**Echinoderms** (p. 692 – 699)

**I. Animal Development**

**1. Match the following terms with the correct definitions.**

1. \_\_\_\_\_\_\_\_ Blastopore A. Animals with mouths that develops near the blastopore.

2. \_\_\_\_\_\_\_\_ Protostomes B. Opening to the outside of the gastrula (embryo cells).

3. \_\_\_\_\_\_\_\_ Deuterostomes C. Animals with an anus that develops near the blastopore.

**2. List examples of animals that are :**

Protostomes : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Deuterostomes : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**II. Modern Echinoderms**

**1.** **Sea stars are members of the phylum \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

**2. List four other examples of echinoderms.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. In what type of environment do all echinoderms live? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**4. What type of skeleton do echinoderms possess?**

Circle One : Hydrostatic Skeleton Endoskeleton Exoskeleton

**5. What is the skeleton of an echinoderm composed of?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Define the term ossicles.**

Ossicles –

**7. What type of symmetry do echinoderms exhibit as adults?**

Circle One : Bilateral Radial

**8. What is the structure of the nervous system in most echinoderms?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**9. Echinoderms cannot regenerate lost rays or arms.**

Circle One : True False

**10. Define the term water-vascular system.**

Water-Vascular System –

**11. What functions does the water-vascular system carry out in echinoderms?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**12. Define the term skin gills.**

Skin Gills –

**13. What are the functions of the skin gills?**

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**III. Sea Star** *(Up Close p. 696)*

**1. Match the sea star anatomical terms with the correct definitions.**

1. \_\_\_\_\_\_\_\_ Tube Feet A. Produce juices that liquefy prey when ingested.

2. \_\_\_\_\_\_\_\_ Madreporite B. Cardiac & pyloric; Expelled during feeding.

3. \_\_\_\_\_\_\_\_ Reproductive Organs C. Attaches to radial canal & extends down each ray.

4. \_\_\_\_\_\_\_\_ Digestive Glands D. Operates like a living suction cup.

5. \_\_\_\_\_\_\_\_ Stomachs E. Eggs or sperm that may occupy a full arm or ray.

6. \_\_\_\_\_\_\_\_ Ring Canal F. Attached to madreporite & circles central disk.

7. \_\_\_\_\_\_\_\_ Radial Canal G. Sieve-like structure of the water-vascular system.

**IV. Echinoderm Diversity**

**1. Complete the table about the groups of echinoderms.**

|  |  |  |
| --- | --- | --- |
| **Group** | **Description Of Feeding** | **Description Of Body** |
| Sea Stars |  | Star-shaped |
|  | Filter feeders and  detritovores | Star-shaped with slender,  flexible arms |
| Sea Lilies &  Feather Stars |  | Long, feathery arms  attached to a stalk |
|  | Detritus feeders | Look like warty, moving  pickles (slug-like) |
| Sea Urchins &  Sand Dollars | Detritovores or grazers |  |

**2. Define the term pedicellaria.**

Pedicellaria -