**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya.**

 **Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2016/2017**

FOURTH YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF FOOD SCIENCE AND TECHNOLOGY, BACHELOR OF FOOD SCIENCE AND NUTRITION

**AFT 3428: FOOD TOXICOLOGY AND LEGISLATION**

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

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

**QUESTION ONE (30 MARKS)**

1. ‘*All substances are poisons; there is none which is not a poison. The right dose differentiates a poison and a remedy’*. Using examples, explain this statement. (4 marks)
2. Briefly explain the following terms. (6 marks)
3. Hormesis
4. Adulteration
5. Anaphylaxis
6. Differentiate between the following terms. (4 marks)
7. Dose and dosage
8. Synergism and antagonism
9. Phase I and Phase II biotransformation reactions
10. LD50 and ED50
11. Explain how a food allergy may be detected. (4 marks)
12. List three government regulatory and management authorities responsible for food safety. (3 marks)
13. Outline three functions of food additives. (3 marks)
14. List six provisions in the Public Health Act Cap 242. (6 marks)

**QUESTION TWO (20 MARKS)**

1. With the aid of a diagram, explain the meaning of NOAEL and describe its importance in food toxicology. (7 marks)
2. There are several different types of toxic response which may be caused by chemicals. Describe them and indicate how they can be detected. (13 marks)

**QUESTION THREE (20 MARKS)**

1. Briefly explain five ways in which foreign substances pass through biological membranes. (10 marks)
2. ‘Ethanol is a toxic drug widely available to the general public’. Discuss this statement. (10 marks)

**QUESTION FOUR (20 MARKS)**

1. Briefly explain five factors that may influence biotransformation of toxicants. (10 marks)
2. Explain the benefits and risks associated with the use of genetically modified organisms (GMOs). (10 marks)