

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN BIOCHEMISTRY**

BIOC 315: BIOCHEMISTRY OF FOOD PROCESSING

STREAMS: BSC (BIOC)

TIME: 2 HOURS

DAY/DATE: WEDNESDAY 15/04/2020

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER TWO QUESTIONS

QUESTION ONE (COMPULSORY) – 30 MARKS

- (a) (i) Explain the significance of enzymatic browning in tea production. [3 marks]
- (ii) Define the hurdle technology and its significance. [2 marks]
- (b) (i) Distinguish between caramelisation and the Maillard reaction as used in food processing and their significance. [4 marks]
- (ii) Explain the reason for the characteristic porosity of breads and cakes. [1 mark]
- (c) (i) List the three types of radiations that may be used for food preservation. Explain their differences and use in the food industry. [3 marks]
- (ii) Explain the health concern associated with the use of Bisphenol A (BPA) in plastic food packaging. [2 marks]
- (d) Describe food additives and their importance. [5 marks]
- (e) Giving examples, describe the major nutritional value of foods from plant origin. [5 marks]
- (f) (i) Explain why spoilage of fish occurs so quickly. [3 marks]
- (ii) Distinguish between putridity and rancidity as applied in food processing. [2 marks]

QUESTION TWO (20 MARKS)

- (a) Describe four major bacteria which cause food borne illness and the associated symptoms and prevention measures. [12 marks]
- (b) Define food poisoning and explain what causes ciguatera poisoning. [4 marks]
- (c) Explain the legislative methods used to control contamination in the food industry. [4 marks]

QUESTIONTHREE (20 MARKS)

- (a) Discuss the methods of food preservation. [10 marks]
- (b) List the major cause of food spoilage. [3 marks]
- (c) Define blanching and explain its significance in food processing. [3 marks]
- (d) Describe the key considerations one would consider when choosing a packaging material. [4 marks]

QUESTION FOOUR (20 MARKS)

- (a) Explain the factors affecting meat quality. [8 marks]
 - (b) Describe post-mortem changes which occurs in meat. [6 marks]
 - (c) Describe any 6 forms of processed milk. [6 marks]
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