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QUESTION
Is vitamin c a coenzyme? Justify your answer. Describe the chemistry of phospholipids. Differentiate between phospholipid and glycolipids To aid for reading

ANSWERS
1.No vitamin c is not a coenzyme because Vitamin C functions as a cofactor in many enzymatic reactions in animals (and humans) that mediate a variety of essential biological functions, including wound healing and collagen synthesis. In humans, vitamin C deficiency leads to impaired collagen synthesis, contributing to the more severe symptoms of scurvy. Another biochemical role of vitamin C is to act as an antioxidant (a reducing agent) by donating electrons to various enzymatic and non-enzymatic reactions. Doing so converts vitamin C to an oxidized state - either as semidehydroascorbic acid or dehydroascorbic acid. These compounds can be restored to a reduced state by glutathione and NADPH-dependent enzymatic mechanisms.In plants, vitamin C is a substrate for ascorbate peroxidase. This enzyme utilizes ascorbate to neutralize excess hydrogen peroxide (H_2O_2) by converting it to water (H_2O) and oxygen.

2. Chemistry of phospholipids :
Phospholipids are a class of lipids that are a major component of all cell membranes. They can form lipid bilayers because of their amphiphilic characteristic. The structure of the phospholipid molecule generally consists of two hydrophobic fatty acid "tails" and a hydrophilic "head" consisting of a phosphate group. The two components are usually joined together by a glycerol molecule. The phosphate groups can be modified with simple organic molecules such as choline, ethanolamine or serine.
Lipids containing, in addition to fatty acids and analcohol, a phosphoric acid residue. They also have nitrogen containing bases and other substituents.
Phospholipids may be classified on the basis of the type
of alcohol present in them as:
• Glycerophospholipids
• Sphingophospholipids

Difference between phospholipid and glycolipids :
1.Phospholipids are lipids containing phosphate groups while glycolipids are lipids containing carbohydrates

2. Phospholipids are composed of lipid residue and phosphate group while glycolipids are composed of lipid residue and carbohydrate moiety

3. Phospholipids has hydrophilic head and two hydrophobic tails while glycolipids has hydrophilic head and hydrophobic tail

4. The occourance of phospholipids is bio membranes such as cell membrane, lysosomal membrane, mitochondrial membrane, endoplasmic reticulum membrane, golgi apparatus membrane etc while the occourance of glycolipids is cell membrane.