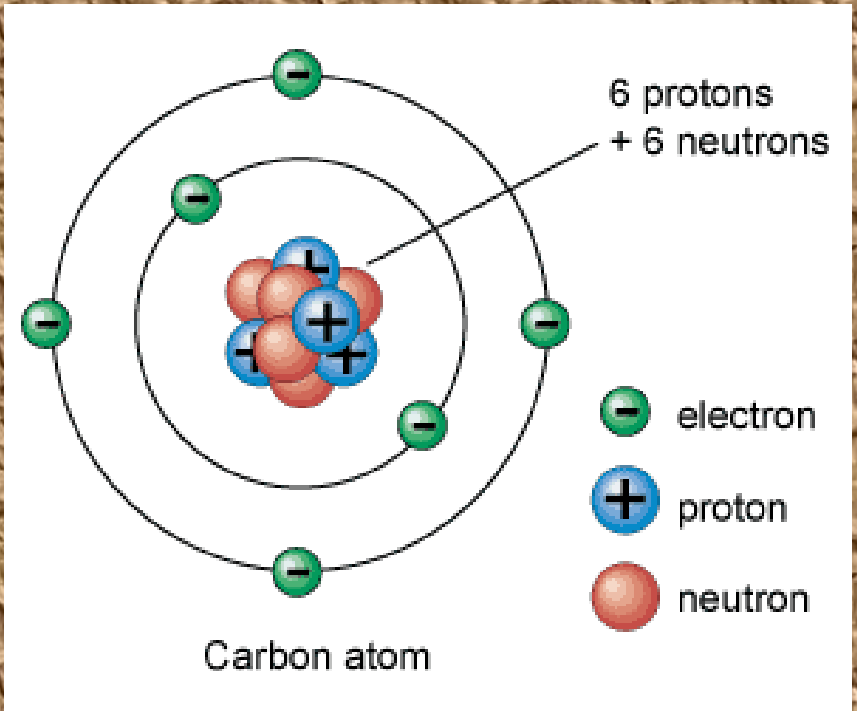
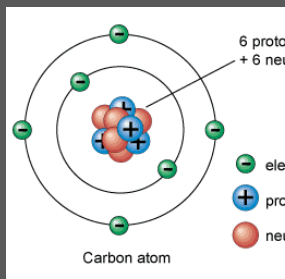
Biochemistry Review



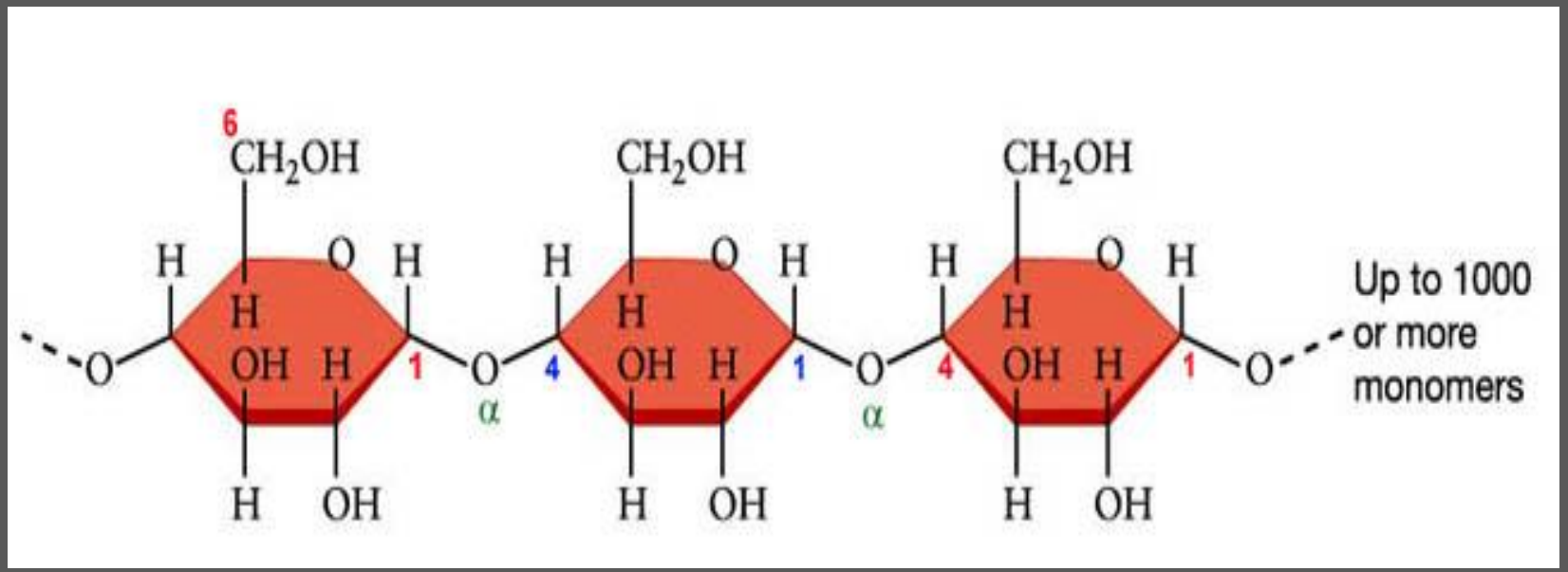
_____ is a substance that reduces the activity of an enzyme by entering the active site in place of the substrate whose structure it mimics.

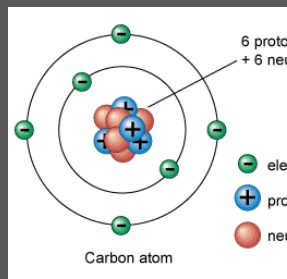
- ***Competitive Inhibitor***



Identify the following molecule:

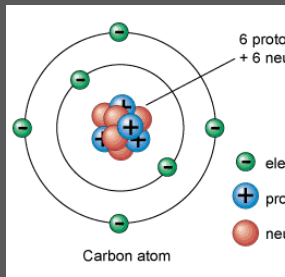
- ***Polysaccharide***





compounds that DO NOT contain carbon are _____

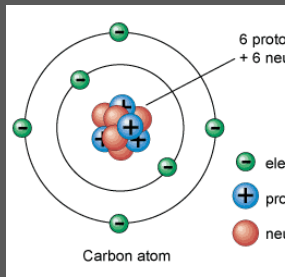
- ***Inorganic***



Any molecule made ONLY of <u>hydrogen</u> and <u>carbon</u> atoms is a

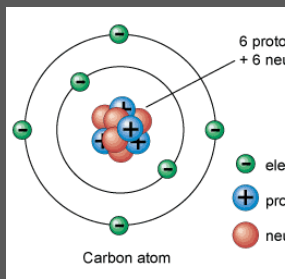
_____

- ***<u>Hydrocarbon</u>***



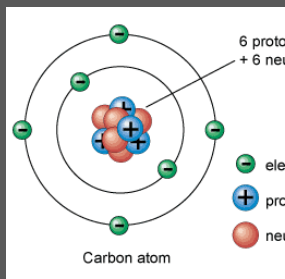
List one indicator from a lab and what is was testing for.

- ***Iodine = starch***
- ***Buiret solution = protein***
- ***Benedicts solution = monosaccharide***
- ***pH paper = pH***
- ***brown bag = fat***



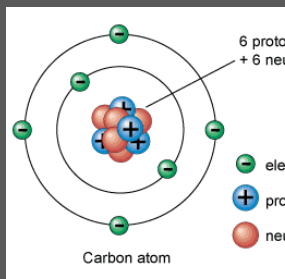
compounds that have the same formula but different structures are called _____

- ***Isomers***



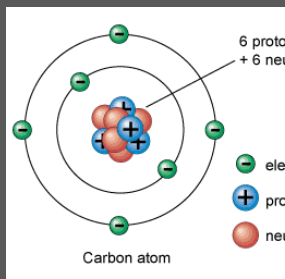
Isotopes are named by their _____.

- ***Mass Numbers***



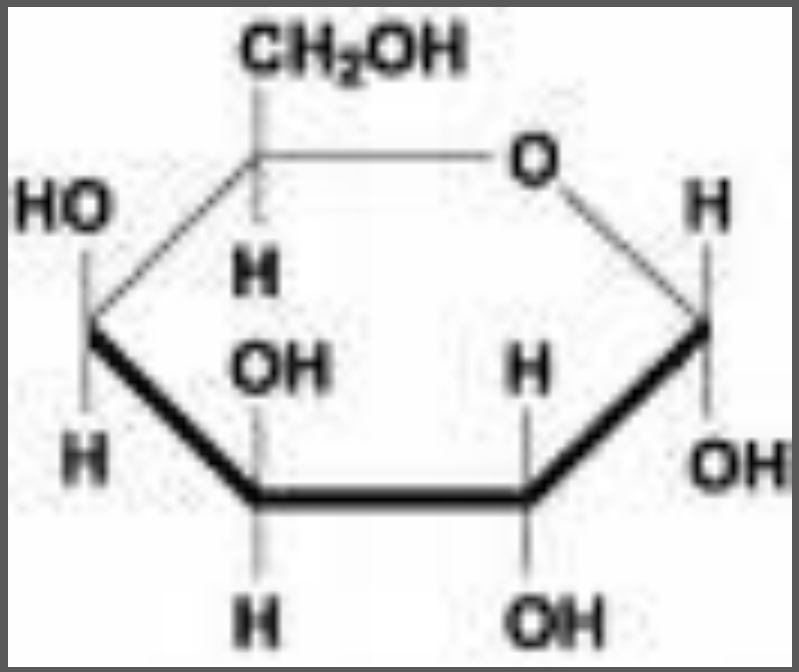
In a chemical equation, _____ represent the number of molecules that are present.

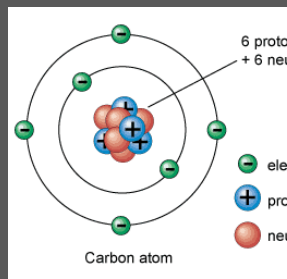
- ***Coefficients***



Identify the following molecule:

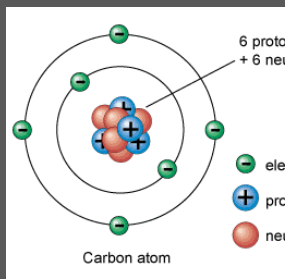
- ***Monosaccharide***





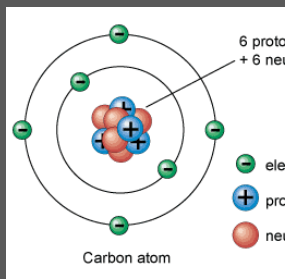
What is glycogen's function?

- ***Animals food storage***



compounds that contain carbon are called_____

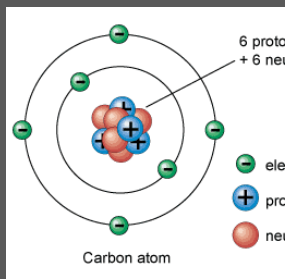
- ***Organic***



large molecule formed when many smaller molecules bond together, usually in long chains is called a

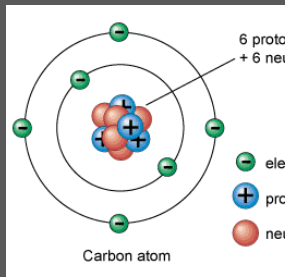
_____

- ***Polymer***



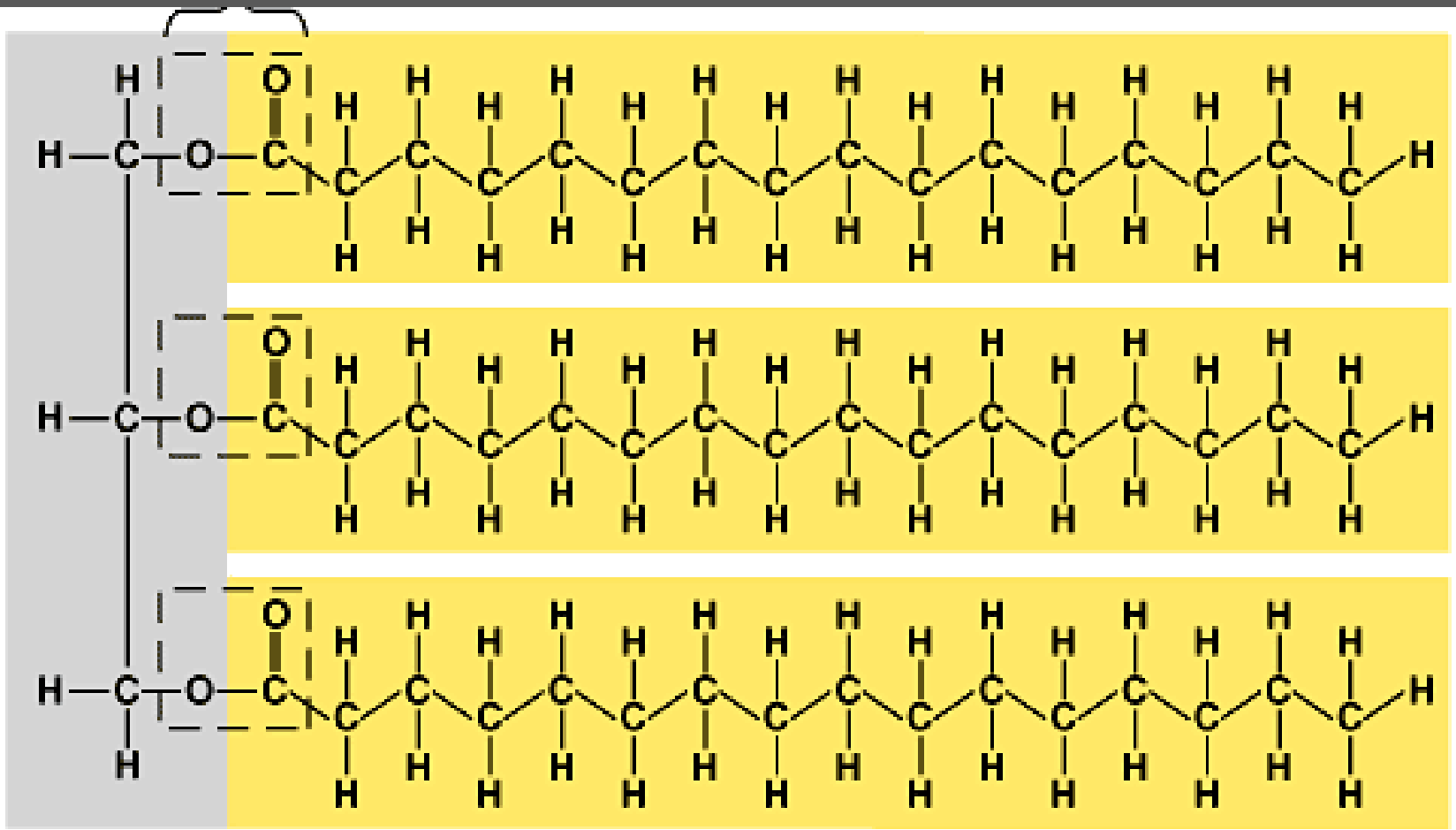
What is the basic building block (monomer) of carbohydrates?

- ***monosaccharide***



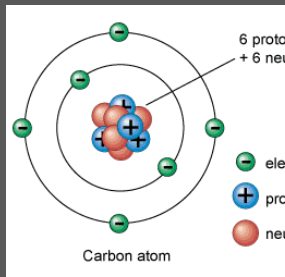
Identify the following molecule:

- ***Fat***



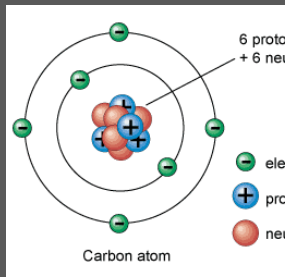
What process allows body cells to make large compounds from monomers (building blocks)?

- ***Dehydration Synthesis***



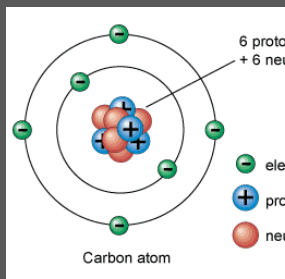
What process allows the digestive system to breakdown nutrients?

- ***Hydrolysis***



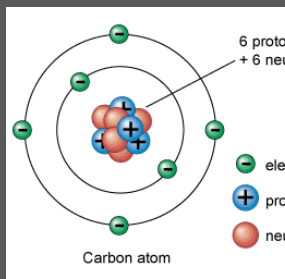
WHAT DO ATHLETES EAT THE DAY BEFORE A BIG GAME? WHY?

- ***Carbs. Because carbs. store and release energy***



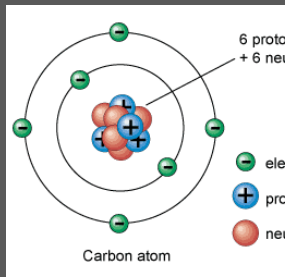
_____ is the simplest carbon compound (CH_4)

- ***Methane***



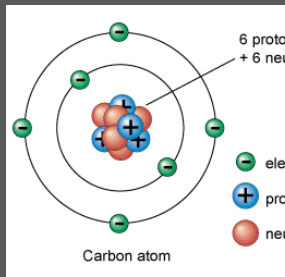
HOW DOES OUR BODY GET ENERGY FROM THE BREAKING DOWN OF MOLECULES?

- ***When a bond is broken energy is released!***



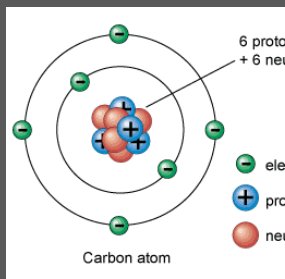
Lactose is commonly called what?

- ***Milk Sugar***



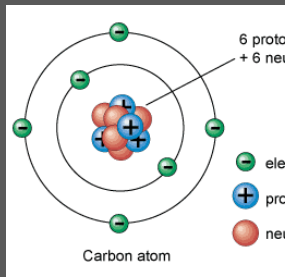
What atoms make up all carbohydrates?

- ***C,H,O***



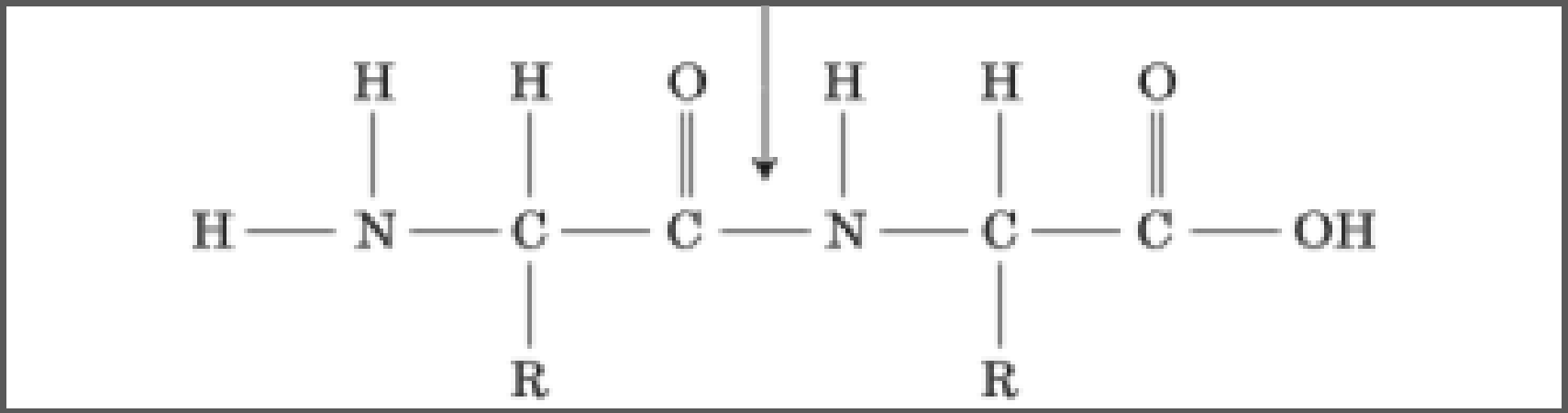
What are the 2 types of nucleic acids?

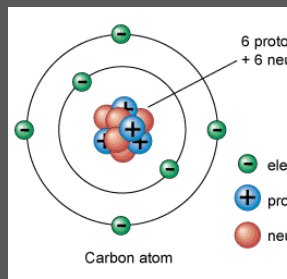
- ***DNA***
- ***RNA***



Identify the following molecule:

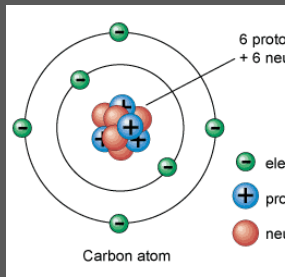
- ***Protein***





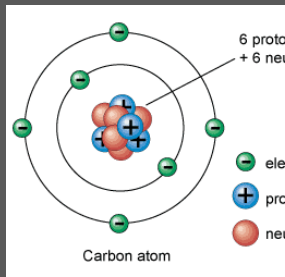
Carbon forms_____ covalent bonds to become stable

- ***Four***



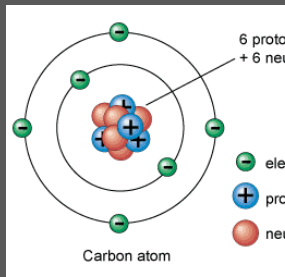
A(n) _____substance that cannot be broken down into simpler substances.

- ***Element***



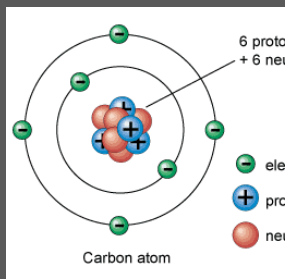
List two examples of monosaccharides.

- ***Glucose***
- ***Fructose***
- ***Galactose***



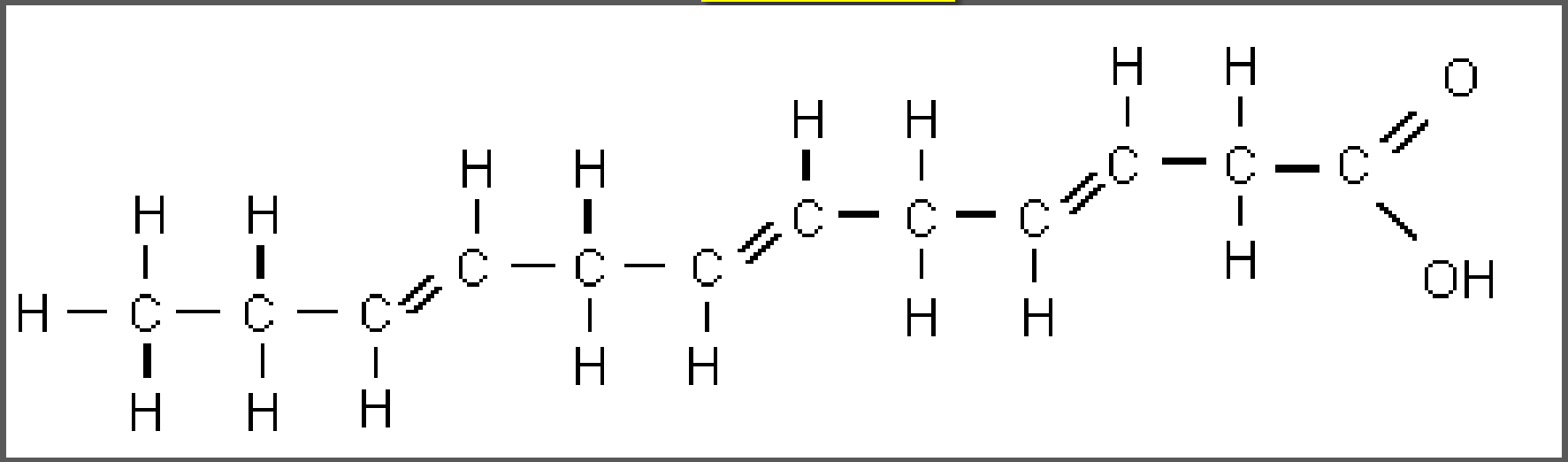
WHICH HAS MORE ENERGY – LIPIDS OR CARBS?

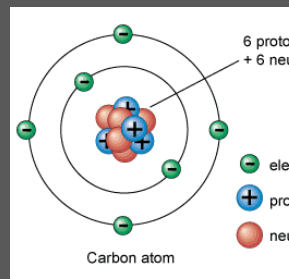
- **Lipids**



Identify the following molecule:

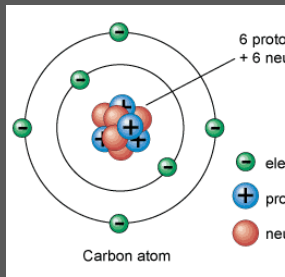
- ***Polyunsaturated Fatty Acid***





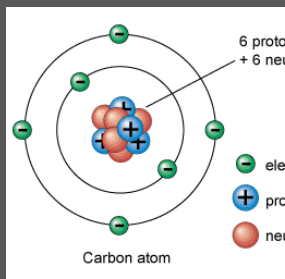
Majority of fat in organism consist of this type of fat molecules

- ***Triglyceride***



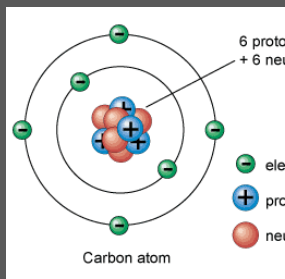
What is the chemical formula for all monosaccharides?

- $C_6H_{12}O_6$



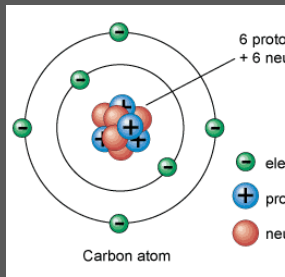
List two examples of disaccharides

- ***Lactose***
- ***Maltose***
- ***Sucrose***



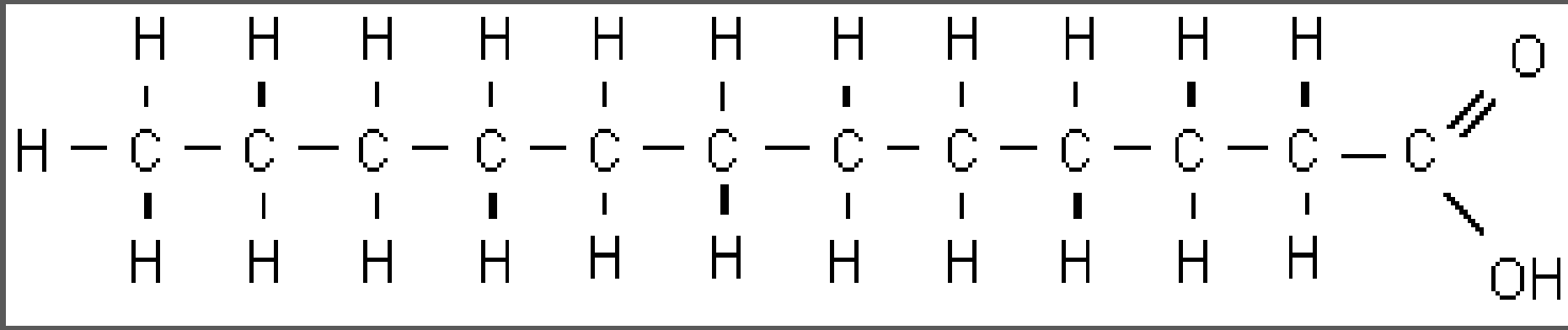
extremely large compounds made of smaller ones are called _____.

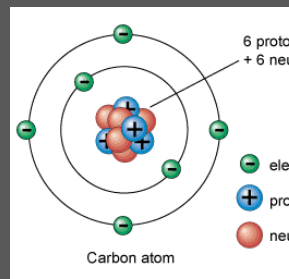
- ***macromolecules***



Identify the following molecule:

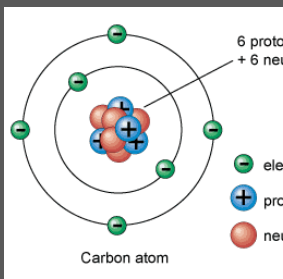
- ***Saturated Fatty Acid***





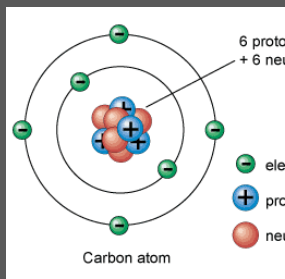
Sucrose is commonly called what?

- ***Table sugar***



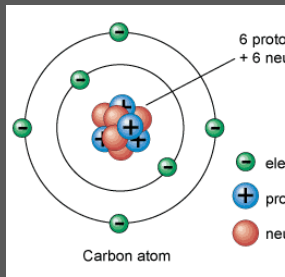
The breaking of a large compound (polymer) into smaller compounds (monomers) through the addition of -H and –OH (water).

- ***Hydrolysis***



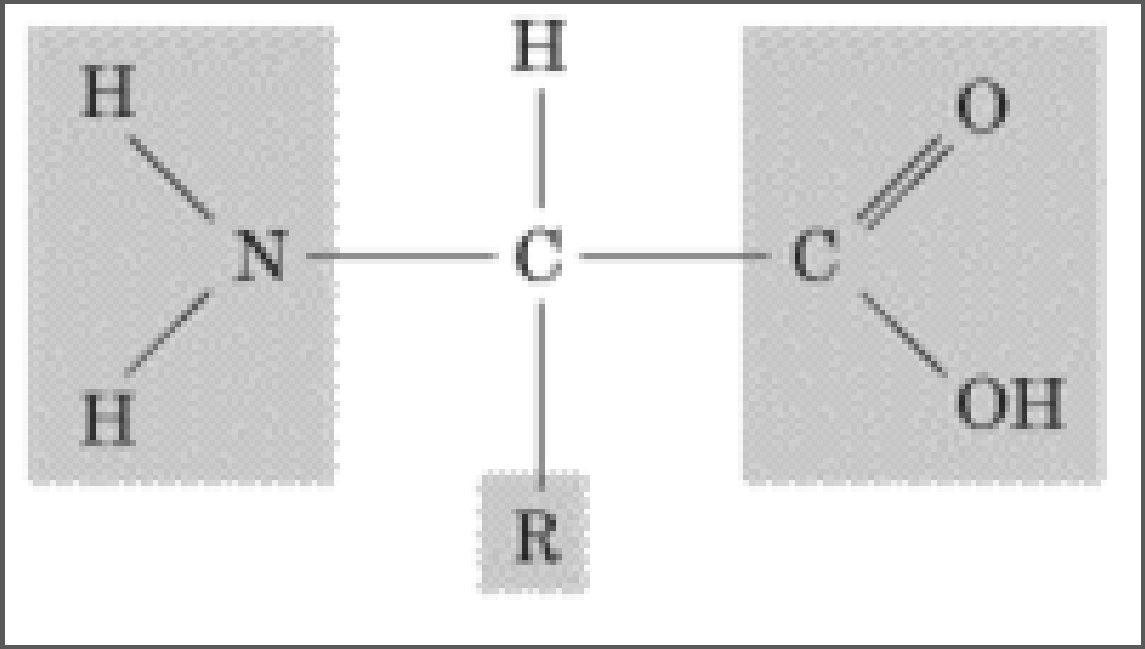
_____ fatty acid has more than one double bond between the carbon atoms in the chain

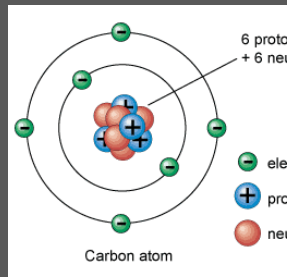
- ***Polyunsaturated***



Identify the following molecule:

- ***Amino Acid***

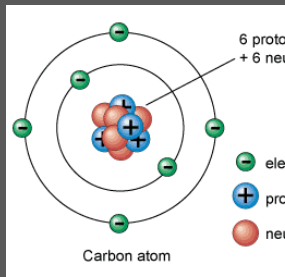




More than 2 monosaccharides joined by dehydration synthesis are called

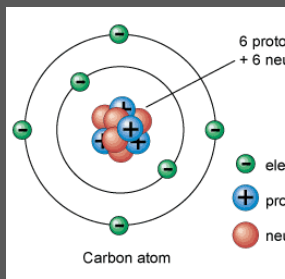
_____

- ***Polysaccharide***



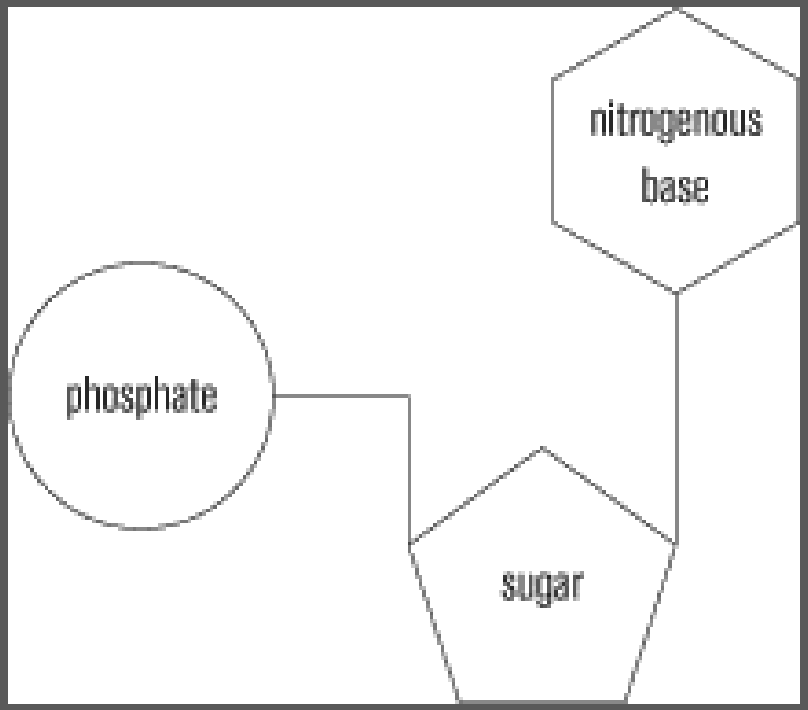
What is an example of an unsaturated fatty acid?

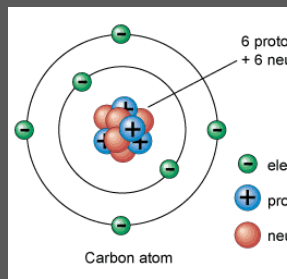
- ***Olive oil***



Identify the following molecule:

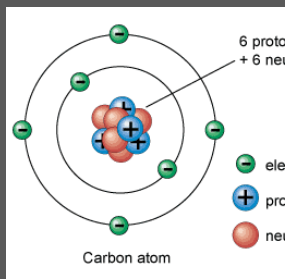
- ***Nucleotide***





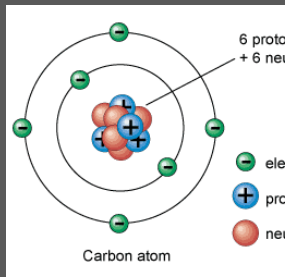
What is cellulose's function?

- ***provides structure in plant cell walls***



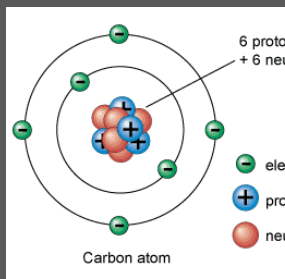
What is the function of enzymes?

- ***Act like a catalyst and speed up chemical reactions***



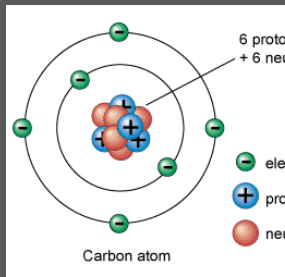
What is the alcohol group?

- ***-OH***



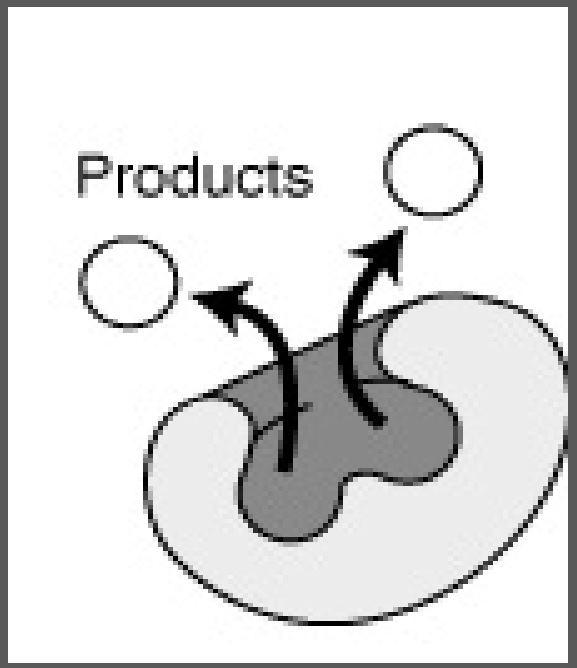
What is the chemical formula for all disaccharides?

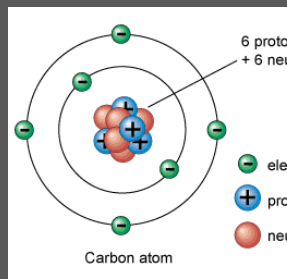
- $C_{12}H_{22}O_{11}$



Identify the following molecule:

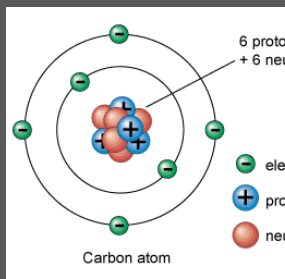
- ***Enzyme***





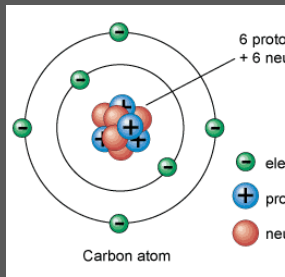
What is the carboxyl group?

- ***-COOH***



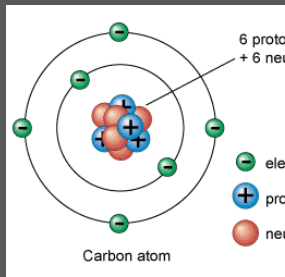
What substance is the repeating unit that makes up starch, cellulose, and glycogen?

- ***Monosaccharide***



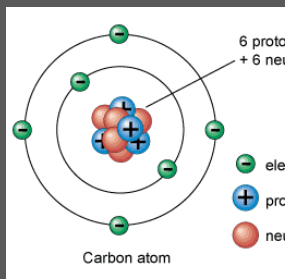
List one factor that could denature an enzyme.

- ***Temp.***
- ***pH***



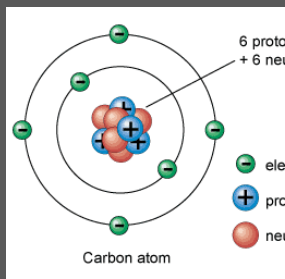
_____ refers to the unequal distribution of charge of a molecule.

- ***Polar***



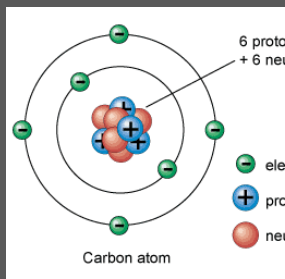
The _____ states that each energy level AFTER the first can have up to eight electrons.

- ***Octet Rule***



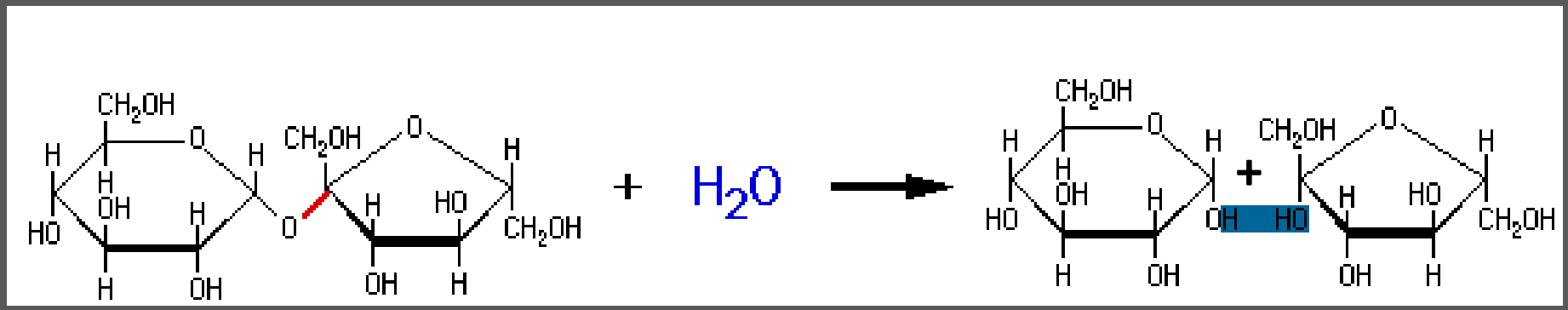
List two examples of polysaccharides.

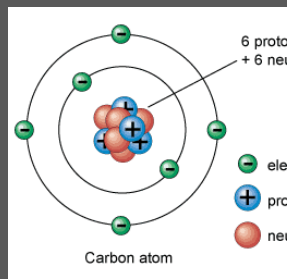
- ***Starch***
- ***Glycogen***
- ***Cellulose***



What type of reaction is occurring?

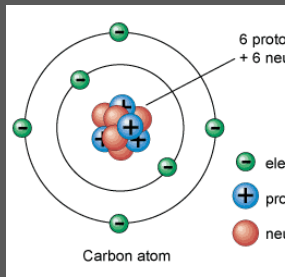
- ***Hydrolysis***





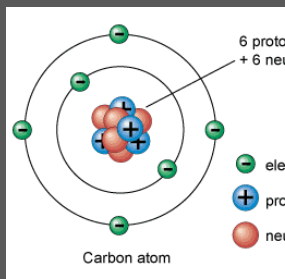
Any substance that forms H^+ (hydrogen ions) in water would be considered a(n) _____.

- ***Acid***



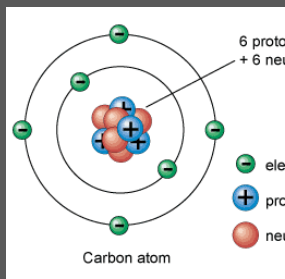
Atoms of the same element that have different numbers of *neutrons* are called _____.

- ***Isotopes***



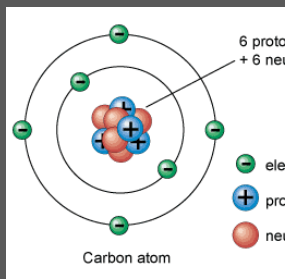
A substance that contains two or more elements that are chemically combined is called a(n) _____.

- ***Compound***



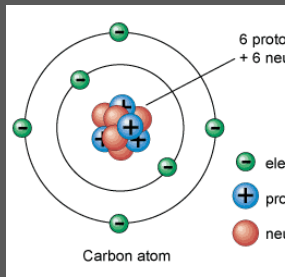
A(n) _____ bond occurs when there is a transferring of electrons between atoms.

- ***Ionic***



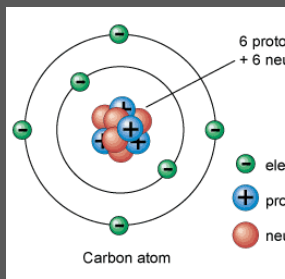
What is the ratio of oxygen to hydrogen atoms in all carbohydrates?

- ***Ratio is 1 Oxygen atom : 2 Hydrogen atoms***



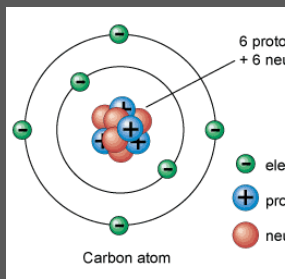
The removal of –H and –OH (water)from the individual molecules so that a bond may form between them and result in a more complex molecule is called _____

- ***Dehydration synthesis***



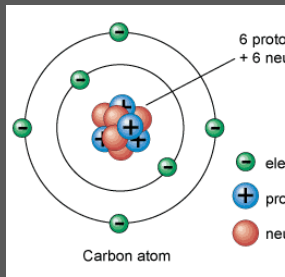
Any substance that forms OH^- (hydroxide ions) in water would be considered a(n)_____.

- ***Base***



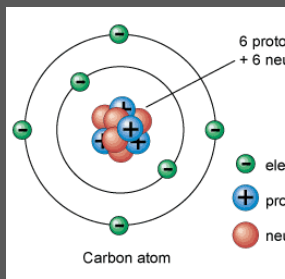
The center of an atom is called the _____.

- ***Nucleus***



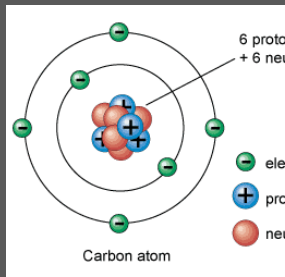
Charged atoms because they have gained or lost electron(s) are called _____.

- ***Ion***



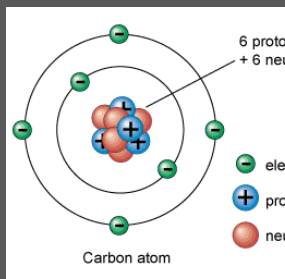
What is the purpose of RNA?

- ***Makes proteins***



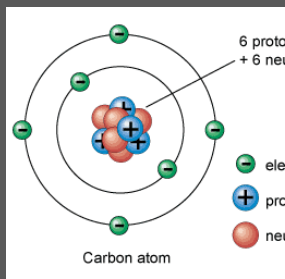
_____ bonds occur when atoms of elements are sharing electrons.

- ***Covalent***



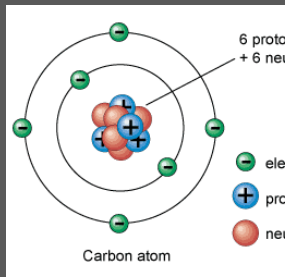
What is the function of carbohydrates?

- ***Compounds used for storage and release of energy***



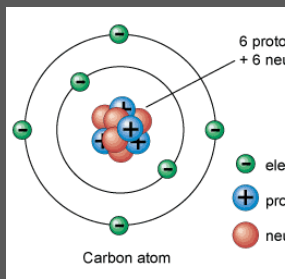
Double sugar made of 2 simple is called a _____

- ***disaccharide***



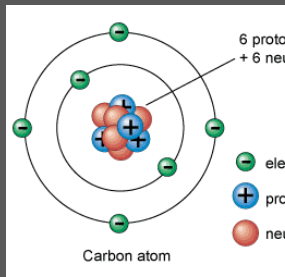
In a chemical reaction, the number of atoms of an element are represented by _____.

- ***subscripts***



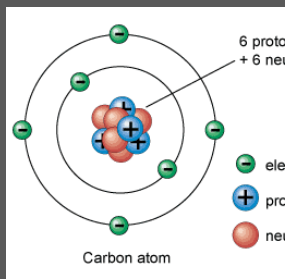
The _____ represents the number of protons and electrons that an atom contains

- ***Atomic number***



How acidic or basic a substance is referred to as that substance's _____.

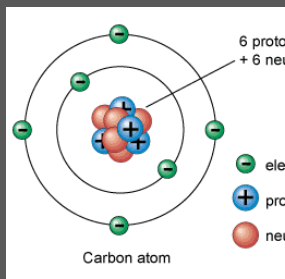
- ***pH***



Chemical equations must be balanced due to the

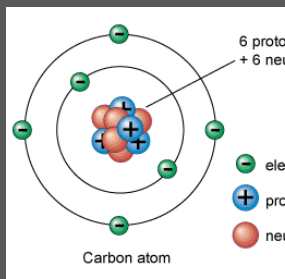
_____.

- ***Law of Conservation of Matter***



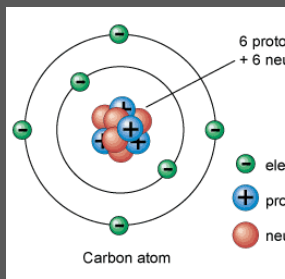
Lipids are commonly called _____ and _____

- ***Fats, Oils***



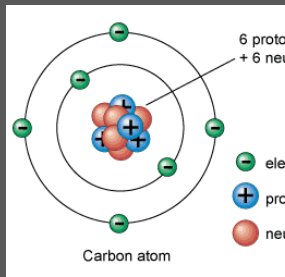
What is the amino group?

- $\underline{\textit{-NH}_2}$



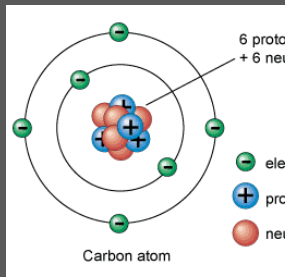
What elements make up lipids?

- ***C, H, O***



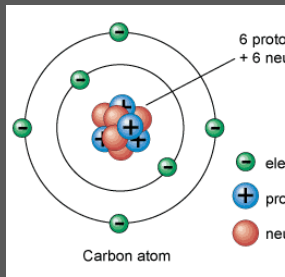
List 1 function of a lipid

1. ***Long term energy storage***
2. ***Insulation***
3. ***Protect body tissue (cushioning)***



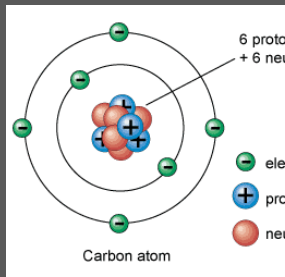
What are the monomers of lipids?

- ***1 glycerol + 3 fatty acids***



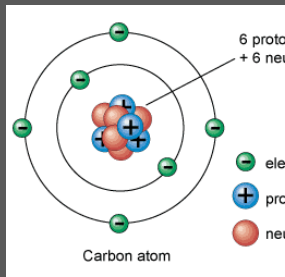
What process joins together glycerol and 3 fatty acids to make a lipid?

- ***Dehydration synthesis***



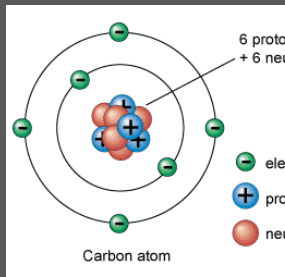
_____fatty acid chains of carbon with only single bonds between the carbon atoms

- ***Saturated***



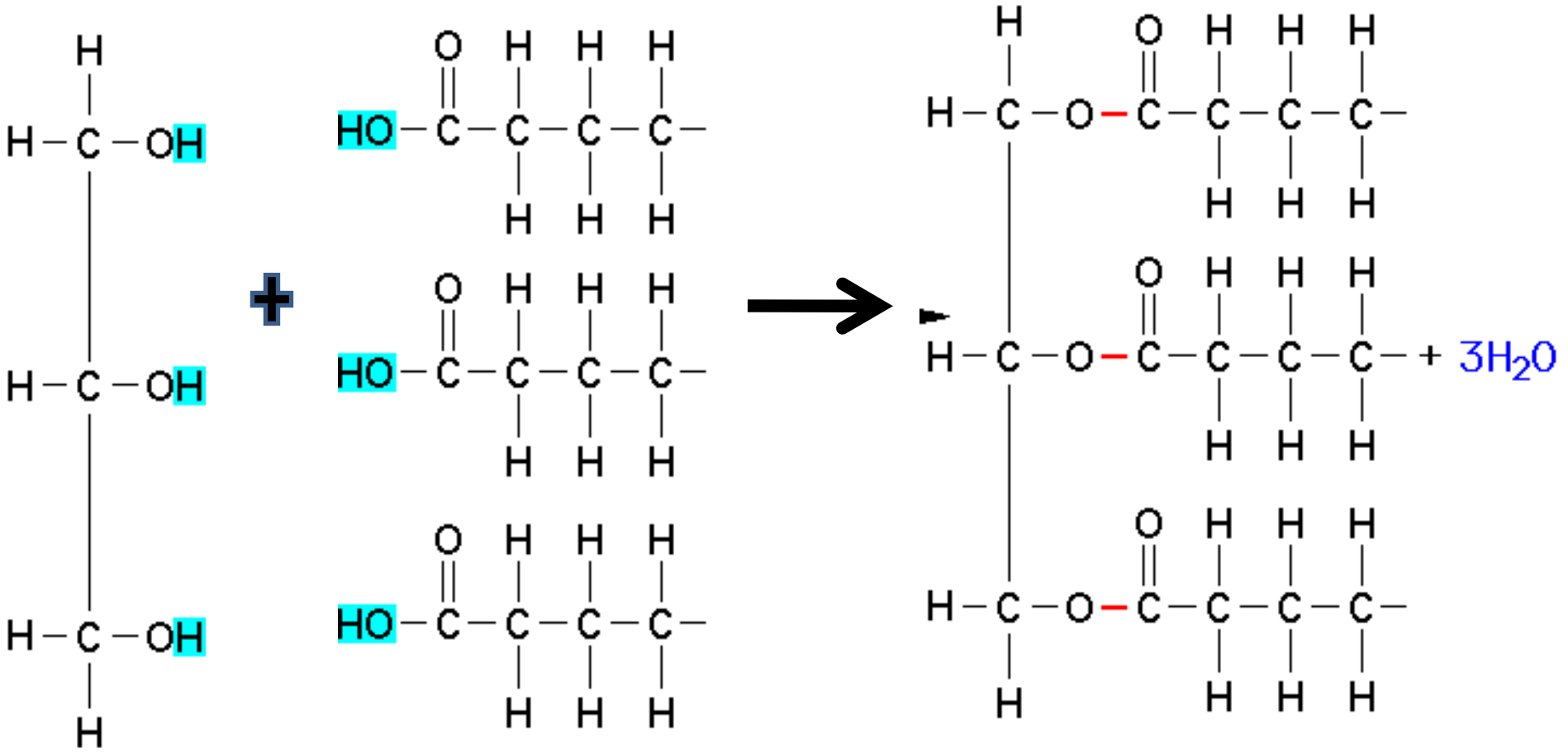
_____ is a covalent bond that joins amino acids to each other

- ***peptide***



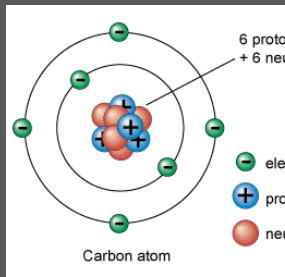
What type of reaction is occurring?

- ***Dehydration synthesis***



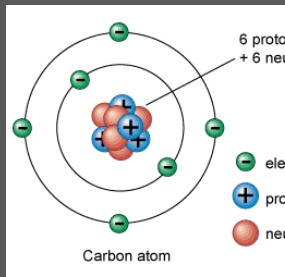
What is an example of a saturated fatty acid?

- ***Butter***



What elements make up proteins?

- ***C, H, O, N, S***

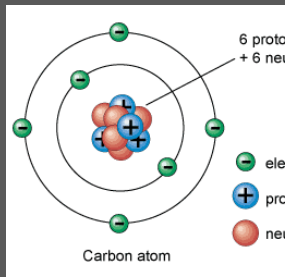


The following,

Monosaccharide + Monosaccharide---> Disaccharide + water

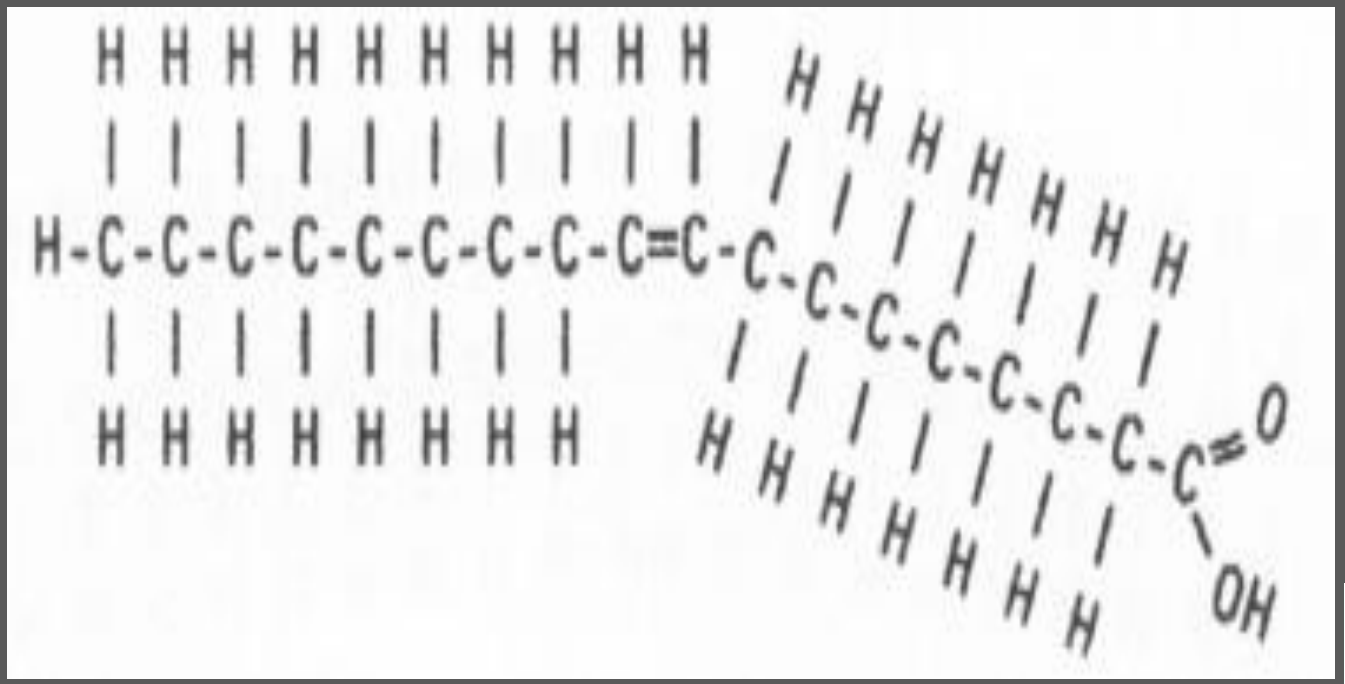
is an example of what process?

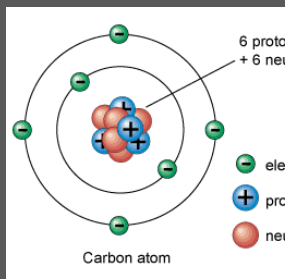
- ***Dehydration synthesis***



Identify the following molecule:

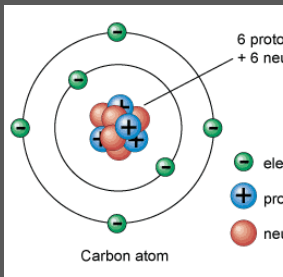
- ***Unsaturated fatty acid***





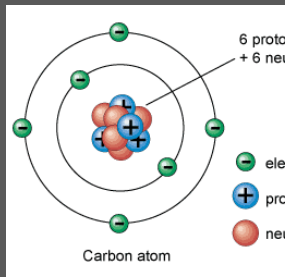
What are the monomers of proteins?

- ***Amino acids***



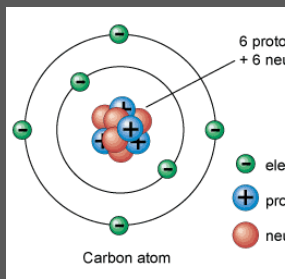
10 of the 20 amino acids are "essential" because they are required by the body but are NOT created by it. What are they called

- ***Essential Amino Acids***



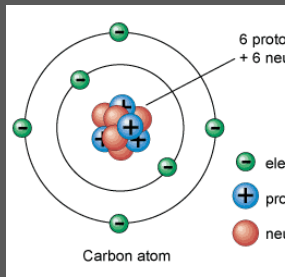
List one function of proteins in our bodies

1. ***Muscle contraction***
2. ***Transport oxygen in the bloodstream***
3. ***Provide immunity (antibodies)***
4. ***Carry out chemical reactions***



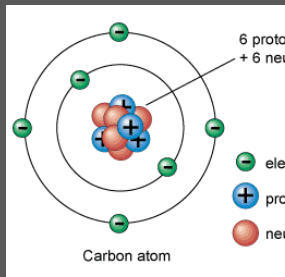
Enzymes are a special type of what polymer?

- ***Proteins***



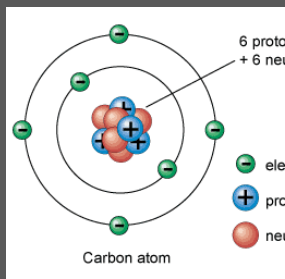
_____ is an organic molecule <u>associated</u> with the enzyme to <u>help</u> in the reaction.

- ***<u>Coenzyme</u>***



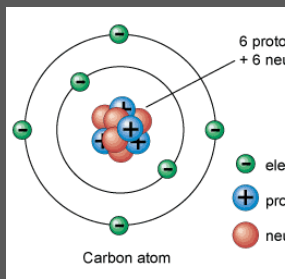
List 2 types of Carbohydrates.

- ***Monosaccharides***
- ***Disaccharides***
- ***Polysaccharides***



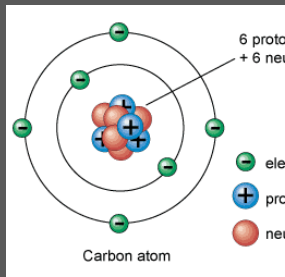
_____ of an enzyme attracts and holds only ***specific*** molecules called substrates.

- ***Active site***



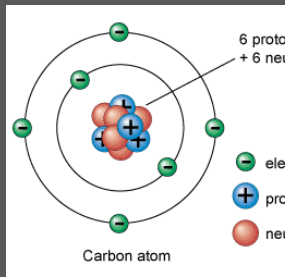
What elements make up nucleotides?

- ***C, H, O, N, P***



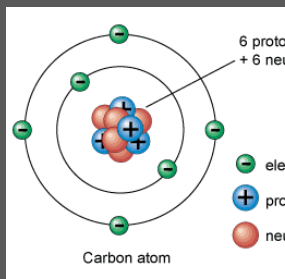
What are the monomers of nucleic acids?

- ***Nucleotides***



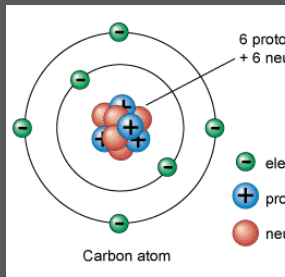
What is the purpose of DNA?

- ***Genetic Information***



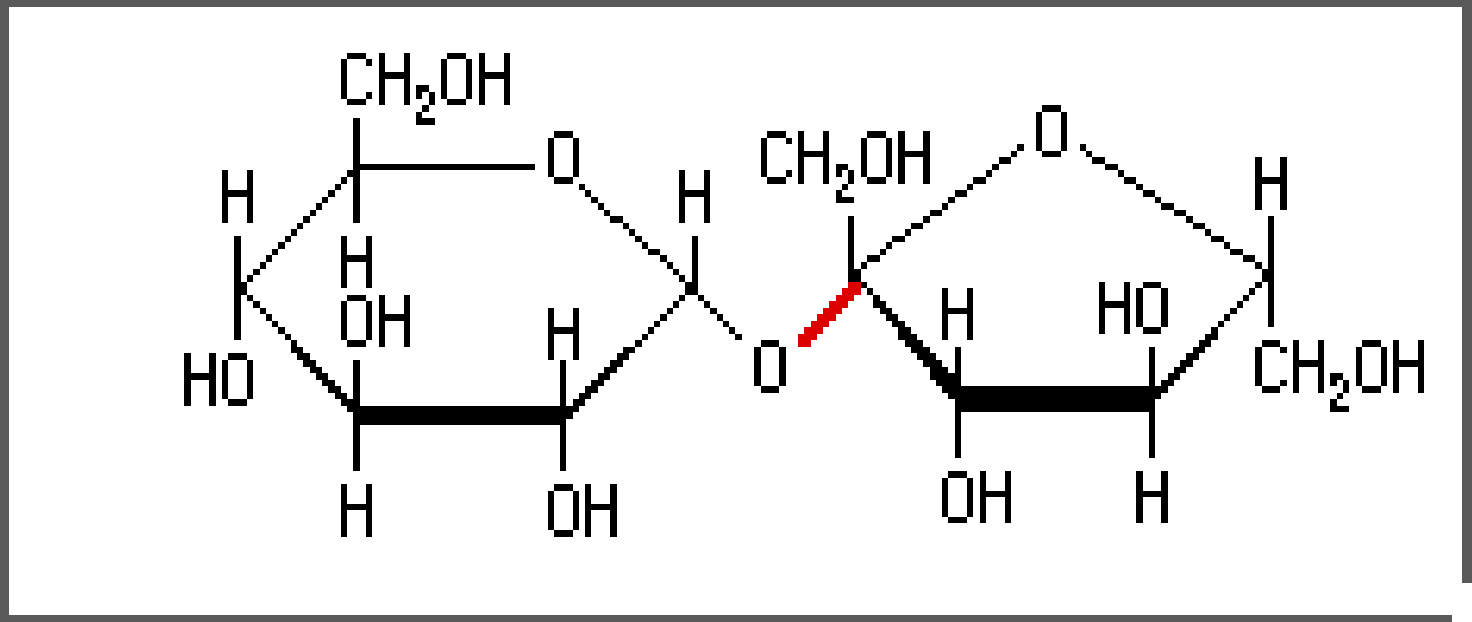
What is starch's function?

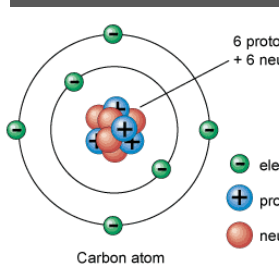
- ***Plant's energy storage***



Identify the following molecule:

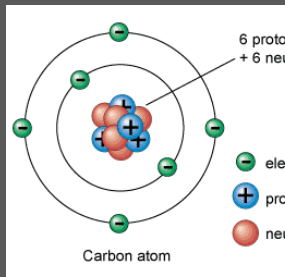
- ***Disaccharide***





_____fatty acid chains of carbon with ONE <u>double</u> bond between the carbon atoms

- ***<u>Unsaturated</u>***



What type of reaction is occurring?

- ***Dehydration synthesis***