

**CHUKA**



**UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**FOURTH YEAR EXAMINATION FOR THE AWARD OF  
DEGREE OF BACHELOR OF SCIENCE**

**FOST 413: FOOD TOXICOLOGY**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE : WEDNESDAY 22 /09/ 2021**

**11.30 AM – 1.30 PM**

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**INSTRUCTIONS TO CANDIDATES:**

- Answer Question One and any other Two Questions.
- DO NOT WRITE ANYTHING on the question paper.

**SECTION A: ANSWER ALL QUESTIONS (30 MARKS)**

1. Briefly explain the following terms as they are used in food toxicology. [8 Marks]
  - (a) Codosing
  - (b) Dose-Response relationship
  - (c) Hormesis
  - (d) LD<sub>50</sub> and TD<sub>50</sub>
2. Differentiate between organ and systemic toxicity. [8 Marks]
3. Discuss the three phases of toxicological effects associated with a specific toxin of your choice. [6 Marks]
4. Discuss how good manufacturing practices can be used to reduce contamination of food with toxins. [8 Marks]

**SECTION B : ANSWER ANY TWO QUESTIONS (40 MARKS)**

5. (a) Discuss the link between environmental pollution and food safety giving specific examples of foods that are prone to such contamination. [10

Marks]

(b) Discuss the strategies you would put in place to reduce the presence of toxic agricultural chemical residues in food products in Kenya. [10

Marks]

6. (a) Giving examples, explain how the following practices may contaminate food with specific toxic substances:

(i) Heat processing [5 Marks]

(ii) Food storage [5 Marks]

(b) Discuss how HACCP can be applied as a control measure for the reduction of or elimination of toxins from a specific food of your choice. [10

Marks]

7. (a) Discuss the occurrence in foods and toxicity of each one of the following.

[10 Marks]

(i) Ciguatera

(ii) Mycotoxins

(iii) Cyanogenic Glycosides

(vi) Tetrodotoxin

(b) Discuss risk assessment in the context of toxicological safety of foods.[10 Marks]

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