



FREQUENTLY ASKED QUESTIONS

Q.No. 1: What are fatty acids?

Ans:-Fatty acids are defined as compounds synthesized in nature by condensation of malonyl coenzyme A units under the influence of a fatty acid synthase complex. Fatty acid molecule is amphipathic and has two distinct regions and ends: a long hydrocarbon chain, which is hydrophobic (water insoluble) and not very reactive chemically, and a carboxyl acid group which is ionized in solution (COO^-), extremely hydrophilic (water soluble) and readily forms esters and amides.

Q.No. 2: What are the main types of fatty acids?

Ans:-Fatty acids are mainly of two types:

- Saturated fatty acids
- Unsaturated fatty acids

Q.No. 3: What are saturated fatty acids?

Ans:-Fatty acids that do not contain carbon-carbon double bonds ($-\text{C}=\text{C}-$) are called saturated fatty acids, as they cannot undergo further hydrogenation. Under normal conditions, these compounds are most often white solids.

Q.No. 4: Name some common saturated fatty acids?

Ans:- Butyric, Caproic, Capric, Lauric, Myristic are some common saturated fatty acids.

Q.No. 5: What are unsaturated fatty acids?

Ans:-Fatty acids that contain double bonds are known as unsaturated fatty acids, which may further be hydrogenated. They are usually colourless liquids. For most of them, all double bonds are in the cis position, when determining the position of the double bonds their exact location is pointed out.

Q.No. 6: What are the two main classes of unsaturated fatty acids?



Ans:- The two main classes of unsaturated fatty acids are:-

- Mono unsaturated fatty acids
- Poly unsaturated fatty acids

Q.No. 7: Define Poly unsaturated fatty acids?

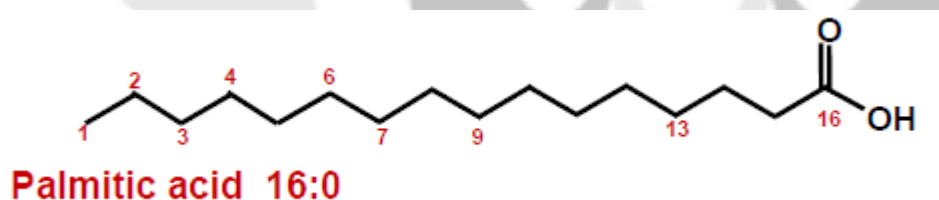
Ans:- Polyunsaturated fatty acids are the compounds that have at least two double bonds, and at least 18 carbon atoms in the alkyl chain. Biological activity of the molecule depends on the configuration and the specified position of the cis double bonds.

Q.No. 8: What is the importance of omega-6-fatty acids?

Ans:- Omega-6 fatty acid is also a polyunsaturated fat, essential for human health because it cannot be synthesized in the body. For this reason, people must obtain omega-6 fatty acids by consuming foods like as meat, poultry, eggs, nut and plant-based oils such as canola and sunflower oils.

Q.No. 9: Show is the structure of Palmitic acid?

Ans:-



Q.No. 10: Define Hydrolytic rancidity?

Ans:- Rancidity refers to the odor that develops when triglycerides are hydrolyzed and free fatty acids are released. This reaction of lipid with water sometimes requires a catalyst, but results in the formation free fatty acids and salts from free fatty acids (soaps).

Q.No. 11: What is the role of fatty acids in vegetable oils?

Ans:- In cosmetic industry, vegetable oils are used mainly as the vehicle for other active ingredients, dissolved or dispersed in oil-water type emulsions. The most often



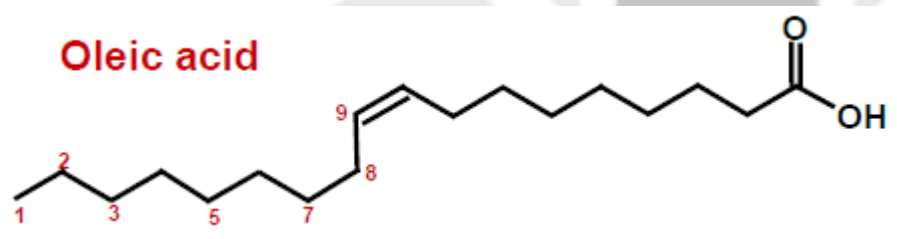
used essential unsaturated fatty acids are those from the omega-3, omega-6 and omega-9 series.

Q.No. 12: Define Oxidative rancidity?

Ans:-Oxidative rancidity of fats such as shortenings, salad and cooking oils refers to the undesirable odors and flavors which develop when such products are exposed to the oxygen in the air. Products containing these fats, including but not limited to food products such as fish, poultry, meat, frozen vegetables and dry milk can become rancid as the fats in these products react with air.

Q.No. 13: What is the structure of Oleic acid?

Ans:-



Q.No. 14: What is the role of fatty acids in skin?

Ans:- Linoleic acid occurs most abundantly in sunflower oil, soybean oil, safflower, corn oil, sesame oil, peanut oil, grape seed oil and wheat sprout oil. This compound plays a significant role in the skin. In dry skin, it strengthens the lipid barrier of epidermis, protects against trans epidermal loss of water and normalizes the skin metabolism.

Q.No. 15: What is Epoxidation?

Ans:- Epoxides are produced by reaction of double bonds with peracids. This proceeds by a concerted mechanism, giving cis stereospecific addition. Thus, a cis olefin leads to a cis epoxide and a trans olefin to a trans epoxide.