Biology EOC Review
Goal 2: Learner will develop an understanding of the physical, chemical and cellular basis of life.

2.01: Compare and contrast the structure and functions of the following organic molecules: carbohydrates, proteins, lipids, nucleic acids.

Macromolecules	Function	Subunits
Carbohydrates		
Proteins		
Lipids		
Nucleic Acids		

Specific Molecule	Function	Subunits
Starch	**Plant storage of energy**	**Simple sugar**
Cellulose	**Plant cell walls**	**Simple sugar**
Insulin	**Blood glucose levels**	**Amino acids**
Glycogen	**Animal starch**	**Simple sugars**
Glucose	**Energy broken down in mitochondria for ATP**	
Enzymes	**Speed up chemical reactions**	**Amino acids**
Hemoglobin	**Transport oxygen in the blood**	**Amino acids**
Fats	**Long-term energy storage**	**Fatty acids and glycerol**
DNA	**Genetic info**	**Nucleotides (sugar, phosphate, base)**
RNA	**mRNA: made in nucleus during transcription; in a pattern of the DNA molecule** **tRNA: brings amino acids to the ribosome during translation**	**Nucleotides (sugar, phosphate, base)**

Nutrient	Type of Test	Positive Test	Example of…?
Starch	**Iodine**	**Black**	**Potato, crackers, corn starch**
Lipids	**Paper bag**	**Greasy spot**	**Oil, butter**
Monosaccharides	**Benedicts**	**Yellow, red**	**Honey, juice**
Protein	**Biuret**	**Violet, lavender**	**Egg whites**

2.02: Investigate and describe the structure and function of cells.

1. Give the structure and function of each of the following: Nucleus, plasma membrane, cell wall, mitochondria, vacuoles, chloroplasts, and ribosomes draw and label a cell with these parts.
   Nucleus: darkly shaded large spot; contains DNA; brain of the cell
   Plasma (cell) membrane: phospholipids, proteins, carbs; regulates transport
   Cell wall: plant cells; cellulose; structure
   Mitochondria: plants and animals; lots of folds; breaks down glucose into ATP
   Vacuoles: storage
   Chloroplasts: bean-shaped with stacks of "coins"; photosynthesis