**CLASSIFICATION/TAXONOMY**

**(Biology)**

### Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Fundamental Concepts and Skills** | Reading |
| **43. Describe the basis for the current system of classification**  a) **Classification-**grouping of information, objects and organisms based on similarities.  b) **Taxonomy-**grouping and naming of organisms   1. Linnaeus came up with the classification system we know today based on physical similarities. 2. Organisms are named using a 2 word system. 3. Scientific names are italicized or underlined, in Latin, have 2 words with **genus** as the 1st word capitalized and **species** as the 2nd word lowercased.. 4. Organisms are organized based on structural similarities, fossil evidence of common ancestors, on similarities in embryological stages, and on similarities of DNA and proteins. 5. Linnaeus has 7 levels:  Kingdom, Phylum, Class, Order, Family, Genus, and SpeciesPneumonic: King Phillip Came Over For Great Spaghetti h) The **more** levels 2 organisms have in common, the more **closely** related they are, the **less** levels they have in common the more **distantly** related they are.   1. There is a 3 domain system to classify organisms 2. Archaea-kingdom Archaeabacteria: are bacteria that live in extreme environments 3. Bacteria-kingdom Eubacteria; all other bacteria (Monerans) 4. Eukarya-include protista, fungi, plantae, animalia 5. **Dichotomous keys** are ways that scientists can determine the species based on its characteristics. | **GSB pgs. 484-503**  BML pgs 446-461 |
| **44. Describe the structure and replication of viruses.**   1. Viruses are tiny, non-living particles. 2. Viruses do not fulfill all criteria for life; including metabolism. 3. Viruses only replicate inside a living host. 4. Once inside a host cell, viral DNA takes over, making more viruses and destroying the host cell. 5. Examples of common viruses are: Ebola, Influenza (flu), HIV and the common cold. | **GSB pgs. 525-530**  BML pgs 478-484; 488-490 |
| **45. Describe metabolic and structural similarities and differences among**  **representative organisms in the 6 kingdoms.**   1. **Archaeabacteria** (ancient bacteria)-microscopic, **prokaryotic**; live in extreme environments (like near volcanoes, bottom of the ocean; most live in anaerobic environments. 2. **Bacteria(Eubacteria**) are microscopic, **prokaryotic**. Some are producers (autotrophs) and some are consumers (heterotrophs). Monera are usually unicellular. Examples include bacteria and blue-green algae. 3. **Protista** are eukaryotic, uni- or multicellular, lack complex organ systems and generally live in moist environments. Some are autotrophic and some are heterotrophic. Examples include amoebas, Paramecium and Euglena 4. **Fungi (fungus**) are eukaryotic and uni- and multicellular. They do not move and are generally decomposers. Examples include mushrooms and molds. 5. **Plantae (plants**) are eukaryotic and usually multicellular. They do not move and are autotrophic. Examples include grasses, shrubs, and trees. 6. **Animalia (animals**) are eukaryotic and multicellular. They usually are able to move and are heterotrophic. Examples include sea sponges, sea stars, fish, frogs, birds and mammals. | **GSB pgs. 499-503**  BML pgs 458-461  **GSB pgs. 516-524**  Pg 471-477; 485-487  **GSB pgs. 542-565**  Pg 497-520  **GSB pgs. 576-591**  Pg 527-542  **GSB pgs. 604-621**  Pg 549-653  **GSB pgs. 692-703**  Pg 657-668 |
| **46. Understand the different phylas of Invertebrates in the Kingdom Animalia and their distinguishing features.**  The phylums of the animal kingdom are as follows:   * Porifera-sponges (pg 664-667) **GSB pgs. 705-709** * Cnidaria-jellyfish, sea anemones, coral (pg 669-675) **GSB pgs. 710-715** * Platyhelminthes-Flatworms, tapeworms and flukes (pg 683-688) **GSB pgs. 726-730** * Nematoda-roundworms (pg 689-693) **GSB pgs. 731-736** * Annelida-earthworms and leeches (pg 694-700) **GSB pgs. 745-751** * Mollusca-snails, clams, octopus and squid (pg 701-708) **GSB pgs. 737-744** * Arthropoda-lobsters, crabs, spiders and insects (pg 715-732) **GSB pgs. 762-781** * Echinodermata-sea stars, and sea urchins (734-738) **GSB pgs. 792-801** | **GSB pgs. 705-807**  BML pgs 657-663 |
| **47.** **Understand the differences and similarities of the classes in phylum Chordata and distinguish their differences.**  Phylum Chorodata-have a dorsal nerve cord, and a notochord.  Subphylum Urochordata—sea squirts  Subphylum Vertebrata-animals with backbones   * Class Agnatha-jawless fish (pg 778) **GSB pg. 828** * Class Chondricthyes-sharks, skates and rays (pg 779) **GSB pgs. 829-830** * Class Osteichthyes-boney fish (pg 780-781) **GSB pgs. 830-831** * Class Amphibia-frogs, toads and salamanders (pg 782-789) **GSB pgs. 834-841** * Class Reptilia-crocodiles, alligators, turtles and snakes (pg 796-805) **GSB pgs. 852-860** * Class Aves-birds (pg 806-814) **GSB pgs. 861-869** * Class Mammalia-kangaroos, tigers, gorillas, humans etc. (pg 820-863) **GSB pgs. 880-897** | **GSB pgs. 802-897**  BML pages 745-769 |

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| Kingdom | Examples | Prokaryotic/ **Eukaryotic** | Autotroph/ **Heterotroph or BOTH** | Multicellular/ **Unicellular or BOTH** |
| **Archaeabacteria (ancient bacteria)** |  |  |  |  |
| **Bacteria** |  |  |  |  |
| **Protista** |  |  |  |  |
| **Fungi** |  |  |  |  |
| **Plantae**  **(plants)** |  |  |  |  |
| **Animalia**  **(animals)** |  |  |  |  |