FACULTY OF ENGINEERING SCIENCES
LIBRARY
UNIVERSITY OF GHANA

UNIVERSITY OF GHANA
(All rights reserved)

BSC. ENGINEERING SECOND SEMESTER EXAMINATIONS: 2015/2016

SCHOOOL OF ENGINEERING SCIENCES

FPEN 204: PHYSICAL AND CHEMICAL PROPERTIES OF FOODS (3 Credits)

INSTRUCTIONS: ANSWER ANY FIVE (5) QUESTIONS

TIME ALLOWED: THREE (3) HOURS

1.

a. Mayonnaise is an example of a dispersed food system and can be basically produced using only three ingredients. Describe how the properties of these essential ingredients allows for the production of mayonnaise.

b. What are the possible options for adding essential nutrients to foods during processing?

2.

a. Describe the characteristics of the different zones of a solubility curve and use it to explain the phenomenon of crystallisation in foods.

b. Explain how the gelling properties of pectins are employed in the preparation of regular and diabetic jams.

3.

a. The development of brown colour during toasting of bread or exposure of a cut fruit to air occurs through different mechanisms. Identify the respective mechanisms and differentiate between them.

b. Briefly describe how you would determine the protein content of a sample of cowpeas.

4.

a. The structural conformation of proteins plays an important role in the proper functioning of proteins. Discuss the different levels of protein structures.

b. Explain briefly the importance of moisture content of a food ingredient in food processing.

5.

a. Draw a typical moisture sorption isotherm and discuss the characteristics of its key zones.

b. In general terms, a food additive is any substance added to food. Outline the conditions under which the use of food additives is acceptable.

6.

a. What are functional properties of foods?

b. Describe three functional properties **each** of carbohydrates and lipids.