Objective: i essay

Atom – the smallest component of an element having the chemical properties

of the element

Example: the formation of a sodium chloride crystal

Molecule – The smallest part of any substance which has the qualities of

that substance, and which can exist alone in a free state.

Example: a molecule of water consists of two atoms of hydrogen and one of

oxygen.

Organelle – A cell structure that carries out a specialized function in the

life of a cell.

Example: the nucleus, chromosomes, mitochondria, cytoskeleton and vesicles.

Cell – Smallest unit with the capacity to live and reproduce, independently

or as part of multicelled organisms

Example: Malaria parasite

Tissue – a part of an organism consisting of an aggregate of cells having a

similar structure and function.

Example: Distribution of death domain containing protein genes

Organ – A part of the body that consists of different types of tissue and that performs a particular function.

Example: the kidneys, heart and brain.

Organ System – two or more organs interacting chemically, physically, or both in ways that contribute to organism’s survival.

Example: Nervous System and Digestive System

Multicelled Organism – individual consisting of interdependent cells typically organized in tissues, organs, and organ system.

Example: Modern vascular plant that is similar in structure.

Population – Group of individual of the same kind occupying the same area.

Example: a zebra herd

Community – populations of all species occupying the same area.

Example: the people of Bridgeport Connecticut

Ecosystem – Community and its physical environment.

Example: The people of Bridgeport and our surrounding.

pic pic

Adipose TissueHyaline Cartilage

pic pic

Smooth Muscle CellsFibrocartilage

pic

Digestive System

Objective II

Atomic Number – the number of protons in a element

Atomic Weight – the average mass of the atoms of an element

Neutron – the particle in the atomic nucleus with the mass = 1 and charge =

0

Neutron

Protons – a component of an atomic nucleus with a mass defined as 1 and a

charge of +1.

Protons

Electrons – a negatively charged component of an atom.

Electrons

Hydrogen – chemical element that exists as a gas at room temperature

Hydrogen

Carbon – nonmetallic chemical element known by the symbol C that is the fundamental building block of material in living organisms

Carbon

Oxygen – symbol O, colorless. Odorless, tasteless slightly magnetic gaseous element

Oxygen

Sodium – sodium Na, Highly reactive, silvery white extreme soft metallic element.

Sodium

Chlorine – symbol CI, greenish – yellow gaseous element.

Chlorine

Isotopes – atoms that are vary in neutron numbers

Isotopes – C14

Isotopes – C12

Ions

Chloride Ion

Sodium Ion

11p+

10e-

Bonding

Ionic Bond – an association of two ions that have opposing charge.

NACI

Covalent Bond – sharing of a pair of electrons

Molecular Hydrogen

Polor Covalent Bond – atoms of different elements don’t exert the same pull on shared electrons.

Polarity of the water molecule water’s temperature – stabilizing effects

water cohesion

Water solvent properties

Hydrogen Bonding – weak attraction between an electron negative atom and taking part in a second polar covalent bond.

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Functional Group

Aldehydes

Alcohol -OH

Ketone

Organic Acid

Amino

Phosphate

Molecules and Macromolecules

pic Hydrophilic

pic Hydrophobic Tail

pic Condensation

picHydrolysis

Carbohydrates – A chemical compound composed of carbon, hydrogen and

oxygen. Starch, sugar and cellulose are the most common carbohydrates that

supply energy.

Monosaccharide – simple sugars consist of a single sugar molecule and

cannot be further decomposed by hydrolysis.

Disaccharide – Sugars formed by the combination of two simple sugar units.

Polysaccharides – Complex sugars, consisting of multiple linked simple

sugars.

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Glucose

Fructose

picGalactose

picpic

picpic Sucrose

Starchpic

Cellulose

Lipids – Hydrophobic that’s the one property they have in common. This group of molecules includes fats, oils, waxes, phospholipids, steroids and some other related compounds.

pic Fatty Acids pic

pic pic

pic pic Steroids

pic

Bile- liver secretion required for fat digestion.

Emulsification – of chime a suspension of fat droplet coated with bile salts.

Proteins – organic compound of one or more polypeptide chains folded and twisted into a globular or fibrous shape overall.

picAmino Acid

R Groups – side chains that have functional groups each type of side chains contributes in a major way to distinctive properties of each amino acid

Primary Structure – when a cell synthesizes a protein, enzymes link amino acids, one after the other by peptide bond.

Denaturation – breaking weak bonds of a protein or any other large molecule disrupts its three dimensional shape.

Enzymes – the type of protein or one of the few RNAs that catalyze reactions between substances, most often at functional group, enzymes also breaks down the food in our body.

Nucleic acid – single or double stranded chain of four kinds of nucleotides joined at their phosphate.

pic DNA pic RNA

pic

Objective IV

Life originated in water. Many organisms still live in it. Cell shape and internal structure depend on it.

Without water there would be no oceans, no lakes, no rivers, no rain, snow, hail clouds, polar ice caps. Water is every where it defines our planet.

It is involved in just about every process on earth one way or another.