

Condensation polymers

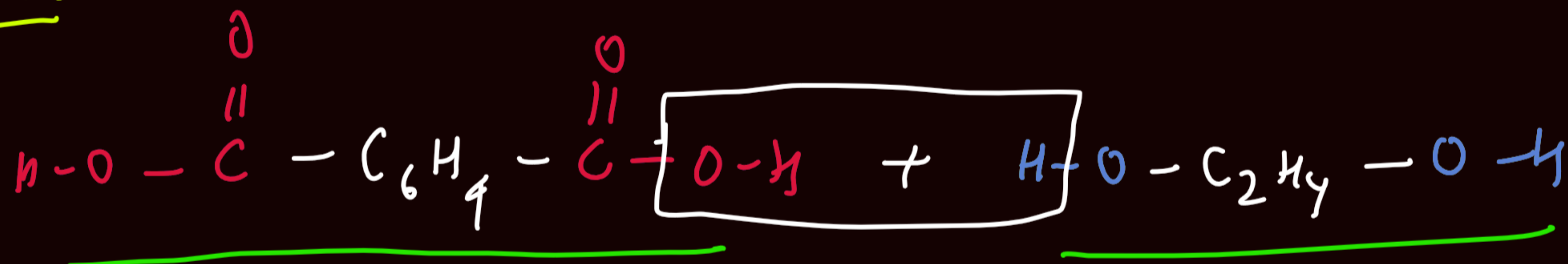
2 different monomers are there :-

they combine to give 1 small molecule and 1
polymer unit.

↳ H_2O

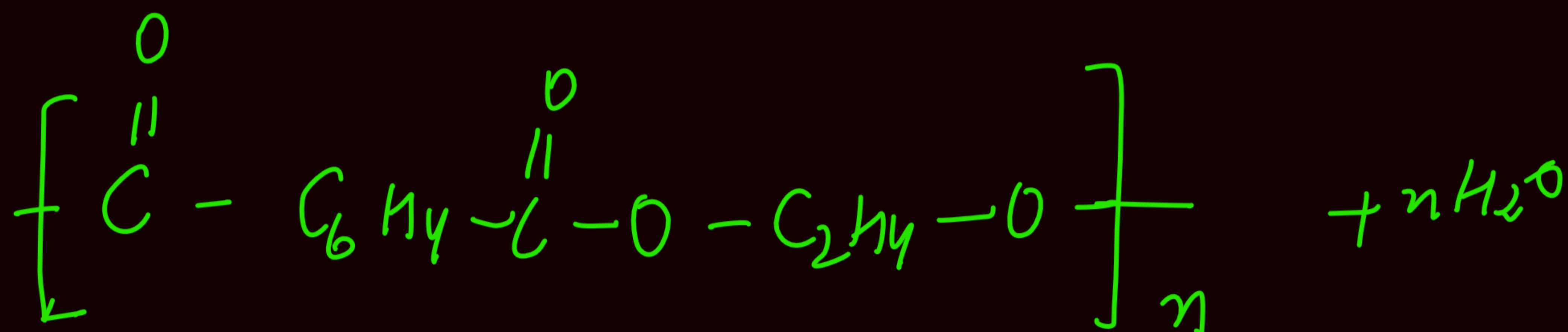
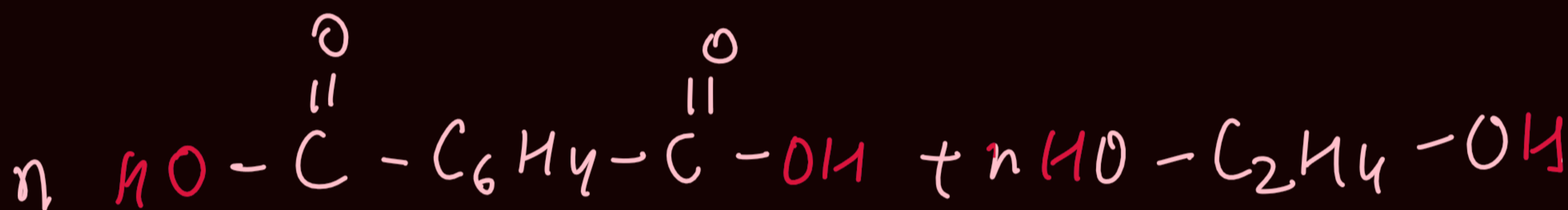
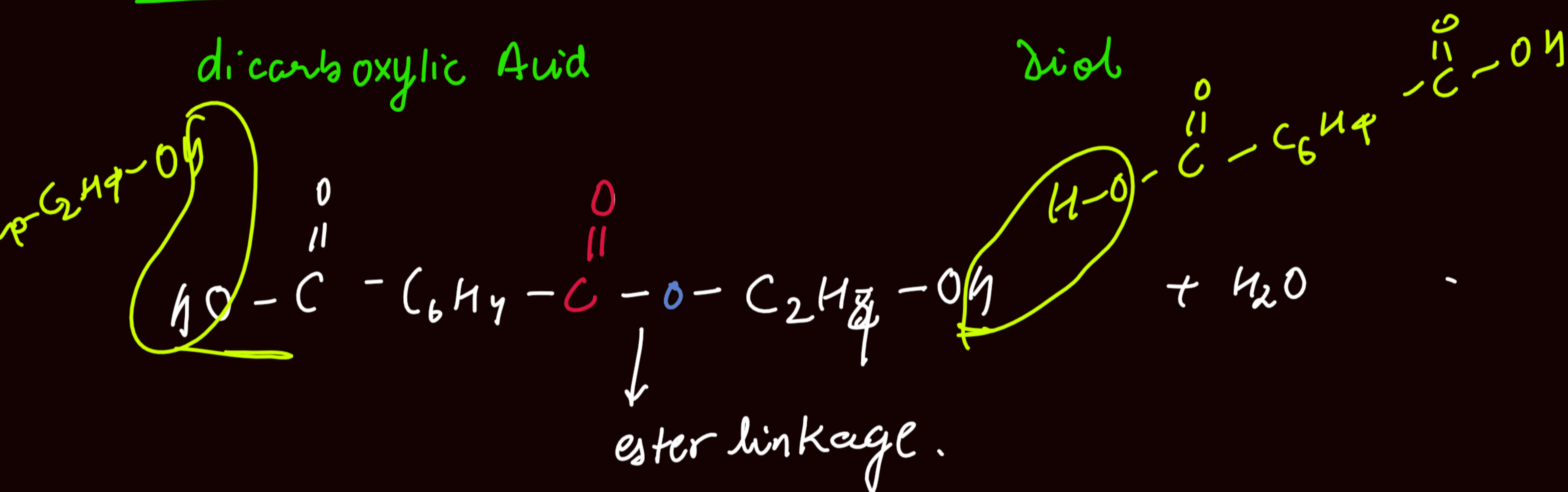
↳ NH_3 etc.

Ex:-



dicarboxylic Acid

diol



OH is lost from carboxylic Acid

H is lost from alcohol

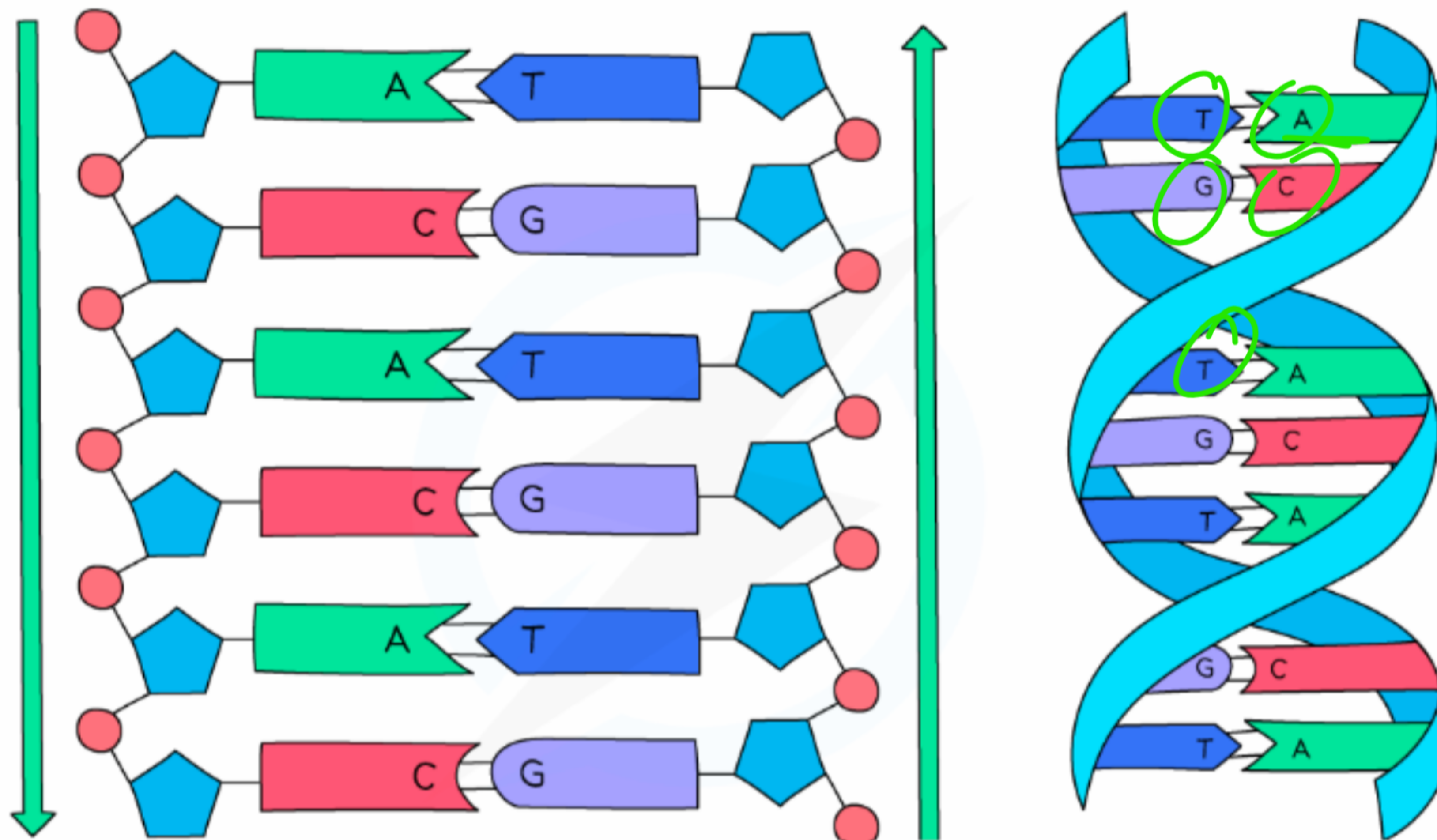
IMP

Natural Polymers

DNA

- **Deoxyribonucleic acid (DNA)** is a large molecule which is essential to all life
- It contains **genetic information** which it encodes as instructions which organisms need to develop and function correctly
- DNA consists of **four different monomers** called **nucleotides** which contain small molecules called **bases** and which are abbreviated to **A, T, C, and G** which are bound together by polymerisation
- The nucleotides form two strands that **intertwine**, giving the famous **double helix shape** of DNA
- The bases on either polymer chain pair up in **specific sequences** forming cross links that hold the strands together, giving rise to the double helix shape
- It is a complex molecule that contains **genetic information** which is stored in the order in which the bases organise themselves, which is a code for the organisms gene

Monomer
↓
nucleotide



A — T
G — C

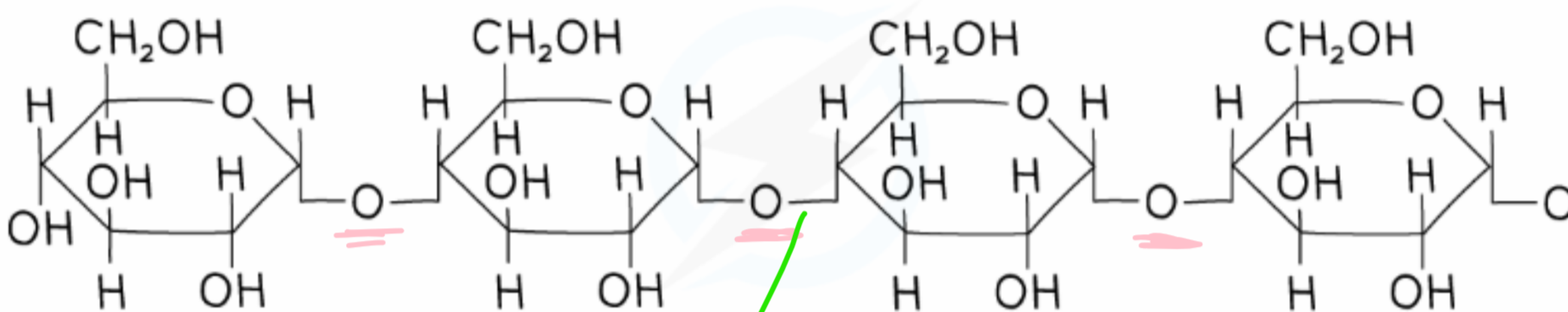
→ helical structure

Starch

- **Carbohydrates** are compounds of **carbon, hydrogen and oxygen** with the general formula $C_x(H_2O)_y$
- There are **simple** carbohydrates and **complex** carbohydrates
- Simple carbohydrates are called **monosaccharides** and are **sugars** such as fructose and glucose
- Complex carbohydrates are called **polysaccharides** such as **starch**
- **The monomers from which starch is made are sugars**
- **Starch is used to store energy** ✓
- Complex carbohydrates are **condensation polymers** formed from simple **sugar monomers** and, unlike proteins, are usually made up of the **same monomers**
- An H_2O molecule is eliminated when simple sugars polymerise
 - The linkage formed is an **-O- linkage** and is called a **glycosidic linkage**

glucose, fructose,
↑

What type of polymer starch takes place to make starch
Name linkage present in starch



glycosidic linkage

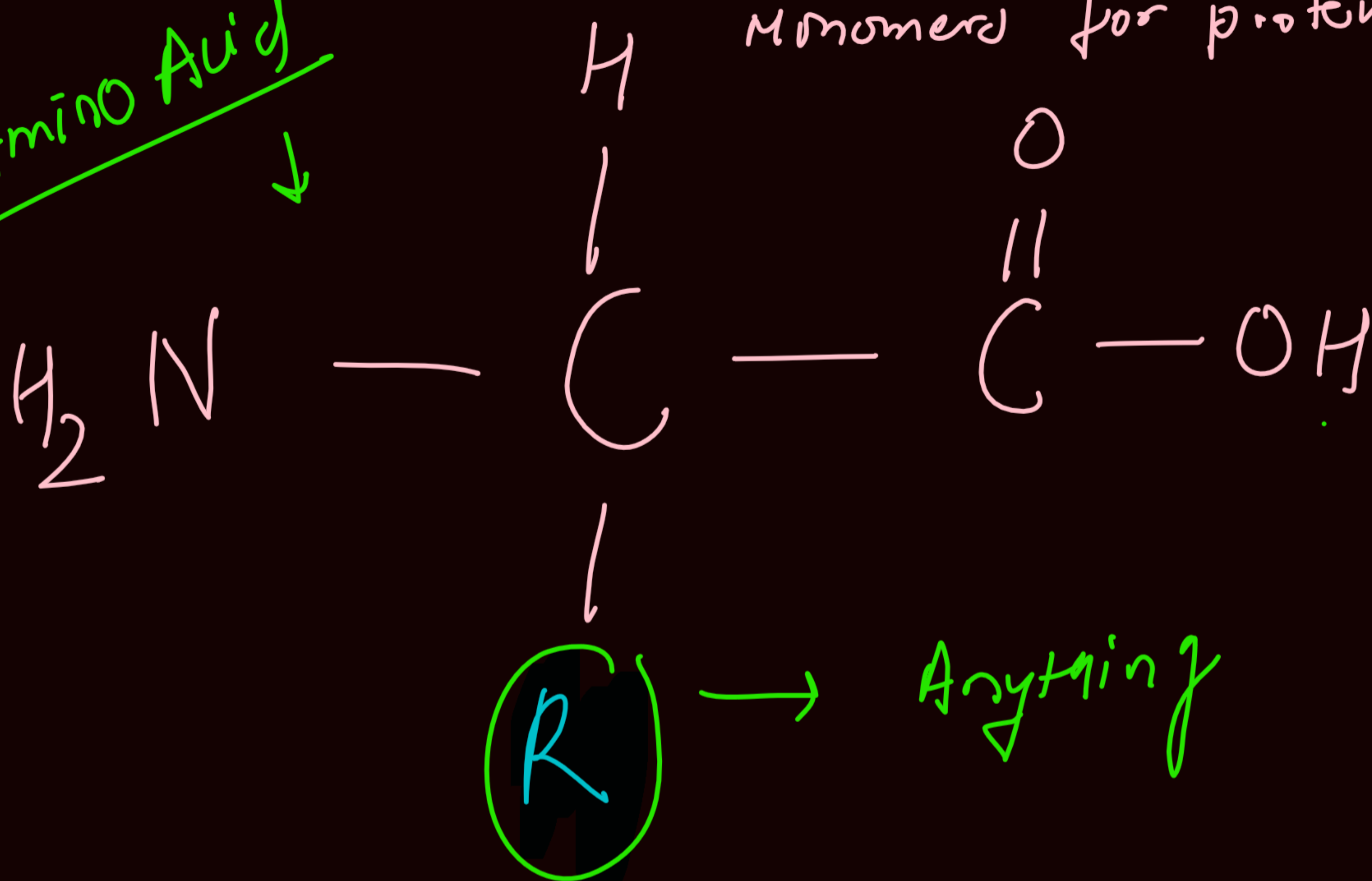
Monomer of starch

Role of starch

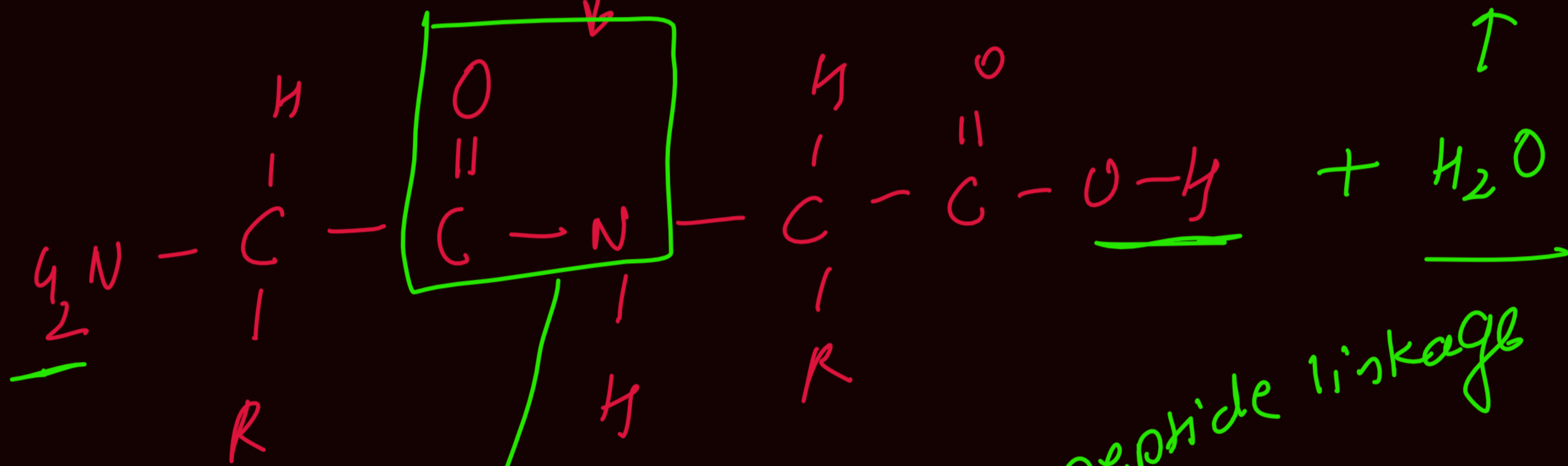
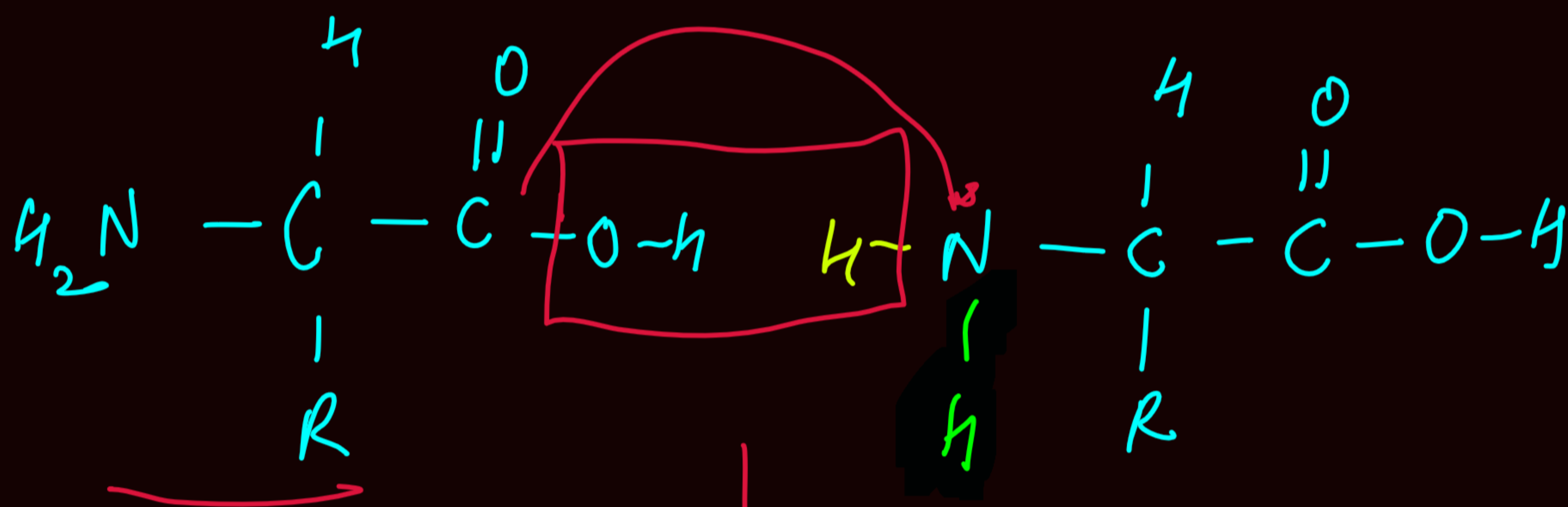
Protein :- made up of amino acids.

Amino Acid
↓

Monomers for protein



By changing R we can change amino acid.



eliminated
↑

amide or peptide linkage