules made of silica
Demosponges - spicules made of silica and spongin

III. Reproduction

1. Circle the letter of each type of reproduction that can occur with sponges.

- p. 621
- a. Regeneration (asexual)
 - b. Budding (asexual)
 - c. Gemmule formation (asexual)
 - d. Sexual Reproduction

2. New sponges can form from fragments of a single sponge.

Circle One : True False Regeneration

3. Define the term gemmule.

Gemmule - clusters of amoebocytes surrounded by a tough layer of spicules

4. When do gemmules typically form?

- Harsh conditions (Freezing Temps + Drought)

5. Most sponges are hermaphrodites (capable of producing sperm and eggs).

Circle One : True False