K M G G P G C

Assignment

M.Sc. Zoology
Semester-II

Title of Assignment:

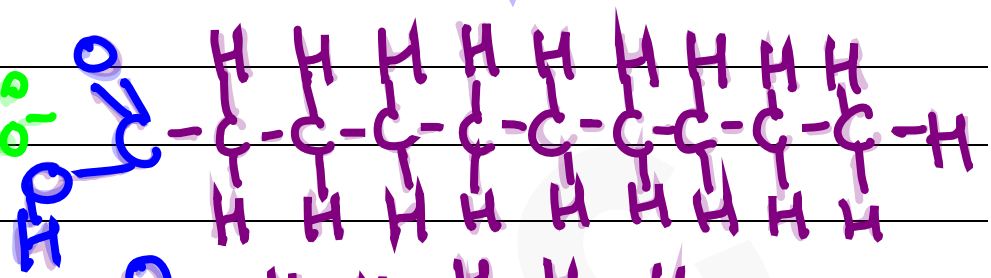
Student Name:

Roll Number:

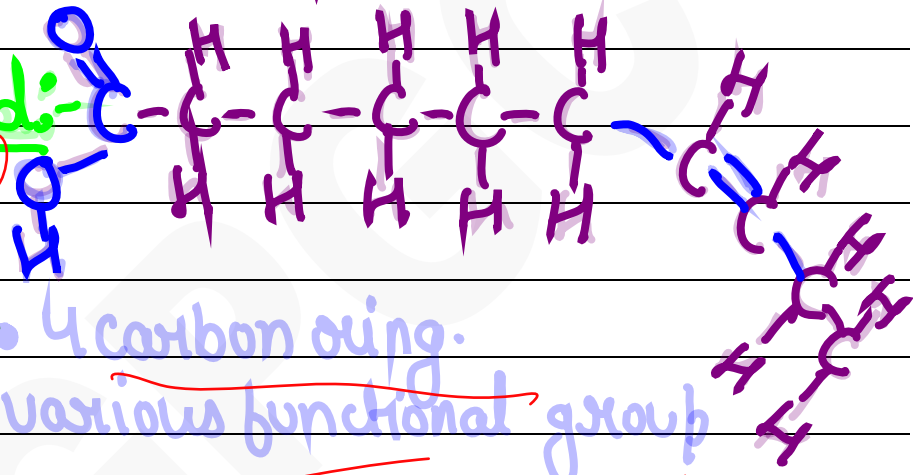
(last Page)

Fatty acids :- fatty acids are carboxylic acid often with long aliphatic tail, either saturated or unsaturated.

(a) **Saturated :-** (σ Bond)



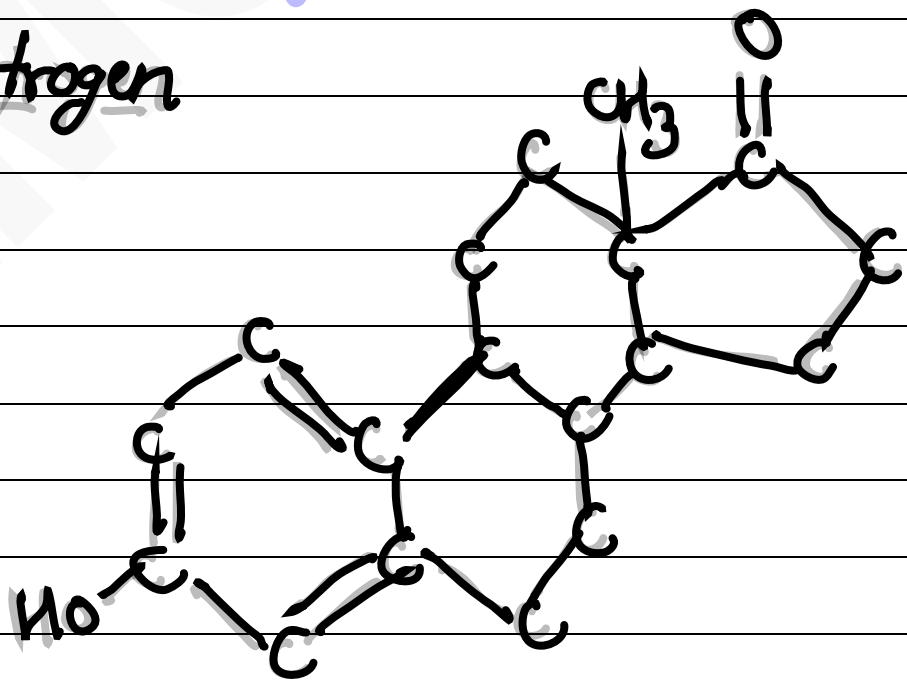
(b) **Unsaturated :-** (= or ≡ bond)



(2) → Steroids :-

- 4 carbon ring.
- various functional group attached.
- Include cholestrol, sex harmone (Progesterone, estrogen and testosterone) produced by gonads and cortisone.

Ex: Estrogen



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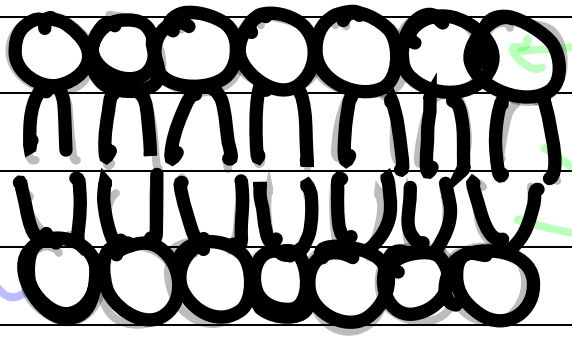
Lipid :-

Lipids are Organic Compounds that that Contain hydrocarbons which are the foundation of the structure and function of living cell. lipids are non-polar, so they are soluble in non-polar envirhment thus, not being water soluble because water is polar.

- They are fat, oils, steroids and waxes.
- Large number of Carbon, hydrogen bonds.
- it combined with fatty acids to form esters.
- it Takes part in plant and animal metabolic
- it's a second Organic compounds that serve as food for the body.
- They are esters of long chain of fatty acids and alcohol.



Sources of lipid:-

- Egg
- milk
- Butter
- chesse
- fish oil
- dry fruits
- coconut.

Non-veg

Function of lipid :-

- Lipids are constituents of cell membrane and regulate membrane permeability
- Act as a hormone.
- Lipids are important component of cell membrane structure in Eukaryotic cell

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- Lipids are storage compounds. Triglycerides serve as reserve energy of the body.
- Lipids regulate membrane permeability.
- They provide the shape of cell.
- Lipids are components of some enzyme systems.
- cholesterol is found in cell membran, blood, and bile of many Organism.
- They are serve as source for fat soluble vitmens like A, D, E, K.
- Lipids are small molecules and are insoluble in water, they act as signalling molecules.
- Giving shape to the body.

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Structure of Lipid

Lipids

- **Simple lipids**
  1. Fat
  2. Waxes
- **Complex lipids**
  1. Phospholipids
  2. Glycolipid
  3. Lipoprotein
- **Derived lipids**
  1. Steroids
  2. Fatty acids

Dont use Red colour in writing. Only in Dig.

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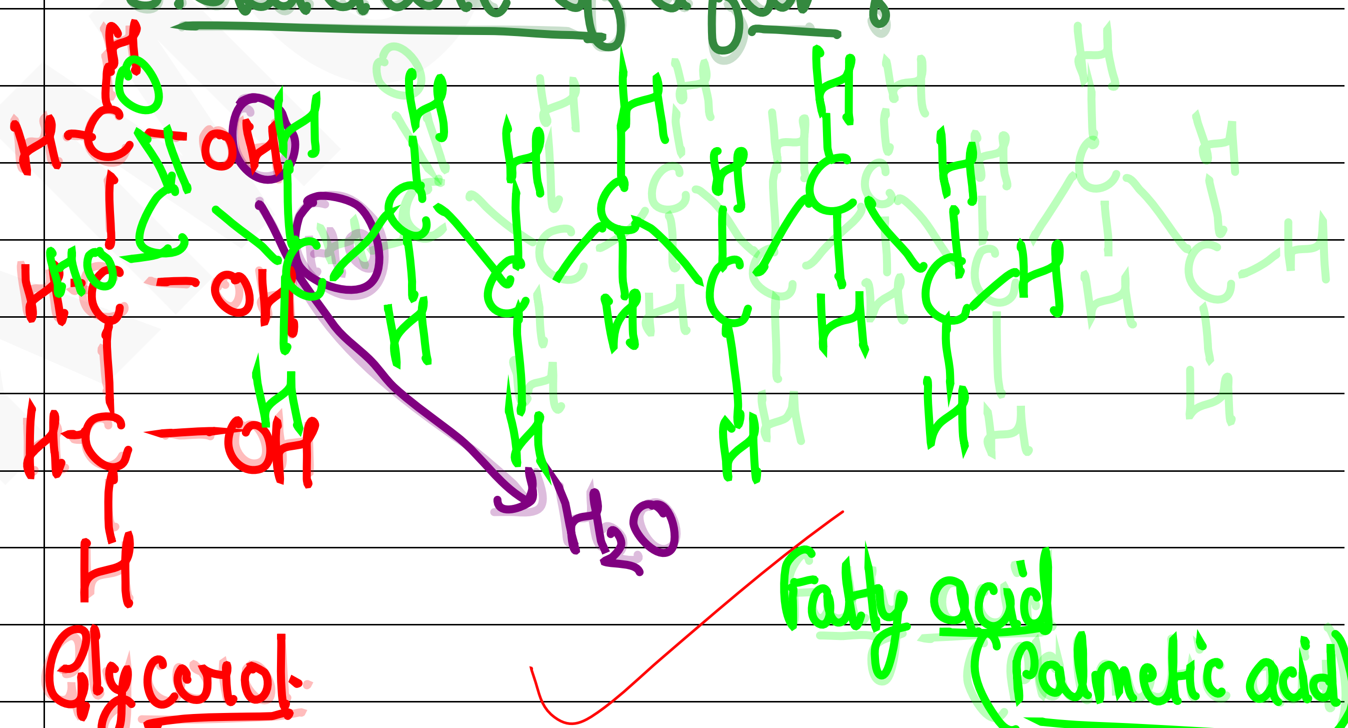
Classification and structure of lipids

Simple Lipids :-
Lipids are the esters of fatty acid with alcohol.

(1) **Fat :-** Easters of fatty acids with glycerol. oils are fat in the liquid state.

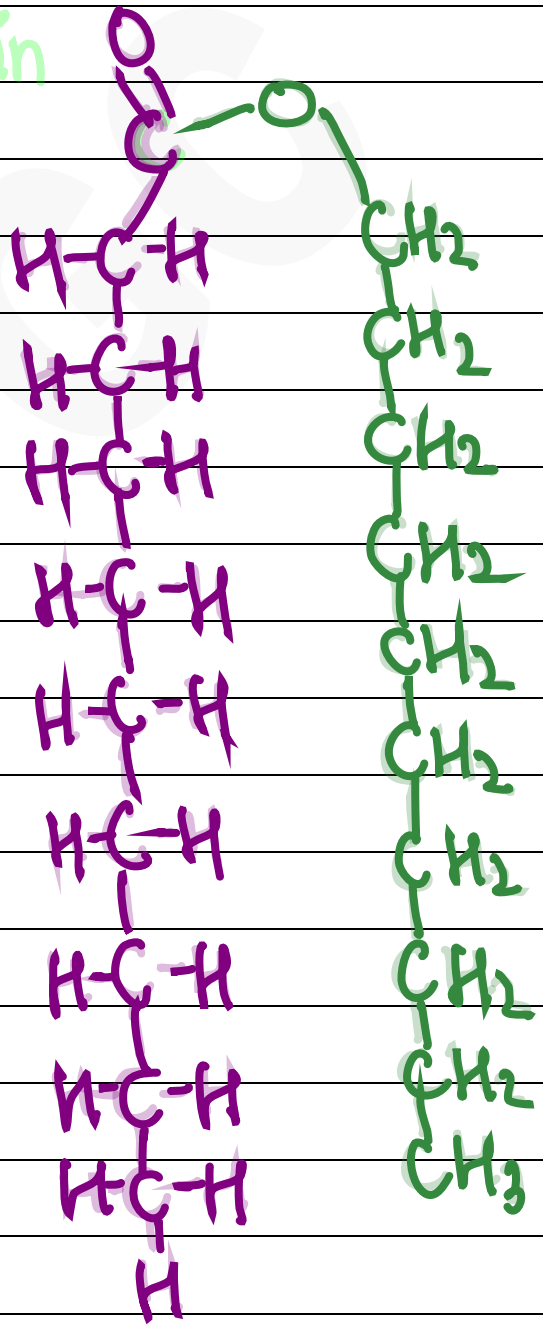
Structure of a fat :-



② Waxes :-

Esters of fatty acids with higher molecular weight monohydric alcohols.

- long fatty acid chain
- long alcohol chain.



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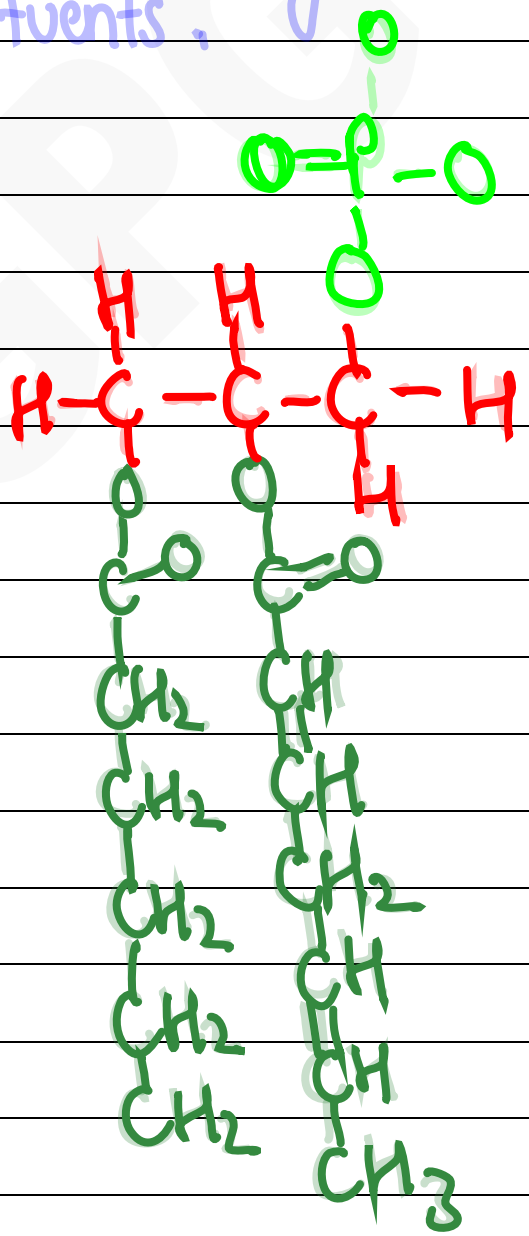
Complex lipids :-

① Phosphodipids :-

Lipids containing, in addition to O, fatty acid and an alcohol, Phosphoric acid residue. They frequently have nitrogen-containing bases and others substituents.

- Phosphate
- 2 fatty acids
- Glycerol.



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② Glycolipids :- (Glycosphinolipids)

lipids containing a fatty acids, sphingosine and Carbohydrate

① other complex lipids :- lipids such as sulfolipids and amino lipids. Lipoprotein may also be placed in this categosry.

Derived lipids

Include fatty acids, glycerol, steroids, other alcohols, fatty acid aldehydes and ketone bodies hydrocarbons, lipid soluble vitmens and hormone. Because they are uncharged, acylglycerols, cholesterol and cholesteryl esters are termed nutral lipids