**Keystone Exam Module 1 & 2 Topics**

**Module 1**

**Unit 1: Intro to Biology**

-Characteristics of Life

-Levels of biological organization

-Terms: hypothesis, theory, law/principle, observation, inference

**Unit 2: Biochemistry**

-Water properties

-Carbon

-Dehydration synthesis and hydrolysis

-Macromolecules (carbohydrates, lipids, proteins, & nucleic acids)

-Enzymes & how factors can affect an enzyme

**Unit 3: Bioenergetics**

-ATP

-Photosynthesis in chloroplast

-Cellular Respiration in mitochondria

**Unit 4: Cytology, Homeostasis, and Transport**

-Prokaryotic vs. Eukaryotic

-Cell organelles

-Passive transport (simple diffusion or facilitated diffusion such as osmosis)

-Active transport (protein pump, endocytosis or exocytosis)

-Homeostasis

**Module 2**

**Unit 5: Cell Division**

-Events of the cell cycle

-Mitosis vs. Meiosis

-Crossing over, nondisjunction, & mutations

**Unit 6: DNA & Genetics**

-DNA replication

-Relationship between chromosomes, genes, alleles, and DNA

-Transcription and translation

-All patterns of inheritance: complete dominance, incomplete dominance,

codominance, sex-linked, polygenic, multiple alleles

-Genetic engineering (selective breeding, gene splicing, cloning,

genetically modified organisms, gene therapy)

**Unit 7: Ecology**

-Levels of ecological organization

-Abiotic & biotic factors in aquatic & terrestrial biomes

-Food chains, food webs, and energy pyramids

-Nutrient Cycles (water, carbon, oxygen, & nitrogen)

-How ecosystems change after a disturbance (succession)

-Limiting factors

**Unit 8: Evolution**

-Natural selection

-Reproductive isolating mechanisms (geographic, behavioral, temporal)

-Genetic drift, founder effect, bottleneck effect, gene flow, speciation

-Evidence for the theory of evolution

**Keystone Exam Layout**

**Test Layout**

-There will be around 36 multiple choice questions and 2 constructed response questions overall

-The test is broken down into modules.

-On the next page, there is a list of the exact topics for module 1 & module 2

-The first day (Monday, May 21st) will be module 1

-Around 18 multiple choice and 1 constructed response

-The second day (Tuesday, May 22nd) will be module 2

-Around 18 multiple choice and 1 constructed response

**Test Tips**

-Read slowly and take your time!

-They try to trick you – stick with what you know and don’t second guess yourself.

-Oftentimes, they will add extra information that is not relevant, look for the parts of the question that you are familiar with and go from there.

-Use the process of elimination!

-TRY YOUR BEST! As I have said multiple times, the keystone exam is a requirement for graduation. If you do not pass this time, you will be put into a keystone review class and have to take the exam again and again until you pass.

**Content-Specific Tips**

-If you see anything about **energy** – it probably goes with **ATP**

-If you see anything about **sunlight** – it probably goes with **photosynthesis**

-If you see anything about **energy transformations** – it goes with either **photosynthesis** (light 🡪 chemical)or **cellular respiration** (chemical 🡪 chemical)

-If you see anything about **modifying** – it probably goes with **golgi apparatus**

-If you see anything about **regulation** – it probably goes with **plasma membrane & transport**

-If you see anything about **speeding up reactions** - it would definitely go with **enzymes**

-If you see anything about **proteins synthesis** – it probably goes with **ribosomes**

-If you see anything about **fitness** – it probably goes with **natural selection**

-If you see anything about **change over time** – it probably goes with **evolution**