Biology 112 – Exam Review Answers

***Exam Review Sheet #3***

1. Each species is given a universally accepted name using binomial nomenclature. This reduces problems related to miscommunication (since everyone refers to the organism by the same name) and allows scientists to understand their relationships to one another since the names are taken from their GENUS and their SPECIES.
2. The two bacteria kingdoms contain unicellular organisms who lack a nucleus (prokaryotic) and who’s cells are simpler (lack many organelles). They can be autotrophic or heterotrophic.
3. Kingdom Archaebacteria consists of prokaryotic organisms whose cell wall lack peptydoglycan.
4. Kingdom Protista: Eukaryotic organisms that can be unicellular or multicellular, can be autotrophic or heterotrophic, can be sessile or motile (also known as the “leftovers Kingdom”)

Kingdom Fungi: Unicellular or multicellular heterotrophs that are eukaryotic and reproduce using spores. They are sessile and their cells have cell walls that contain chitin.

Kingdom Plantae: Multicellular eukaryotic organisms that are autotrophic and sessile. Their cells have cell walls that contain cellulose.

Kingdom Animalia: Multicellular eukaryotic organisms that are heterotrophic. Cells have no cells walls and most organisms in this kingdom are motile.

1. To live successfully on land, plants need to obtain water and carbon dioxide from the environment in order to produce glucose through the process of photosynthesis.
2. Water plays a key role in several aspects of a moss’ survival. Since they have no vascular system, they do not have the ability to transport water internally and rely on their ability to draw water from the air. This is made possible by living next to water systems where the air is more moist. Water is also used in the reproduction of mosses since they release their reproductive cells into the water in order to disperse them and reduce competition with their offspring.
3. Vascular Tissue is made up of Xylem and Phloem. Xylem is used to carry water from the roots to the rest of the plant whereas the phloem is used to carry nutrients in solution from the leaves to the rest of the plant.
4. Fruits aid in the dispersal of seeds by providing appetizing and nutritious elements that attract animals to eat them. The seeds are designed to pass unharmed through the animal’s digestive system and be excreted intact at another location, thus reducing competition with the parent organism.
5. A sponge relies on the movement of water to survive for several key reasons. First of all, the movement of water brings an ever-fresh supply of food, which is important because sponges are sessile. Second, the water current serves to provide oxygen and take away wastes so the sponge does not get poisoned. Lastly, the water current aids in the reproduction of the organisms, who release their sperm cells into the water to be carried to other sponges where they are filtered out of the water in the same way as nutrients.
6. Sponges are classified as animals because they have all the characteristics that define the animal kingdom – they are eukaryotic, multicellular, heterotrophic organisms with no cell walls.
7. Sponges feed by filtering nutrients from the water current they create using their choanocytes. The flagella-laden cells beat to draw in water through their pores, where it gets filtered and trapped food particles diffuse into nearby cells.
8. Cnidarians are soft-bodied animals with cnidocyte-laden tentacles arranged around a mouth. Cnidocytes are stinging cells that contain a spring-loaded nematocyst (stinger). Cnidarians have one of 2 major body plans – medusa (tentacles and mouth pointed down) and polyp (tentacles and mouth pointed up).
9. Cnidarians use their cnidocyte-laden tentales to paralyze prey. The prey is then drawn towards the mouth using the tentacles. Once through the mouth, it enters the GVC where the prey is digested extra-cellularly. The products of the digestive process are diffused into the cells lining the GVC. Wastes exit through the mouth.