CNIDARIA (Ch. 18)

1. Describe the evolutionary advances of cnidarians (including tissues, radial symmetry, and nerve tissue).

2. Describe the differences between polyp and medusa stages, and between solitary and colonial polyps.

3. Identity the 3 classes of Cnidaria and their distinguishing characteristics (esp. polyp vs medusa stages).

4. Describe the structure and development of coral reefs (including lagoons, coral atolls, and coral cays).

5. Describe the anatomy of cnidarians, including the epidermis, gastrodermis, blind sac, nerve net, mesoglea, oral vs aboral surfaces, pneumatophore, nematocyst, symbiotic green algae, and hydrostatic skeleton.

PLATYHELMINTHES (Ch. 19)

1. Describe the evolutionary advances of flatworms (incl. organs, bilateral, cephalization, and copulation).

2. Identify the 3 classes of Platyhelminthes and their distinguishing characteristics (esp. habitats, feeding).

3. Discuss the evolutionary advantages of bilateral symmetry and cephalization.

4. Discuss the parasitic adaptations exhibited by flukes and tapeworms (incl. scolex, strobila, & proglottid).

5. Describe the anatomy of planarians, including the mesoderm, eversible pharynx, gastrovascular cavity, ladder-type nerves, ganglia, 'eyespots', and flame cells.

NEMATODA (Ch. 2O)

1. Describe the evolutionary advances displayed by nematodes (including digestive tract and pseudocoel).

2. Discuss the advantages of a body cavity, and the differences between a pseudocoel and a true coelom.

3. Describe the ecological role, muscular contraction, parthenogenesis, and protandry practiced by nematodes.

MOLLUSCA (Ch. 21)

1. Describe the evolutionary advances of molluscs (incl. coelom, open circulatory system, shell, and radula).

2. Identify the 5 classes of Mollusca and their distinguishing characteristics (esp. shell, locomotion, feeding).

3. Describe the anatomy of the Hypothetical Ancestral Mollusc and its relationship to the other molluscs.

4. Discuss the process and advantages of torsion among gastropods (and detorsion among nudibranchs).

5. Discuss how the anatomy & behavior of nautilus, squid, & octopus are more advanced than other molluscs.

ANNELIDA (Ch. 22)

1. Describe the evolutionary advances of annelids (incl. closed circulatory system and metamerism).

2. Identify the 3 classes of Annelida and their characteristics (esp. habitats, setae, clitellum, & parapodia).

3. Discuss how metamerism and the hydrostatic skeleton evolved for burrowing in earthworms.

4. Describe how free-swimming polychaetes and tubeworms differ in their anatomy, feeding, & locomotion.

5. Describe the role of mutual pseudocopulation, clitellum, mucous cocoon, and epitokes during reproduction.

ARTHROPODA (Ch. 23)

1. Describe the evolutionary advances of arthropods (incl. tagmata, jointed exoskeleton, and wings).

2. Identify the body regions and mouthparts in the subphyla Chelicerata, Crustacea, and Mandibulata.

3. Identify the 7 classes of Arthropoda and their characteristics (esp. habitats and external anatomy).

4. Describe the process of autotomy, direct development, and complete and incomplete metamorphoses.

5. Describe the physiology of the arthropod shell (incl. growth, molting, and antagonistic muscles).

6. Describe the variety of structures found among arthropods, including biramous vs uniramous appendages,

   dorsal shield & telson, silk gland & spinneret, dorsal ganglia, compound eye, hemocoel, gills, and trachea.

7. Discuss the various reasons for the evolutionary success of arthropods, especially the insects.

ECHINODERMATA (Ch. 25)

1. Describe the distinctive features of echinoderms (incl. radial, endoskeleton, and water-vascular system).

2. Describe the anatomy and functioning of the water-vascular system and endoskeleton in echinoderms.

3. Identify the 5 classes of Echinodermata & their characteristics (esp. mouth, madreporite, arms, feeding).

4. Identify the differences between protostome and deuterostome development, and the phyla involved.

☞ DON'T FORGET TO BRING A NO. 2 PENCIL ✍