

## Question bank for lipids

### Define:

Lipids, Simple lipids, Neutral lipids, Wax, fatty acids, C-system,  $\omega$ - System, Essential fatty acids, Non-essential fatty acids, Compound lipids, Glycerophospholipids, Sphingophospholipids, Phospholipids, Ceramide, Lipoproteins, Glycolipids, Derived lipids, Rancidity, Hydrolytic rancidity, Oxidative rancidity

### Fill the blanks

Triacylglycerol contain ----- fatty acids esterified to glycerol

Monoacylglycerol contain ----- fatty acids esterified to glycerol

Diacylglycerol contain ----- fatty acids esterified to glycerol

Triglyceride (containing one type of fatty acids) is called -----like tripalmitin acid, triolein

Triglyceride containing two or three different fatty acids are called ----- like oleopalmitostearin, oleodipalmitin.

Fats obtained from animal are solid at room temperature which contain a higher percentage of -----, while those obtained from plant are liquid at room temperature which rich in -----

The fats we eat are mostly in the form of -----.

Triacylglycerols can be hydrolyzed by ----- enzyme to obtain ----- and -----.

Fatty acids, which occur in neutral lipids may be -----, -----, ----- and -----

Fatty acids, which occur in neutral lipids usually contain an ----- number of C atoms

Lipids can be classified into -----, -----, and -----

The double bonds in polyunsaturated fatty acids are separated at least by one ----- group

Simple lipids are divided into two types, depending on the type of alcohols -----, and -----

Two systems are used to designate the position of double bond in fatty acids-----, and-----

In c-system: Oleic acid with ----- at C number----- is represented as-----

In c-system: linoleic acid acid with ----- at C number----- is represented as-----

In c-system: linolenic acid with ----- at C number----- is represented as-----

In c-system: Arachidonic acid with ----- at C number----- is represented as-----

In  $\omega$ -system: Oleic acid with ----- at C number----- is represented as-----

In  $\omega$ -system: Linolenic acid with ----- at C number----- is represented as-----

In  $\omega$ -system: Linoleic acid with ----- at C number----- is represented as-----

The first double bond: In vegetable oils is at carbon ----- (omega -----). In fish oils is at carbon ----- (omega-----) depending on the  $\omega$ -system

----- is the precursor of a class of hormone like molecules known as eicosanoids

Compound lipids are esters of fatty acid with alcohol containing -----groups

Compound lipids are classified to three groups, according to the type of prosthetic group -----, -----, and -----.

Phospholipids can be classified on the basis of alcohol to-----, and -----

The simplest glycerophospholipid is -----, and it is the precursor for all other glycerophospholipid.

Phospholipids derived from alcohol ----- are called sphingophospholipids.

Glycolipids are molecules that contain ----- and ----- . When glycolipids contain sphingosine is called -----

The simplest glycosphingolipids are -----.

Cerebrosides are ----- contain glucose or galactose

Gangliosides are glycolipids contain ----- groups

Cholesterol is a precursor of -----, -----, and -----

stigmasterol is a sterol present in -----sources, while cholesterol is a sterol present in -----

Terpenes are a class of lipids formed from combination of two or more molecules of ----- units.

Fats and oils are widely distributed in nature in both ---- and ----- tissues.

Simple lipids are esters of ----- with -----

Most of the triglycerides which occur in nature are ----- triglycerides

Arachidonic acid is the precursor of a class of hormone like molecules known as -----

The eicosanoids include four groups of compounds----,-----,----,-----.

The simplest glycerophospholipid, is -----, and it is the precursor for all other glycerophospholipid.

On complete hydrolysis, lecithin yields ----, -----, ----- and 2 molecules of ----.

Partial hydrolysis of lecithin by ----- causes removal of ----- to yield -----

Phospholipids derived from alcohol sphingosine are called -----.

When glycolipids contain sphingosine is called -----.

Gangliosides are ----- that possess ----- groups, including one or more molecules of sialic acid.

Cholesterol is the major sterol in ----- tissues.

Terpenes are a class of lipids formed from combination of two or more molecules of ----- unit

### **Explain why?**

Fatty acids are amphipathic in nature.

The double bonds in a fatty acid are usually in the cis-configuration.

Glycerolphospholipids are amphipathic in nature.

Sphingophospholipids are amphipathic in nature

sphingomyelins are amphipathic in nature

**Write five Functions of lipids**

**Write the structure of:**

Stearic acid, Palmitic acid, Oleic acid, Linoleic acid, linolenic acid, Arachidonic acid, phosphatidic acid, sphingosine, Cephalin, lecithin

**Write the Biological importance of phosphoglycerides**

**What is the difference between Lecithin and Cephalin**

**What molecules are formed from arachidonic acid?**

**What are the difference between**

- 1- Glycerophospholipids and Sphingophospholipids
- 2- Cephalin and lecithin
- 3- Glycolipids and phospholipid
- 4- Oils and fats

5- Phosphatidyl ethanol inositol and lecithin

**Define Lipoproteins, and write the four major class of plasma Lipoproteins with their functions.**

**Write the function of cholesterol**

**Multiple choice questions**

1. The nitrogenous base present in lecithin  
(a)Choline (b) Ethanolamine (c) Inositol (d) Serine.
2. The number of double bonds present in arachidonic acid  
(a)1 (b)2 (c)3 (d)4.
3. One of the following is an amphipathic lipid  
a)Phospholipids (b)Fatty acid(c)Bile salts(d)All of the above.

**What are the biological processes that are regulated by prostaglandins and related compounds?**

**Write the importance of wax**