Name: Ilori Modupefoluwa Naomi

Department: Human Anatomy

Matric number: 18/mhs03/005

Course Title: Medical Biochemistry II

Course Code: BCH 204

Question

1a. What are coenzymes

b. Differentiate between fat and water soluble vitamins

c. Describe niacin in relation to its coenzymic function

* A coenzyme is an organic non-protein compound that binds with an enzyme to catalyze a reaction. Coenzymes are often broadly called cofactors, but they are chemically different. A coenzyme cannot function alone, but can be reused several times when paired with an enzyme.
* Fat-soluble vitamins are soluble in fats. They are absorbed by fat globules that travel through the small intestines and into the general blood circulation within the body. Unlike water-soluble vitamins, fat-soluble vitamins are stored in the body when they are not in use. Typically, they are stored in the liver and fat tissues. Although only small amounts of these vitamins are necessary to maintain good health.

Water-soluble vitamins dissolve in water, which means these vitamins and nutrients dissolve quickly in the body. Unlike fat-soluble vitamins, water-soluble vitamins are carried to the body’s tissues, but the body cannot store them. Any excess amounts of water-soluble vitamins simply pass through the body. Because these vitamins are needed by our bodies, we need to make sure we intake these vitamins on a regular basis. Water soluble vitamins include Vitamin C and the vitamin B complex: thiamin (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), Vitamin B6, biotin (B7), folic acid (B9), Vitamin B12. Vitamin A in its Beta-Carotene form is also water-soluble.

* Niacin is a coenzyme, like thiamine and riboflavin, that is responsible for energy release from carbohydrates. A niacin deficiency can lead to pellagra, a disabling disease with symptoms that may be characterized by four “Ds”: depression, diarrhea, delirium and dementia. Niacin is found in fortified breads and cereals. Protein foods, such as eggs, fish, meat, dairy milk and poultry, are naturally rich in niacin. They are also plentiful in the amino acid tryptophan, which can be synthesized into niacin by the liver. Chicken breast, ground beef, halibut, tuna and turkey are particularly good sources of tryptophan. In the vegetable kingdom, asparagus, baked potatoes and cantaloupe have significant amounts of tryptophan.