List the seven activities of all living cells	1. Adaptation 2. Reproduce 3. Growth 4. Organization 5. Metabolism 6. Irritability 7. Contractility
What is anabolism?	Joining small molecules (amino acids) into larger protein molecules to FORM MORE COMPLEX SUBSTANCE (steroids)
What is catabolism?	Living cells break down substances into SIMPLER SUBSTANCES
Define Metabolism	All chemical reactions in the body
Define Anatomy	Study of the structure of body parts in relation to others

What is physiology?	Study of the function of body parts
What are the four main tissue types?	1. Epithelium (glands, skin) 2. Muscles 3. Connective (bones, tendons) 4. Nervous (brain, nerves, spinal cord)
What are electrolytes?	Chemical substances that ionize, dissociate in water, and are capable of conducting electrical current
What are examples of electrolytes?	Salts, Acids, and Bases
What are electrolytes used for in the body?	Nerve impulse transmission and Muscle Contraction

What do we call groups of similar cells?	Tissues
What do we call groups of different organs?	Organ System
Function of integumentary system include:	1. Protects 2. Synthesizes vitamin D 3. Houses pain receptors, sweat and oil glands
Functions of the skeletal system:	1. Protects/Supports body organs 2. Framework 3. Movement 4. Blood cells formed in bones 5. Bones store minerals
Functions of the muscular system:	1. Maintains posture 2. Produces heat 3. Motion

Function of the nervous system:	1. Respond to internal and external changes
Function of the endocrine System:	1. Secrete hormones
Functions of the cardiovascular system:	1. Transport blood 2. Heart pumps blood
Functions of the lymphatic system:	1. Picks up leftover fluid from blood vessels 2. Houses white blood cells 3. Immune response
Functions of the respiratory system:	1. Keeps blood oxygenized 2. Removes co2 3. Gas exchange

Function of the digestive system:	1. Break down food
Functions of the urinary system:	1. Eliminates wastes 2. Regulates water, electrolytes and acid-bases 3. Balance of blood
The function of the male/female reproductive system is to:	Produce offspring
What are the four major classes of organic molecules in the cell?	1. Lipids 2. Proteins 3. Nucleic acids 4. Carbohydrates
Carbohydrates are __-__% of cell mass	1-2%

What do carbohydrates contain?	Carbon, hydrogen and oxygen
Proteins are __-__% of cell mass	10-30%
What do proteins contain?	1. Enzymes 2. Hemoglobin 3. Conractile proteins of muscle
The largest molecules in the body	DNA and RNA
DNA and RNA are:	Nucleic Acids

Lipids contain:	1. Triglycerides 2. Phospholipids 3. Sterioids
Where are phospholipids found?	The plasma membrane
What are modified triglycerides?	Phospholipds
The ability to maintain a stable internal environment even though the outside world is changing	Homeostasis
What are the basic constituents of protoplasm?	Main component: Water -Organelles, chromosomes, proteins, amino acids

Power plant of the cell:	Mitochondria
True or False: Mitochondria contains their own DNA and RNA and Ribosomes and are able to reproduce themselves	True
Site of protein sythesis:	Ribosomes
What 1. Transports protein 2. Stores, synthesizes materials and minerals 3. Manufacture Ribosomes	Rough ER
What 1. Packages proteins for transport 2. Releases calcium 3. Synthesizes membrane phospholipds	Smooth ER

"Traffic Director" for cell proteins that package proteins and lipids made at the rough ER	Golgi Complex
Vesicles that contain proteins destined for export:	Secretory Granules (storage compartments)
Spherical membrane organelles that is the "demolition crew" for non-useful tissues, and calcium in bones	Lysosomes
Small barrel shaped organelles that form the bases of cilia and flagella	Centrioles
A selectively permiable membrane that determines what goes in and out of organisms	Cytoplasmic Membrane

Seperates nucleoplasm from cytoplasm	Nuclear membrane
Site where ribosomes are made:	Nucleolus
Prevents chromatin strands from tangling during movement of cell division	Chromosomes
Chain of 25 amino acids	Polypeptide
Main concept of cell theory	Cell is the basic structural and functional unit of living organisms

Exaggerates stimulus until it stops action (blood clotting)	Positive Feedback
Monitors the environment and responds to changes (stimuli)	Receptors
Determinds the set poing where the variable is maintained	Control Center
Provides the means to respond to the stimuli	Effector
What are the fundamental principles?	1. Casuality 2. Uniformity

Anything that has weight and occupies space	Matter
Four major elements (atoms) in the body	1. Oxygen 2. Carbon 3. Hydrogen 4. Nitrogen
Protons have a _____ charge	Positive
Electrons have a _____ charge	Negative
Neutrons have a _____ charge	Neutral

Organs that contains epithelial, smooth and connective tissue	Blood vessels
Cells without a nucleus (ex: bacterium)	Prokaryotic
Cells with a nucleus (ex: animal/plant cells)	Eukaryotic
Protazoan	Unicellular (one cell)
Metazoa	Multicellular

Wants to shuffle information to make it different	Meiosis
Ensures every cell has the same genetic information	Mitosis
Citric Acid Cycle in mitochondria	Krabs Cycle
Potential energy:	Stored in glucose
Kinetic Energy:	Active energy

Breaking down of sugars in the prescense of oxygen:	Aerobic Glycologist
What are the stages of Mitosis? (IPMAT)	1. Interphase 2. Prophase 3. Metaphase 4. Anaphase 5. Telophase
Longest stage of mitosis where DNA is replicated	Interphase
In order for the cell to go to cell division, it has to cross this point:	G1 phase (part 1 of interphase)
Stage of interphase where actual DNA is replicated	S Phase

Stage of interphase where growth and final preparations for cell divisions are made	G2 phase
What are the 3 phases of interphase in order?	1. G1 2. S 3. G2
What is the result if mitosis?	Two daughter cells
Protein is a _____	Polar molecule
Define Polar molecule	Cant disolve in water

True or False: Nonpolar molecules can't disolve in water	True
Lipids are _____	Nonpolar
The prefix philic means:	to love
The prefix phobic means:	to hate
If the sodium potassium pump stops:	Too much sodium will be inside and the sodium levels will balance with eachother. Death of cell occurs

Define Phagocytosis:	Cell eating
Define Pinocytosis:	Large amounts of fluid entering cell (Cell drinking)
True or False: Cells don't talk, only respond to signals	True
Enzymes are organic _____	Catalysts
_____ are substances that speed up chemical reactions but aren't changed by the reaction	Catalysts

Each kind of reaction is controlled by a _____ _____	Specific Enzyme
True or False: Enzymes that are produced in a cell will determine what reactions go on in that cell	True
Carriers of genes	Chromatin
Contains oxidase-detoxifies or neutralizes damage	Peroxisomes
Metabolism requires ____ and _____	ATP and Enzymes

What is ATP?	Adenosine Triphosphate (Stored Energy)
____ _____ is reversible unfolding of proteins due to drops in pH and/or increased temperatue	Protein Denaturation
Enzymes are _____	Globular proteins
Pair of shared electrons:	Covalent bonds
Bond between H and the negative part of another atom:	Hydrogen Bond

Complete transfer of electrons:	Ionic bonds
_____ resist abrupt changse in pH of the body fluids	Buffers
Stored in carbohydrate energy	Chemical Energy
Type of energy mostly in the nervous system	Electrical Energy
Type of energy mostly in the muscles	Mechanical Energy

Type of energy mostly in the skin	Radiant (electromagnetic)
Five nitrogen bases that contribute to nucleotide structure:	Adenine (A) Guanine (G) Cytosine (C) Thymine (T) Uracil (U)
Arrangement of chromosomes along a plane midway between poles	Metaphase Plate
Centromeres of the chromosones split during ____	Anaphase
Nucleoli disappear, centriole pairs seperate and mitotic spindle is formed	Prophase

Any movement of a substance through a cell membrane that requires energy	Active Transport
A sodium potassium pump is an example of a:	Primary Active Transport
Solutions with the same solute concentrations as that of the cystol	Isotonic
Solutions having greater solute concentration than that of the cystol	Hypertonic
Solutions having lesser solute concentration than that of the cystol	Hypotonic

Movement of material from an area of high concentration to lower concentration	Diffusion
Water movement only; Net movement of water across a semipermiable membrane in the direction of lower concentration of water	Osmosis
Minor component in a solution:	Solute
Usually a liquid	Solvent
Scientific reasoning is:	1. Inductive 2. Deductive