

## First Exam Material

Sequence of scientific method: observation, hypothesis, experiment, conclusion

Electron: subatomic particle that plays the most important role in the formation of chemical bonds

Why life is everywhere in the Universe is likely to be based on water and carbon: water has unique properties that no other liquid has (high heat capacity, high cohesion, universal solvent)

Consequence on atoms always seeking a stable state: atoms bond together

Difference between a monosaccharide and a polysaccharide: one has a single sugar building block and the other has 3 or more sugar building blocks

Example of lowering activation energy: lowering the energy required to start a chemical reaction

How does an hypothesis differ from a theory: a theory is a system of related observations and tested hypotheses that have predictive and/or explanatory power while an hypothesis is merely tentative answer to a question

DNA and RNA are polymers of nucleotides

The difference between one amino acid and another lies in: the type of side group that it may have

A phospholipid differs from a triglyceride: phospholipids have a hydrophobic end and a hydrophilic end while triglycerides are non-polar

“Fluid Mosaic Model”: is a model that explains the form and function of the biological membrane

Organelles that have a double membrane: Nucleus, mitochondrion, and chloroplast

Science is based on evidence

A phospholipid has two fatty acid molecules attached to it

Role of cytoskeleton: give shape to cells

Which organelle or structure does a plant cell have that an animal cell does not:

chloroplast

Building blocks of nucleic acids: nucleotides

Oxygen: has eight electrons; capable of forming two covalent bonds

In an attempt to visualize the Fluid Mosaic Model of a plasma membrane, we could say

the protein is floating in a sea of lipid

Roles or functions of protein: enzymes, transport, cell recognition, structure

Cell: smallest unit at which life is possible

Cells without ribosomes are unable to: synthesize proteins

Monomer: glucose

Cholesterol: required in the membrane of cells

Facilitated diffusion across a biological membrane requires transport proteins and moves

a substance down a concentration gradient