**Semester 2 Final Vocabulary**

**Meiosis (Meiosis I, Meiosis II)** part of the process of sex cell formation, consisting of chromosome pairing and two cell divisions, in the course of which the diploid chromosome number becomes reduced to the haploid

**Diploid**: an organism or cell having double the basic number of chromosomes.

**Haploid**: an organism or cell having only one complete set of chromosomes, ordinarily half the normal diploid number

**Gamete** (Sperm, Egg): a mature sexual reproductive cell

**Zygote**: the cell produced by the union of two gametes, before it undergoes cell division.

**Homologous chromosomes**: having the same alleles or genes in the same order of arrangement:

**Crossing over**: the interchange of corresponding chromatid segments of homologous chromosomes with their linked genes.

**Alleles:**  A pair of alternative forms of a gene that occupy the same locus on homologous chromosomes and that control the production of the same protein.

**Dominant:** Some alleles are dominant over others and produce a phenotype regardless of the other allele

**Recessive:**  Some alleles are recessive over others and produce a phenotype only in the presence of the other allele

**Genotype:**  The genetic makeup of an organism (the alleles that an organism contains on its chromosomes).

**Phenotype:** The outward appearance and behavior of an organism.

**Homozygous:**  Having the same alleles at a particular gene locus on homologous chromosomes.

**Heterozygous:** Having different alleles at a particular gene locus on homologous chromosomes.

**Scientific Fact**: a truth known by actual experience or observation; something known to be true and verifiable by others.

**Hypothesis:** A prediction and an explanation for the occurrence of an observation.

**Scientific Theory:** A set of principles used to explain a group of facts. It has been repeatedly tested and is widely accepted. A theory can be used to make predictions about the natural world.

**Scientific Law:** A phenomenon of nature that has been proven to invariably occur whenever certain conditions exist or are met.

**Belief:** A personal mental attitude of acceptance of a proposition without any evidence to guarantee its truth.

Geology: The scientific study of the origin, history, and structure of the solid matter of The Earth

Geological time: the relative age of various geologic periods and the absolute time intervals as measured in Millions and Billions of years

Sedimentary rock: A rock formed by hardened sediment which was deposited in layers at the bottom of a sea or lake.

**Plate Tectonics:** The dynamics of continental plate movement on the Earth

Sequential (or Relative) time: Time determined by the placing of events in a chronologic order of occurrence relative to each other

Absolute time: the actual time (usually measured in years) as determined by radioactive decay of elements.

Isotope: any of two or more forms of a chemical element, having the same number of protons in the nucleus but having different numbers of neutrons in the nucleus

Half Life: the time required for one half the atoms of a given amount of a radioactive substance to disintegrate

Radioactive decay: Spontaneous disintegration of a radionuclide accompanied by the emission of ionizing radiation in the form of alpha or beta particles or gamma ray

**Natural Selection:** Differential reproductive success of phenotypes resulting from interaction with the natural environment.

**Phylogeny:** The evolutionary history of a species.

**Biodiversity:** Number and relative abundance of species in a biological community. Example: Seven species of grass plants in the same prairie.

**Species:** A group of individuals with similar anatomical characteristics and capable of interbreeding to produce fertile offspring.

**Variation**: Differences in characteristics among individual species.

**Adaptation**: Any alteration of structure, behavior, or function that makes an organism more reproductively successful.

**Extinction**: Coming to an end or dying out of a species.

**Biological Evolution**: Changes in life forms over time.

**Speciation**: The evidence of new species evolving.

Artificial Selection: Human intervention in animal or plant reproduction to select for certain desirable traits.

**Cladogram:** a branching diagram depicting the successive points of species divergence from common ancestral lines

**Body organ system**: A group of related organs and tissues whose goal is to perform a specific function.

**Organ**: is a group of tissues that perform a specific function or group of functions.

**Tissue**: a group of similar cells and cell products forming a definite kind of structural material with a specific function within a multicellular organism

**Cell**: a usually microscopic structure containing nuclear and cytoplasmic material enclosed by a semipermeable membrane and, in plants, a cell wall; it is the basic structural unit of all organisms