



**UNIVERSITY EXAMINATIONS**

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

**BIOC 315: BIOCHEMISTRY OF FOOD PROCESSING**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: THURSDAY 08/07/2021**

**8.30 A.M – 10.30 A.M**

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**INSTRUCTIONS:**

**Answer question one and any other two questions**

**QUESTION 1 (COMPULSORY) (30 MARKS)**

- a). (i) Define humectancy and its significance in food processing. (3 marks)  
(ii) Describe the link between connective tissue and meat tenderness (3 marks)
- b) Describe the cause of non- bacterial food contamination. (5 marks)
- c). Describe the interaction between food and food packaging materials. (5 marks)
- d) Define the following terms
- (i) Blanching. (1 marks)  
(ii). Hurdle technology. (1 mark)  
(iii). caramelization. (1 mark)  
(iv). Maillard reaction. (1 mark)
- e). Explain the effects of anti-nutritive components in food. (5 marks)
- f). Explain the importance of food additives. (5 marks)

**QUESTION 2 (20 MARKS)**

- a) Describe four major bacteria which cause food-borne illness and the associated symptoms and prevention measures (12 marks)
- b) Explain the health concerns associated with fibre in diet (4 marks)

- c) Despite their health concerns, give the rationale why plastic are still used as packaging material. (4 marks)

**QUESTION 3 (20 MARKS)**

- a) Describe in details the biochemical changes which occurs during milk processing and their significance. (10 Marks)  
b) Describe biochemical changes on meat after the animal is slaughtered. (6 marks)  
c) Describe the functional characteristics of eggs (4 marks)

**QUESTION 4 (20 MARKS)**

- a) Explain the effects of enzymes on food quality and their applications in food processing. (10 marks)  
b) Describe in details toxic constituents found in food and their effects. (10 marks)
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