

**Topic: Lipid (Structure & Classification)**

**Class: B.Sc Part –III (Hons.)**

**Paper- V**

**Group – A**

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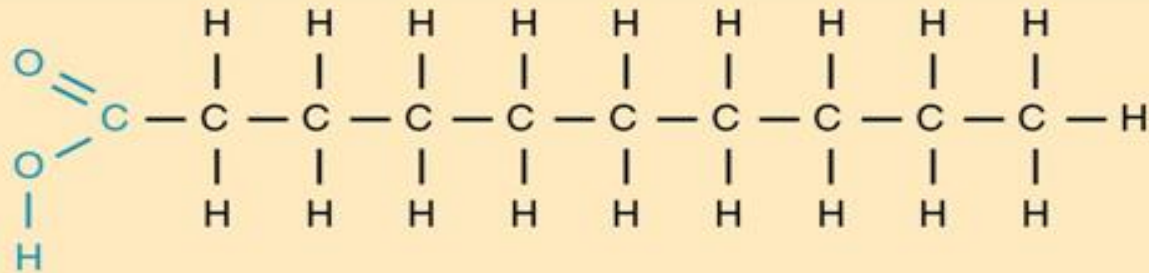
# Lipid Structure

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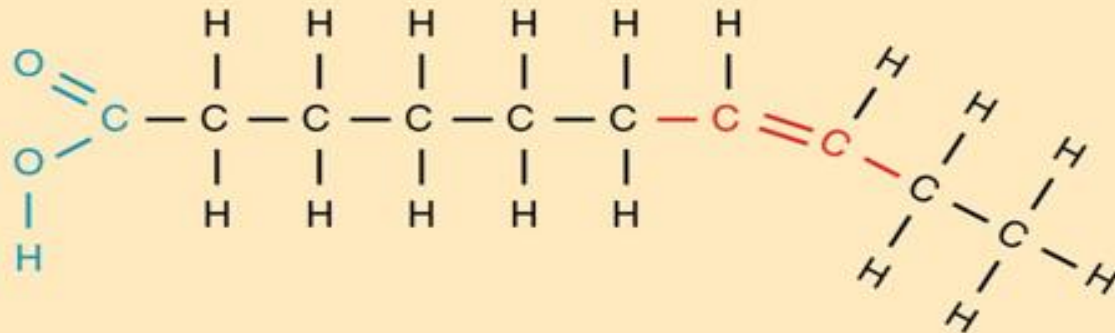
- Lipids are the polymers of fatty acids
- That contain a long, non-polar hydrocarbon chain with a small polar region containing oxygen.
- The lipid structure is explained in the diagram below:

# Lipid Structure – Saturated and Unsaturated Fatty Acids

(a) Saturated



(b) Unsaturated



# Classification of Lipids

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- Lipids can be classified into two main classes:
- Nonsaponifiable lipids, and
- Saponifiable lipids.
- **Nonsaponifiable Lipids**
- A nonsaponifiable lipid cannot be disintegrated into smaller molecules through hydrolysis.
- Nonsaponifiable lipids include cholesterol, prostaglandins .

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- **Saponifiable Lipids**

- A saponifiable lipid comprises one or more ester groups, enabling it to undergo hydrolysis in the presence of a base, acid, or enzymes, including waxes, triglycerides, sphingolipids, and phospholipids.
- Further, these categories can be divided into non-polar and polar lipids.
- Nonpolar lipids, namely triglycerides, are utilized as fuel and to store energy.

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- ⦿ Polar lipids, that could form a barrier with an external water environment, are utilized in membranes.
  - ⦿ Polar lipids comprise sphingolipids and glycerophospholipids.
  - ⦿ Fatty acids are pivotal components of all these lipids.