**1. Yes, Vitamin C is a Coenzyme**

Vitamin C, or ascorbic acid is a Coenzyme because it acts as an electron donor, changing in the process to dehydroascorbic acid. This reaction is important for the production of bile acid and the break down of tyrosine.

**2. Differences between glycolipids and phospholipids**

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| **Glycolipids** | **Phospholipids** |
| **Glycolipids are lipids containing carbohydrates.** | **Phospholipids are lipids containing phosphate groups.** |
| **Lipid residue and carbohydrate moiety.** | **Lipid residue and phosphate group.** |
| **Hydrophilic head and hydrophobic tail.** | **Hydrophilic head and two hydrophobic tails.** |
| **It occurs in the cell membrane .** | **It occurs in bio-membrane such as cell membrane, lysosomal membrane, mitochondrial membrane, endoplasmic reticulum membrane, Golgi apparatus membrane, etc.** |

**3. Chemistry of phospholipids**

Phospholipids (PL) 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.

It is amphipathic in nature. An amphiphile is a term describing a chemical compound possessing both hydrophilic (water-loving, polar) and lipophilic (fat-loving, non-polar) properties; lipophilic properties can also be considered hydrophobic (water-avoiding). The phospholipid head usually contains a negatively charged phosphate group and glycerol; it is hydrophilic. The phospholipid tails usually consist of 2 long fatty acid chains; they are hydrophobic and avoid interactions with water. When placed in aqueous solutions, phospholipids are driven by hydrophobic interactions that result in the fatty acid tails aggregating to minimize interactions with water molecules. These specific properties allow phospholipids to play an important role in the phospholipid bilayer. In biological systems, the phospholipids often occur with other molecules (e.g., proteins, glycolipids, sterols) in a bilayer such as a cell membrane.[2] Lipid bilayers occur when hydrophobic tails line up against one another, forming a membrane of hydrophilic heads on both sides facing the water.

Such movement can be described by the fluid mosaic model, that describes the membrane as a mosaic of lipid molecules that act as a solvent for all the substances and proteins within it, so proteins and lipid molecules are then free to diffuse laterally through the lipid matrix and migrate over the membrane. Sterols contribute to membrane fluidity by hindering the packing together of phospholipids. However, this model has now been superseded, as through the study of lipid polymorphism it is now known that the behaviour of lipids under physiological (and other) conditions is not simple.