

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY, BACHELOR OF SCIENCE IN FOOD SCIENCE AND MANAGEMENT.

**AFT 3200: FOOD CHEMISTRY 1**

**DATE: DECEMBER, 2016 TIME: 2 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. List two common types of enzymatic browning. (2 marks)
2. Discuss hyorophorbicity of amino acids. (2 marks)
3. Explain the role of lipid oxidation in food spoilage. (4 marks)
4. Explain the formation of hemiacetals molecules. (3 marks)
5. State the difference between hydrophilic and hydrophorbic amino acids. (2 marks)
6. Discuss the principle behind colorimetric determination of amino acids. (4 marks)
7. List two fat soluble and two water soluble vitamins. (4 marks)
8. Describe degradation and stalling. (3 marks)
9. Draw the general structure of an amino acid. (2 marks)
10. Describe the helical structure of a protein. (4 marks)

**QUESTION TWO (20 MARKS)**

1. Discuss reduction of carbonyl groups. (10 marks)
2. Discuss non enzymatic browning. (10 marks)

**QUESTION THREE (20 MARKS)**

1. Describe a pro oxidant. (4 marks)
2. Discuss the following methods of measurement of lipid oxidation
3. Peroxide value. (6 marks)
4. Thiobarbituric acid test.(TBA). (6 marks)
5. Total volatile carbonyl compounds. (4 marks)

**QUESTION FOUR (20 MARKS)**

1. Define ampholytes and explain the reasons for an amino acid existing in the. Zwitterions form. (10 marks)
2. Discuss lactose intolerance. (10 marks)