**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?**

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 **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 -