ANSWERS TO THE Study Guide for the 1st Quarter Cumulative Test for Biology – Monday, 10/14/19 “A” & Tuesday, 10/15/19 “B”

Be able to pick out a controlled variable and the experimental group in an experiment. Why do scientists perform experiments?

Why do scientists publish their experiments? Be able to analyze a graph.

Know the following terms: homeostasis, metabolism, photosynthesis, solution, solute, solvent, activation energy, selective permeability, facilitated diffusion, active and passive transport, osmosis, diffusion, hypotonic solutions, hypertonic solutions, isotonic solutions, theories, laws

Know where the reactants and products are in a chemical equation.

What is unique about Carbon? IT HAS UNIQUE BONDING PROPERTIES and ALLOWS WATER TO HAVE ITS PROPERTIES (SUPER POWERS) OF WATER

Know what type of images come from each microscope.

LIGHT MICROSCOPE- USES 2 LENSES TO MAGNIFY AN OBJECT UP TO 40X

SEM- CAN SEE THE DETAILED SURFACE OF A SMALL ORGANISM (the surface of a flie’s face)

TEM- CAN SEE A THIN SLICE OF A SMALL ORGANISM ( a thin slice of a chloroplast)

What are various properties of water? High specific heat, cohesion and adhesion

Where are the charges on a water molecule? POSITIVE BY HYDROGEN AND NEGATIVE BY OXYGEN ATOM

Know the pH scale. 0-6: ACIDIC (RELEASE OF HYDROGEN IONS) 7- NEUTRAL 8-14: BASIC/ALKALINE (RELEASE OF HYDROXIDE IONS)

What are the 4 main groups and building blocks of the 4 Carbon-based molecules?

MONOMER POLYMER

AMINO ACID PROTEIN

GLUCOSE CARBOHYDRATE

NUCLEOTIDE NUCLEIC ACID

TRIGLYCERIDE LIPID

Functions of proteins.-FIGHTS DISEASE, INVOLVED IN CELLULAR PROCESSES, BUILDS TISSUES IN THE BODY

Know and understand the Lock and Key Model.

THE SUBSTRATE IS THE REACTANT

SUBSTRATES BIND TO ENZYME TO CREATE A PRODUCT

Function of enzymes. ENZYMES WORK IN A CHEMICAL REACTION TO MAKE IT FASTER AND MORE EFFICIENT PROCESS.

Similarities and differences in prokaryotes and eukaryotes. Be able to identify animal and plant cells.

PROKARYOTES: DO NOT HAVE A NUCLEUS AND IS AN ORGANISM MADE UP OF TRILLIONS OF ONE TYPE OF CELL

EUKARYOTES: HAS A NUCLEUS TO PROTECT DNA AND IS AN ORGANISM MADE UP OF TRILLIONS OF DIFFERENT TYPES OF CELLS.

ANIMAL CELLS AND PLANT CELLS ARE EUKARYOTIC CELLS THAT HAVE MOST OF THE SAME ORGANELLES EXCEPT:

FOUND ONLY IN ANIMAL CELLS: CENTRIOLES, LYSOZYME

FOUND ONLY IN PLANT CELLS: CELL WALL, CENTRAL VACUOLE, CHLOROPLAST

Function of the following organelles FOUND IN ALL ANIMAL AND PLANT CELLS: Golgi apparatus, mitochondrion, vacuole, ribosome, rough and smooth endoplasmic reticulum, cell membrane \*\*SEE JEOPARDY PPT

What is the equation for cellular respiration? 1C6H12O6 + 6 O2 🡪 6H2O + 6 CO2

What is the function of root hairs? What is the function of the upper surface of leaves? ROOT HAIRS INCREASE ABSORPTION AND UPPER SURFACE OF LEAVES IS MADE UP OF CHLOROPLAST TO COLLECT SUNLIGHT, THE FIRST STEP IN LIGHT DEPENDENT REACTIONS TO BEGIN THE PHOTOSYNTHETIC PROCESS