



UNIVERSITY OF GHANA
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BSC. SECOND SEMESTER EXAMINATIONS: 2014/2015

**FPEN 408: MICROBIOLOGICAL APPLICATIONS IN FOOD PROCESSING
(2 Credits)**

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

TIME ALLOWED: TWO (2) HOURS

1. Microbial activities within the food process industry can be either beneficial or detrimental to the final product. Discuss three scenarios each where microbes are useful or harmful.
2. Differentiate between the following:
 - a. *Best Before* and *Use by* dates
 - b. Microbiological standard, specification and guideline
 - c. Types of food-borne illnesses
3.
 - a. Maize dough is an important raw material in the processing of several Ghanaian foods. Describe in detail the process of fermentation during the different stages of maize dough preparation.
 - b. What are the benefits of lactic acid fermentation in the processing of traditional Ghanaian foods?
4.
 - a. With specific examples, explain the use of two and three class plans for microbiological criteria to either accept or reject a batch of product.
 - b. Explain the following as applied in the thermal preservation of foods:
 - i. D-value
 - ii. z-value
 - iii. 12D concept

5. You have been hired as a Consultant for a national project to improve food safety in traditional food processing facilities. As a pilot project, design a HACCP plan for kenkey production in a semi-commercial processing plant.