Study Guide for Biology Midterm Exam 19 – 20

Unit A

Theories, constants, hypotheses, conclusions, independent variable, pH scale, element, compound, molecule, ion, activation energy, reactants in a chemical equation, products in a chemical equation, what are the four main groups of carbon-based molecules?, cohesion

Unit B

Function of mitochondria, concentration gradient, selective permeability, Transmission Electron Microscope (TEM), Scanning Electron Microscope (SEM), Light Microscope, diffusion, osmosis, what structures are present in all cells?, what structures are only present in animal cells and only in plant cells?, active and passive transport, what are the 3 principles of the cell theory?

Unit C

Know the equation for photosynthesis, ATP production in aerobic respiration, anaerobic respiration and fermentation, photosynthesis, glycolysis, what is the main function of the upper surface of leaves?, what structures are found on the underside of leaves and what?

Unit D

Know what structure in the flower produces pollen and where it is located, Know which structure in the flower attracts insects and aids in pollination and where it is located, mitosis, cytokinesis, diploid, haploid, what is meiosis and be able to identify it in a picture, sexual reproduction, binary fission, budding, fragmentation, asexual reproduction, how many chromosomes are in a human gamete?, what occurs during interphase?

Unit E

Semiconservative as it relates to DNA Replication, know where the bonds are in DNA (hydrogen bonds and covalent bonds), what is the central dogma of molecular biology?,

Unit F

Be able to perform Punnett squares, heterozygous, homozygous, dominant, recessive, sex-linked, carrier, blood type, Mendel determined that individual traits are inherited as discrete units., XX is a female & XY is a male, what is a pedigree & be able to find an unknown genotype in a pedigree, karyotype, why do we see more sex-linked disorders in males?, what do the letters within a Punnett square represent?, genotype, phenotype, testcross

Unit G

Fitness, evolution, variation, adaptation, fossil, what is the selective agent in natural selection?, what did Charles Darwin observe in the finch populations on the Galapagos Islands?