1a.Cholesterol is essential for making a number of critical hormones, including the stress hormone cortisol.

b. Cholesterol is also used to make the sex hormones testosterone, progesterone, and estrogen. c. The liver also uses cholesterol to make bile, a fluid that plays a vital role in the processing and digestion of fats.

d. Cholesterol helps to regulate membrane fluidity over the range of physiological temperatures.

2. Cerebrosides are sphingolipids with a single sugar head group, globosides have multiple sugars, and gangliosides have multiple sugars including at least one sialic acid. Cerebroside and globoside head groups are neutral, whereas ganglioside head groups are charged.

3. S-Adenosyl methionine

4. there is a double bond between carbons 5 and 6.

5a.Fatty acids and phosphoglycerides are amphiphilic, as they have both hydrophobic (fears water) and hydrophilic (loves water) parts.

b.The aliphatic chains of fatty acids are hydrophobic.

c.The carboxyl groups of fatty acids and the head groups of phosphoglycerides are hydrophilic.