UNIVERSITY OF SWAZILAND
Faculty of Health Sciences

DEGREE IN ENVIRONMENTAL HEALTH

FINAL EXAMINATION PAPER 2007/2008

TITLE OF PAPER	:	**INTRODUCTION TO ENVIRONMENTAL TOXICOLOGY I**
COURSE CODE	:	**EHS 557/560**
DURATION	:	**2 HOURS**
MARKS	:	**100**
INSTRUCTIONS	:	**READ THE QUESTIONS & INSTRUCTIONS CAREFULLY**
	:	**ANSWER ANY FOUR QUESTIONS**
	:	**EACH QUESTION CARRIES 25 MARKS**
	:	**WRITE NEATLY & CLEARLY**
	:	**NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM**
	:	**BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER**

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

TOXICOLOGY EXAMINATION - 2007

Question 1.

a) What are the basic assumptions of a dose-response curve or measurement) **(5 marks)**

b) Explain the "first-pass" effect with a diagram and why this form of elimination results in a low level of expression of toxicity from a xenobiotic. **(10 marks)**

d) In the fourth stage of the mechanism of toxicity there is a decision the cell has to make about repair or dysrepair. What are the various levels of repair in the organism that could take place after damage or toxicity occurs? **(10 marks).**

Question 2.

Answer the following in a concise and precise answer.

a) Describe the difference between necrosis and apoptosis. Relate to level of toxic injury **(10 marks)**

b) What is meant by genetic polymorphism? **(5 marks)**

c) What is meant by **DISPOSITION** of a xenobiotic? **(5 marks)**

What are the major functions of Type I and Type II cells of the respiratory system? **(5 marks.s)**

(Total = 25 marks)

Question 3.

1. **Define the following terms** **(2marks each = 20 marks)**

    1. Toxicant
    2. Toxin
    3. Safety of the chemical
    4. Allergic reaction
    5. Potentiation
    6. Therapeutic Index
    7. Margin of Safety
    8. Effective Dose
    9. LD_{50}
    10. Threshold for a toxic subsistence

2. What is the difference between risk assessment, risk management and risk characterization **(5 marks)**

Question 4

a) What is meant by the blood brain barrier **(10 marks)**

b) List the four stages of toxicity and one or two lines of description of each **(8 marks)**

c) What is meant by genetic polymorphism **(2 marks)**

d) What are the five (5) Phase I major biotransformation reactions **(5 marks)**

Question 5.

Why are children particularly vulnerable to toxicants like chemicals? **(25 marks)**