

## STUDY GUIDE . UNIT 2 BIOMOLECULES

### Define the following terms

#### **Organic & Inorganic substances (Tomás Borda & Catalina Grosso)**

- Inorganic compounds are created by non-living natural processes or human intervention.
- Organic compounds are produced by and are associated with living organisms.
- Organic compounds contain carbon and carbon-hydrogen bonds, while most inorganic compounds do not contain carbon.

#### **Condensation reaction (Who?)**

A condensation reaction is a chemical reaction between two compounds where one of the products is water or ammonia.

**Covalent bond (Juani y Luli):** This chemical bond is formed between non-metal atoms, which combine together by sharing electrons. The group of atoms bonded together in this way is called a molecule.

Covalent compounds are usually gases or liquids with low boiling points and they don't conduct electricity.

Dot and cross models show how a pair of electrons forms a covalent bond.

#### **Glycosidic bond: Catalina Rela, Gonzalo VA and Tomás A)**

- **Condensation reactions** (removal of water molecules) allow the formation of disaccharides, for example, two hexoses (glucose+glucose=maltose).
- The resulting elements will be held together through **glycosidic bonds**.
- A **glycosidic bond** is a type of covalent bond that joins a carbohydrate (sugar) molecule to another group, which may or may not be another carbohydrate.

#### **Hydrogen bond (Luna PM and Juako)**

A hydrogen bond is the electrostatic attraction between two polar groups that occurs when a hydrogen (H) atom covalently bound to a highly electronegative atom such as nitrogen (N), oxygen (O), or fluorine (F) experiences the electrostatic field of another highly electronegative atom nearby.

#### **Hydrolysis (Rochi Delfi & Bau)**

It's the chemical breakdown of a compound due to reaction with water. **(Addition of water)**

#### **Ionic bond (Nico & Luz)**

It is the transfer of one or more electrons from a metal onto a non-metal.

#### **Non-reducing sugar (Lucia & Pancho)**

A nonreducing sugar is a carbohydrate that is not oxidized by a weak oxidizing agent in basic aqueous solution. The characteristic property of nonreducing sugars is that, in basic aqueous medium, they do not generate any compounds containing an aldehyde group. **(explain)**