

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY  
FACULTY OF APPLIED SCIENCES  
DEPARTMENT OF ENVIRONMENTAL SCIENCE AND HEALTH  
BACHELOR OF ENVIRONMENTAL SCIENCE HONOURS DEGREE  
PUBLIC HEALTH  
FINAL EXAMINATION**

**ENVIRONMENTAL TOXICOLOGY: EPH 2009**

November 2011

Time Allowed: 3 hours

Total marks:100

**INSTRUCTIONS:**

Answer any **four** questions. Each question carries **25 marks**

**Question 1**

- a) Outline and discuss the primary steps included in making a risk assessment. **(13 marks)**
- b) Describe transmembrane transportation of xenobiotics and factors affecting their movement. **(12 marks)**

**Question 2**

- a) Describe the main factors affecting the toxicity of a chemical. **(15 marks)**
  
- b) Discuss the phases associated with the disposition of toxic compounds. **(10 marks)**

**Question 3**

- a) Describe the role of xenobiotic metabolizing enzymes in the biotransformation of the herbicide paraquat. **(15 marks)**
  
- b) Discuss the main professional categories of Toxicology . **(10 marks)**

**Question 4**

- a) Draw the structure of DDT and discuss its uses and effects on the environment. **(15 marks)**
- b) Identify the potential effluent producing points in beverage producing industry and describe the nature of the effluent produced from such an industry. **(10 marks)**

**Question 5**

- a) Describe the various tests done during product development to ensure safety of new products. **(13 marks)**
- b) Outline sources of endocrine disruptors that reach aquatic reservoirs and describe how they can be detected. **(12 marks)**

**Question 6**

a) Draw the general structure of an organophosphate and describe how this group of chemicals exert their toxicity in living organisms.

**(15 marks)**

b) Briefly describe the following;

i) LD50 (4 marks)

ii) LOAEL (3 marks)

iii) NOEL (3 marks)

**(End of question paper)**