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18/MHS06/012

MEDICAL LABORATORY SCIENCE

BCH 202

1.) State 4 importance of cholesterol.

a. It is a major component of Plasma membrane and Plasma Lipoproteins

b. It is a precursor of Bile salts

c. It is required for nerve transmission

d. It is a precursor of Steroid hormones which includes Adrenocortical hormones, Sex hormones and Parental Hormones.

2.) Differentiate between globosides and gangliosides.

a. GLOBOSIDES have multiple sugars while, GANGLIOSIDES have multiple sugars including at least one sialic acid.

b. GLOBOSIDES head groups are neutral, whereas GANGLIOSIDES head groups are charged.

c. Gangliosides are present and concentrated on cell surfaces with two hydrocarbon chains of the

ceramide moiety embedded in the plasma membrane and the oligosaccharides located on the

extracellular surface, they are found predominantly in the nervous system where they constitute about

6% of all phospholipids.

Globosides is the most abundant red cell membrane glycolipid and is present in the serum of all

p+ individuals.

3.) Methylated form of phosphatidyl ethanol amin is known as An auxiliary pathway for

phosphatidylcholine biosynthesis in the liver.

4.) Which ring of cholesterol molecule contains a double bond?

Answer

The four rings (A, B, C, D) have trans ring junctions, and the side chain and two methyl groups

(C-18 and C-19) are at an angle to the rings above the plane with β stereochemistry (as for the

hydroxyl group on C-3 also); there is a double bond between carbons 5 and 6. So therefore Ring

C contains double bond.

5.) State 3 properties of phosphoglycerides.

a. They are common constituents of cellular membranes

b. They have both hydrophilic and hydrophobic natures.

c. They have glycerol backbone

6.) In a tabular form, differentiate between triacylglycerol and phosphoglyceride. State examples

and with schematic structures.

Triacylglycerol	Phosphoglyceride
They have 3 fatty acid	They have 2 fatty acid
A lipid that is composed of a glycerol backbone	Composed of glycerol with phosphate and an amino acid
They act as storage for fat in our body	Main lipid component of cell membranes and are important in cell semi permeability