Biology EOC Review Answers

Goal 2:

Carbohydrates	Energy Source	Monosaccharides
Proteins	Enzymes/Structure	Amino Acids
Lipids	Plasma membrane component	Glycerol/Fatty Acids
Nucleic Acids	Genetic Info/Protein synthesis	Nucleotides

Starch	Release Energy	Carbs
Cellulose	structure of cell wall	Carbs
Insulin	lowers blood glucose	Protein
Glycogen	Storage of simple sugars	carbs
Glucose	Energy	carbs
Enzymes	Speed up reactions	proteins
Hemoglobin	Carries oxygen	protein
Fats	energy supply and insulation	lipids
DNA	code the way proteins turn on/off	nucleic acids
RNA	carrier genetic info	nucleic acids

2.02

Describe the following nutrient tests:

Nutrient	Type of Test	Negative	Positive
Starch	Iodine		turns blue/black
Lipid	put on paper it turns translucent		brown paper turns clear
Monosaccharide's	Benedicts solution	Same	blue to green yellow, orange or red
Protein	Biuret reagent		Turns from pale blue to lavender

Cell Part and Letter	Structure Description	Function
Nucleus	Nucleus is surrounded by a nuclear envelope composed of 2 membranes. These pores allow material to move into and out of the nucleus	Controls most cell processes and contains the hereditary information of DNA
Plasma Membrane	Double layered sheet called a lipid bilayer	Regulates what enters and leaves the cell and also provides protection and support
Cell Wall	Outside of Cell Membrane	Used for support and protection
Mitochondria	Outer and inner membrane: inner membrane is folded up inside the organelle	Power house, convert chemical energy stored in food into compounds that are more convenient for the cell to use..
Vacuoles	Sacklike structure	Storage of water, salts, proteins, and carbs.
Chloroplasts	Located inside plant cells surrounded by two membranes. Inside the organelle are large stacks of other membranes, which contain the green pigment chlorophyll	Capture the energy from sunlight and convert it into chemical energy in a process called photosynthesis.
Ribosomes	Small particles of RNA and protein found throughout the cytoplasm	Making proteins by following coded instructions that come from the nucleus.

Microscope Use:

1. B
2. F
3. D
4. E
5. G
6. A
7. C
8. H

2. The image from the objective becomes the object for the eyepiece. The total magnification is therefore, 10 X 40 = 400

3. upside down and backwards

Cells from the human body:

4. Cells, Tissues, Organs, Organs Systems

2.Sperm Cell – it's tail- mitochondria
3. Red Blood Cell – to carry oxygen to all the tissues from the lungs
4. White blood cell
4. Muscle cell- they contract and then relax to move the parts of the body
5. Nerve cell – the impulse travels rapidly down the axon away from the cell body and toward the axon terminals

Hormones:

1. Endocrine system
2. directly through the blood stream
3. chemical messengers produced by the cells bind to receptors on the plasma membrane of other cells or enter other cells and alter the metabolic function of those cells.
4. regulate the endocrine system

Diagram of proteins and molecules embedded in a cell membrane:

1. double layered sheet called a lipid bilayer.
2. gives it a flexible structure that forms a strong barrier between the cell and its surroundings. Proteins from channels and pumps that help to move material across the cell membrane. Charbohydrates act like chemical identification cards, allowing individual cells to identify one another.
3. the cell controls what goes in and out of itself.

2.03

1. In the first beaker the solvent is more concentrated on the left side of the membrane, as a result the water diffuses as shown in the 2nd beaker to the area of lower concentration on the right side.
2. too big to get through
3. it decides what passes through
4. right
5. left
6. high to low
7. to the left
8. more concentrated to less concentrated

9. The pressure exerted by the flow of water through a semipermeable membrane separating two solutions with different concentrations of solute.
10. a. to the outside b. to the inside
11. a state of equilibrium in which all body systems are working and interacting in a appropriate way.
12. the feedback mechanisms is what they use to keep homeostasis. It tells the body what helps if the enivironment has changed.

	Passive transport	Active Transport
Requires energy?	No	Yes
Low to high concentration or high to low concentration	High to low	Low to high
Examples	Diffusion	phagosytosis

Energy:

1. Cellular respiration
2. active transport, protein synthesis and muscle contraction by breaking the bond between the 2nd and 3rd phosphates

2.05

A. Water + Carbon Dioxide → sugar + oxygen
B. sugar + oxygen → carbon dioxide + water
C. sugars → ethyl alcohol + carbon dioxide

1. A
2. C
3. B
4. A To capture sunlight to make energy
5. A energy
6. Plant
7. Both
8. Things that do not require oxygen

9. Photosynthesis
10. cellular respiration
11. light, water, CO2 ,temp, and oxygen
12. sugars and energy
13.

14. organisms that require oxygen

15. cytoplasm of the cell

16. mitochondria where oxygen is used

17. cellular respiration; aerobic

2.04

1. Lock and Key
2. Ph and temperature
3. Proteins
4. Each type of enzyme only works on one type of substrate molecule
5. They are not used up or changed in a reaction
6. to act as catalysts; without enzymes chemical reactions would occure too slowly to sustain life.

Goal 3