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MEDICAL LABORATORY SCIENCE

Batch 202

Assignment 3

Clinical Biochemistry AND Xenobiotic

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Question 1. State 4 Importance of Cholesterol

1. Cholesterol is essential for the body to produce Vitamin D by acting as a precursor
2. The body need some Cholesterol to make hormones like oestrogen, testosterone and adrenal hormones
3. Cholesterol molecule exist as transporters and signalling molecule along the membrane (cell)
4. Cholesterol help in nerve conduction

②

Differentiate between globosides and gangliosides  
Globosides is a type of glycosphingolipid with more than one sugar as the side chain of ceramides while a ganglioside is a molecule composed of a glycosphingolipid with one or more sialic acids linked on the sugar chain. The neuronic, an acetylated derivatives of the carbohydrate **Sialic Acid**, makes the head group of gangliosides anionic at pH 7; which distinguishes them from globosides.

Question 3: Methylated form of phosphatidyl ethanol amine is known as phosphatidyl-N-methylethanolamine

Question 4: Which ring of cholesterol molecule contains a double bond?

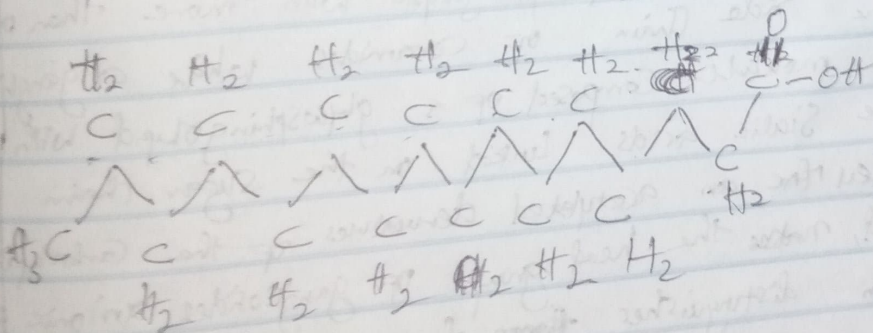
B-ring contains the double bond

5. State 3 properties of Phosphoglycerides
- 1) they are amphiphilic (Water loving - fatty factor)
  - 2) they are the main constituent of membrane bilayer (cell)
  - 3) they are characterized by a phosphatic acid backbone

6. In a tabular form differentiate between triacylglycerides and phosphoglycerides. State examples and with Schematic Structure

Triacylglyceride	Phosphoglyceride
Triacylglyceride is formed by three fatty acids chemically linked to a glycerol molecule by a dehydration synthesis reaction	It is made of three carbon backbone of glycerol plus long chain fatty acids esterified (or attached via an ether link in Archaea) to hydroxyl groups on C <sub>1</sub> and C <sub>2</sub> of the glycerol and phosphate acid esterified to the C <sub>3</sub> hydroxyl group of glycerol

Example of palmitic acid



Example of Phosphoglyceride

