صرف آبجیکٹو سوال کے جوابات کے لیے (For Use of Objective Questions Only) صرف آبجیکٹو سوال ہی حل کریں۔

Code _____

Q: No.	Answer

Classification of Carbohydrates

Carbohydrates

- Simple
  - monosaccharides
  - Oligosaccharides
- Complex
  - Polysaccharides

① **Monosaccharides:** → Greek word, mono = One and Sakron = Sugar

→ They are the simplest sugars and can't be hydrolyzed

→ The general formula is $C_n(H_2O)_n$.

Examples:- Glucose, Fructose, Galactose.

② **Oligosaccharides:** - Greek word, Oligo = few and Sakron = Sugar

→ Oligosaccharides are compound sugars that yield 2 to 10 molecules of same or different monosaccharides on hydrolysis.

→ The general formula is $C_n(H_2O)_{n-1}$ for Disaccharides and $C_n(H_2O)_{n-2}$ for tetrasaccharides

→ Oligosaccharide yielding 2 molecules of monosaccharide on hydrolysis is called disaccharide.

→ Oligosaccharide yielding 3 or 4 monosaccharides are called trisaccharides or tetrasaccharides respectively.

Examples:- Sucrose, Lactose, Maltose.

4 ③ **Polysaccharides:** Greek word :-

Poly = many , Sakron = Sugar

→ These are complex sugars and yield more than 10 molecules of monosaccharides on hydrolysis.

→ The general formula is $(C_6H_{10}O_5)_n$.

Example :- starch , glycogen.

Proteins:- Classification

→ On the basis of structure proteins are classified as :-

① **Primary structure protein** :- Long chain of Amino-acids arranged in a particular sequence.

② **Secondary structure protein** :- Polypeptide chain coiled into spiral or helix to have three-dimensional structure. **Examples** :- Keratin , silk fibers etc.

③ **Tertiary structure protein** :- long polypeptide chain become more stabilized by folding and coiling by forming ionic or disulphide bridges.

Examples : Globulins of Blood.

④ **Quaternary structure protein** :- when a protein is an assembly of more than one polypeptide or subunits. **Examples** : Hemoglobin & Insulin.

On the basis of biological function Proteins are classified as:-

① Enzymatic Proteins:- They are specialized proteins with catalytic activity. Examples:- Urease, catalase cytochrome C etc.

② Structural Protein :- These proteins aid in strengthening or protecting biological structures Examples:- Collagen, elastin, keratin etc.

③ Transport or carrier proteins:- These help in transport of ions or molecules in the body. Examples:- Myoglobin, haemoglobin.

④ Nutrient and storage proteins:- These provide nutrition to growing embryos and storing ions. Example:- AFP.

Lipids: Classification

- Saturated fat
- Trans fat
- Unsaturated fat

① Saturated fat: it is called solid fat because it is solid at room temperature. It is mostly in animal food such as milk, cheese and meat.

② Trans fat:- This is a fat that has been changed by a process of hydrogenation. The sources are:- Cookies, Crackers, chips.

③ Unsaturated fat:- it is liquid at Room temp:- It is mostly in oils from plants.