**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**