KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2009/2010

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (ENVIRONMENTAL HEALTH)

HEH 403: ENVIRONMENTAL TOXICITY

DATE: Tuesday 22nd December, 2009 **TIME: 2.00 p.m – 4.00 p.m**

INSTRUCTIONS: Answer all questions in section ONE. In section TWO, answer question ONE and any other TWO.

SECTION ONE

1 a) Define environmental toxicology. Give an example of a study that would be relevant to this field. [3 marks]

b) Define the following terms

i) Teratogen [1 mark]

ii) Exenobiotic [1 mark]

iii) Mutagen [1 mark]

iv) Dose [1 mark]

v) Threshold [1 mark]

2 a) State what is meant by the terms LD_{50} and LC_{50}. [2 marks]

b) Explain the difference between toxins and toxicants. Give an example for each. [4 marks]

c) Explain three (3) factors that determine the toxicity of a chemical. [6 marks]

SECTION TWO

1a) Giving examples, describe the following effects of toxicant mixtures. [8 marks]

i) Synergism

ii) Antagonism

iii) Potentiation

iv) Coalitive interaction

b) Describe the steps that constitute risk assessment. [12marks]

2a) Describe the term latency as used in toxicology. [2 marks]

b) Explain how latency challenges environmental toxicologists when trying to detect hazards associated with exposures. [5 marks]

c) Describe the process of toxic kinetics. [8 marks]

3. Write short notes regarding Cadmium and Mercury environmental toxicants under the following subtitles. [15 marks]

a) Possible sources of exposure

b) Modes of entry into the body

c) Two major health effects

d) Name of associated disease.

4. Discuss the three major methods used in testing toxicity of chemicals and drugs before they are marketed for both domestic and industrial use. [15 marks]

5a) Describe phases of cancer development after exposure to carcinogenic substance. [10marks]

b) What is typical for each of these phases and for the carcinogenic chemicals acting in these phases. [5marks]