

BIOLOGY I: No AP or second year students in this category. 60 multiple choice questions per exam.

JANUARY EXAM - Carbon Compounds and basic chemistry including the chemistry of water and pH, Chemical Reactions, Enzymes, Cell structure and function, Levels of Cellular Organization, organelles, Prokaryotic and Eukaryotic, Cellular and Intracellular transport, Homeostasis, Cellular Energy Flow, Photosynthesis and Respiration, Cellular Division- mitosis, Cell Regulation.

FEBRUARY EXAM - Structure and function of nucleic acids; roles of DNA, protein synthesis, Meiosis, chromosomal analysis (pedigree, karyotyping, and DNA sequencing), Mendelian genetics, one and two factor crosses, mutations, Genetic engineering, Gene regulation and expression, Mutation and causes, Exponential growth, DNA inheritance of traits, Variation of Traits, cause and effect, Bioinformatics.

MARCH EXAM - Evidence for evolution: Molecular evidence (nucleotide sequence analysis, amino acid sequence analysis), Comparative anatomy and comparative embryology, Fossil record; Hardy Weinberg; Taxonomy: Cladograms and Phylogenetic Trees, Natural Selection, Genetic change in a population, Geologic Time scale, Patterns and causes of Evolution, Carrying capacity of a population, Evidence of diversity, Adaptation of organism to the environment.

APRIL EXAM - Interactions of autotrophs and heterotrophs; Flow of energy through an ecosystem; Limiting factors in Biomes; Cycles of Matter; Symbiosis; Ecosystem models of energy flow; Social Interaction and group behavior of organism; Succession; Ecological experimentation and analysis; Factors affecting biodiversity in a population; Human Influence on ecosystems.