

PROJECT – THE LIVING CELL POSTER

Honors Biology

TITLE Included:

Chapter 1:

6 kingdoms of life

- Illustrate an organism for each kingdom (does not need to be in context of cell)

Chapter 2

Water

- Water (polarity / H bonds)

Chapter 3

Functional Groups

- Functional Groups

Reactions

- Hydrolysis
- Dehydration

Biomolecules

- Monosaccharides / Carbohydrates
- Amino acids / Proteins (primary – quaternary structure)
- Lipids / Fatty Acids (saturated vs. unsaturated)
- Nucleotides / Nucleic Acids
- “Central Dogma of Life” (Gene to protein)

Chapter 4

Organelles

- Nucleus
- Nucleolus
- Ribosomes
- Endoplasmic Reticulum (smooth vs. rough)
- Golgi apparatus
- Mitochondria
- Chloroplast
- Vacuole
- Lysosome
- Plasma Membrane
- Cell Wall
- Cytoskeleton
- Cytoplasm
- Prokaryote* (For Comparison- see also kingdoms)

Chapter 5

Membrane Structure

- Phospholipid Bilayer
- Transport Proteins
- Glycoproteins
- Cellular junctions

Transport

- Passive Transport

(diffusion vs. facilitated diffusion (compare types of facilitated))

- Osmosis (hypotonic, isotonic, hypertonic)
- Active Transport (Protein pumps, exocytosis vs. endocytosis)

Energy

- ATP Structure
- Energy Coupling (redox)
- Endergonic Reaction (photosynthesis)
- Exergonic Reaction (cellular respiration)
- Enzyme Action

Chapter 6

Mitochondria

- All Features Labeled

Aerobic Respiration

- Steps of Cellular Respiration (locations, reactants, products)

Anaerobic Respiration

- Steps of Fermentation (locations, reactants, products)

Chapter 7

Chloroplast

- All Features Labeled

Photosynthesis

- Steps of Photosynthesis (locations, reactants, products)

Chapter 8

Genetic Material

- Interphase (G1 Phase), Interphase (Post S Phase), Cell Division

Cell Cycle Diagrams – Showing cells (Can be outside of cell- not in context)

- (X5) Each phase accurately depicted

Additional Items: Comments, Added detail (EC), Missing Items, neatness etc.

/55 points

BIOCHEMISTRY TERMS

Covalent Bond

Polar Covalent Bond

Hydrogen Bond

Carbonyl

Carboxyl

Amino

Phosphate

Hydroxyl

Methyl

Dehydration Reaction

Hydrolysis Reaction

Monosaccharide

Carbohydrate

Amino Acid

Protein

Primary Structure

Secondary Structure

Tertiary Structure

Quaternary Structure

Peptide Bond

Lipid

Phospholipid

Fatty Acid

Saturated Fatty Acid

Unsaturated Fatty Acid

Nucleotide

Nucleic Acid

CELL BIOLOGY TERMS

Nucleus

Nucleolus

Ribosomes

Smooth Endoplasmic Reticulum

Rough Endoplasmic Reticulum

Golgi Apparatus

Vesicles

Lysosomes

Mitochondria

Chloroplast

Plasma Membrane

Cell Wall

Vacuole

Cytosol

Cell Junctions

Cytoskeleton

Transport Proteins

Glycoproteins

Diffusion

Osmosis

Facilitated Diffusion

Active Transport

ATP

Photosynthesis

Cellular Respiration

Enzymes

Chromatin

Chromosomes

Sister Chromatids

Centromere

Centriole

Spindle Fibers