

PART 1: Review Biology & Chemistry

1. Describe what an isotope is. Propose an explanation as to why isotopes may be useful for tracing molecules through biological processes.
2. Identify the three types of chemical bonds and how they are different.
3. Contrast exothermic and endothermic reactions (anabolism vs catabolism)
4. Describe the role of each organelle in the overall function of the cell - Mitochondria, Golgi Body, Ribosome, Endoplasmic Reticulum, Vacuole, Plasma Membrane, Lysosome
5. Explain the structure of the cell membrane and how its structure allows it to control what goes in and out of the cell.
6. Explain the importance of each macromolecule to the overall function of the cells and thus the human body - Protein, Carbohydrate, Lipid, Nucleic Acid
7. Explain the role of enzymes in biochemical reactions, including the importance of their specificity.

8. Differentiate between dynamic and static equilibrium.
9. Differentiate between positive and negative feedback loops. Include an example of each.
10. Describe the six types of cellular transport, including an example of a substance transported for each.
11. Explain the importance of cell signaling and communication in maintaining homeostasis.
12. Explain the importance of specificity in receptor proteins. Include the difference between intracellular and membrane receptors and the types of ligands they would bind to.
13. Explain several types of responses that can be triggered by a transduction pathway.

PART 2: Root Words

Root words are the foundational building blocks of anatomical and medical terminology. They are critical because knowing a single root allows you to decipher dozens of unfamiliar terms. For example, the root *cardi-* (heart) allows you to instantly understand the subject of terms like *cardiopathy* (heart disease) or *cardiomegaly* (heart enlargement) even if you have never seen them before.)

Understanding a few dozen roots allows you to decipher hundreds of unfamiliar medical words without rote memorization. Students who master root words often perform better in coursework because they can break down complex structures (e.g., *myocarditis* into *myo-* muscle, *cardi-* heart, and *-itis* inflammation) to understand their meaning instantly.

** You will have a test over root words within the first 2 weeks of class to ensure that you have learned and understand the meanings of complex terminology related to Anatomy & Physiology.**

Greek Root or Latin Root	Meaning	Example & Definition
A-		
Ab-		
Ad-		
Adip-		
Anti-		
Arthr-		
Auto-		
Axill-		
Bi-		
Cardi-		
Cepha-		
Cerebr-		
Chond-		

Greek Root or Latin Root	Meaning	Example & Definition
Circum-		
-Cyte		
Derm-		
Dys-		
Ecto- or Exo-		
-Ectomy		
Endo-		
Entero-		
Erythr-		
Gastro-		
Gen-		
Hema-		
Hepa-		
Hyper-		
Hypo-		
Inter-		
-Itis		
Lacrim-		
Lact-		
Leuk- or Alb-		
Macro-		

Greek Root or Latin Root	Meaning	Example & Definition
Mela-		
Meta-		
Micro-		
Myo-		
Neur-		
Ocul-		
-Ology		
-Oma		
-Opsy		
Or(o)-		
-Osis		
Oste-/Os-		
-Paresis		
Path-		
Pector-		
Peri-		
-Phage-		
-Phile		
-Pod-/Ped-		
-Poeisis		
Post-		

Greek Root or Latin Root	Meaning	Example & Definition
Pre-		
Psych-		
Pulmon-		
Quad-		
Re-		
Rect-		
Ren-		
-Scler		
Scoli-		
-Scopy		
Semi-		
-Stalsis		
-Stomy		
Sub-		
Super-/Supra-		
Therm-		
Thromb-		
Tri-		
-Trophy		