

Topic: Lipid (Structure & Classification)

Class: B.Sc Part –III (Hons.)

Paper- V

Group – A

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- **Fatty Acids**
- Fatty acids are carboxylic acids (or organic acid), usually with long aliphatic tails (long chains), either unsaturated or saturated.
- **Saturated fatty acids**
- Lack of carbon-carbon double bonds indicates that the fatty acid is saturated.
- The saturated fatty acids have higher melting points compared to unsaturated acids of the corresponding size due to their ability to pack their molecules together thus leading to a straight rod-like shape.

- **Unsaturated fatty acids**
- Unsaturated fatty acid is indicated when a fatty acid has more than one double bond.
- “Often, naturally occurring fatty acids possesses an even number of carbon atoms and are unbranched.”
- On the other hand, unsaturated fatty acids contain a cis-double bond(s)
- which create a structural kink that disables them to group their molecules in straight rod-like shape.

Role of Fats

- Fats play several major roles in our body.
- Some of the important roles of fats are mentioned below:
- Fats in the correct amounts are necessary for the proper functioning of our body.
- Many fat-soluble vitamins need to be associated with fats in order to be effectively absorbed by the body.
- They also provide insulation to the body.
- They are an efficient way to store energy for longer periods.

- **Waxes**
- Waxes are “esters” (an organic compound made by replacing the hydrogen with acid by an alkyl or another organic group) formed from long-alcohols and long-chain carboxylic acids.
- Waxes are found almost everywhere.
- Fruits and leaves of many plants possess waxy coatings, that can safeguard them from small predators and dehydration.
- Fur of a few animals and the feathers of birds possess same coatings serving as water repellants.
- Carnauba wax is known for its water resistance and toughness (significant for car wax).