**CELLS: CHAPTERS 6 & 7 MID-TERM EXAM REVIEW 2012**

**\**ALL OF THE QUESTIIONS SHOULD BE ANSWERED AS A TYPE II.***

**CHAPTER 6**

1. Explain the structure of an atom. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: matter, subatomic particles, proton, neutron, electron, neutral, positive, negative, charge, and nucleus.
2. What is an element and how can you find information from the periodic table of elements? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: atom, physical and chemical means, periods, groups, valence electrons, mass #, atomic #, protons, electrons, neutrons, and symbol.
3. COMPARE AND CONTRAST isotope and radioactive isotope. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: protons, electrons, neutrons, radiation, nucleus, half-life, and mass number.
4. How is a compound different from an element (include examples)? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: fixed ratio, chemically, physically, physical means, chemical means, chemical formula, number of atoms.
5. What is a chemical bond and describe the difference between ionic bond and covalent bond using examples. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: electrons, energy levels, valence electrons, losing, gaining, sharing, molecule, ion, cation, anion, metals, nonmetals, positively, negatively.
6. What is a chemical reaction and how is it writing in an equation? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: atoms, chemical bonds, chemical formulas, reactants, products, law of conservation of mass, and balanced.
7. Use labeled graphs to help explain the difference between endothermic and exothermic reactions. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: released energy, absorb energy, higher, and lower.
8. What are enzymes and how do they function? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: proteins, catalyst, activation energy, minimum, substrates, active site, reactants, products, and enzyme-substrate complex.
9. Describe why water is a polar compound and its unique properties. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: solvent, dissolve, adhesive, cohesive, capillary, dense, surface tension, oppositely charged, negative charge, and positive charge.
10. Describe what a mixture is and COMPARE AND CONTRAST homogenous and heterogeneous mixtures(include examples). BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: solution, solvent, solute, uniform, suspensions, colloids, and distinct.
11. Describe the pH Scale and the difference between acids and bases. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: hydrogen ions, hydroxide ions, 1-14, neutral, acids, bases, buffers.
12. COMPARE AND CONTRAST a hydrolysis reaction and a dehydration reaction. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: release, requires, water molecule, monomer, polymers, and organic molecules.
13. Describe carbohydrates structure and function. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: carbon, hydrogen, oxygen, monosaccharide, disaccharide, polysaccharide, and energy.
14. Describe the structure and function of Lipids. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: C, H, O, fatty acids, fats, phospholipids, steroids, hydrophobic, saturated, unsaturated, phospholipids, glycerol, phosphate, cholesterol, and hormones.
15. Explain the structure and functions of proteins. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: amino acids, C, N, O, N, S, central carbon, hydrogen atom, amino group, carboxyl group, variable group, peptide, dipeptide, polypeptide, and 20.
16. Explain the structure and function of nucleic acids. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: C, H, O, N, P, nucleotides, DNA, RNA, genetic, phosphate, nitrogen base, and sugar.

**CHAPTER 7**

1. Describe the early history of how the cell was discovered and the principles of the cell theory. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: Hooke, Leeuwenhoek, cell theory, Schwann, Schleiden, Virchow, and microscope.
2. COMPARE AND CONTRAST the different types of microscopes making sure to describe what each microscope can view. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: light microscope, electron microscope, TEM, SEM, STM, AFM, eyepiece lens, objective lens, total magnification, and 500,000.
3. What do all cells have in common and COMPARE AND CONTRAST Eukaryotic and prokaryotic cells. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: plasma membrane, genetic information, energy, nucleus, membrane bound organelles, bacteria, plants, animals, protozoa, algae, yeast, and unicellular.
4. Describe the endosymbiont theory in detail. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: eukaryotic, prokaryotic, diversity, mitochondria, DNA, divide, protection, and energy.
5. Explain how the plasma membranes structure causes it to be selectively permeable. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: homeostasis, structure, phospholipid bilayer, tails, head, phosphate, fatty acid, polar, nonpolar, hydrophilic, hydrophobic, attracted, repelled, and watery environments.
6. What is the plasma membrane referred to as a fluid mosaic model? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: proteins, lipids, cholesterol, phospholipids, and plasma membrane.
7. COMPARE AND CONTRAST where chemical processes occur inside of cells. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: prokaryotic, eukaryotic, cytoplasm, membrane bound organelles, protein synthesis, energy transformation, and cell division.
8. Describe the framework of a cell. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: cytoskeleton, cytoplasm, microtubules, centrioles, microfilaments, protein, and move.
9. Explain the structure and Function of the Nucleus. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: nuclear envelope, nuclear pores, chromatin, nucleolus, DNA, protein, and ribosome.
10. Describe the importance of ribosomes. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: proteins, RNA, prokaryotic, eukaryotic, cytoplasm, rough ER.
11. COMPARE AND CONTRAST ER AND GOLGI APPARATUS. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: Rough, smooth, protein, Golgi apparatus, vesicles.
12. COMPARE AND CONTRAST vacuoles and lysosomes. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: plant cells, animal cells, store, digest, enzymes, bacteria and viruses.
13. Compare the mitochondria to electricity in your home. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: powerhouse, convert, inner membrane, and sugar.
14. Describe the role of Chloroplast in plant cells and briefly discuss other plastids. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: light energy, plants, chemical energy, photosynthesis, thylakoids, chlorophyll, pigment, and chromoplast.
15. How is the cell wall different than the plasma membrane? BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: prokaryotic, animal, plant, cellulose, carbohydrate.
16. COMPARE AND CONTRAST cilia and flagella. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: prokaryotic, eukaryotic, movement, microtubules, 9 + 2 configuration, and protein.
17. COMPARE AND CONTRAST diffusion, facilitated diffusion, and osmosis. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: concentration, greater(high), lesser (low), energy, dynamic equilibrium, rate of diffusion, concentration, temperature, pressure, transport proteins, channel proteins, carrier proteins, passive transport, ions, and water
18. COMPARE AND CONTRAST isotonic solution, hypertonic solution, and hypotonic solution. USE LABLED DIAGRAMS TO HELP ANSWER THE QUESTIOIN. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: solute, solvent, solution, equilibrium, higher concentration, lower concentration, cytolysis, and plasmolysis.
19. Describe the sodium potassium ATPase pump as a type of Active Transport. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: concentration gradient, energy, carrier proteins, homeostasis, sodium, potassium, cellular energy,
20. COMPARE AND CONTRAST endocytosis and exocytosis. BE SURE TO USE TO FOLLOWING TERMS and UNDERLINE THEM WHEN USED: vacuole, vesicle, waste, hormones, plasma membrane, energy, and homeostasis.