



UNIVERSITY OF SWAZILAND
Faculty of Health Science

Department of Environmental Health
Sciences

Main Examination 2010

Title of paper: INTRODUCTION TO TOXICOLOGY

Course code: EHS 561

Time allowed: 2 hours

Marks allocation: 100 Marks

Instructions:

- 1) Read the questions and Instructions carefully
- 2) Answer **Four (4)** questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly
- 5) Begin each question in a separate sheet of paper

This paper is not to be opened until the invigilator has granted
permission

QUESTION 1

- a) Write short notes on the vulnerability of the blood testis barrier to toxicological insult [5]
- b) Define the following terms (6)
- Oncosis
 - Authophagy
 - Pyroptosis
- c) Write the best meaning of these terms as they relate to hepatotoxicity, only write the number and the missing meaning [7]

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|---------------------|--|
| 1. Hypersensitivity | |
| 2. | Chronic fibrosis, often due to alcohol |
| 3. Hepatic cancer | |
| 4. | Backup of bile salts into liver cells |
| 5. Hepatic necrosis | |
| 6. | Inflammation of the liver |
| 7. Steatosis | |

- c) Contrast between these 2 terms as they relate to toxicity, hormesis and Mithridatism. (7)

QUESTION 2

- a) How does the body rid itself of metabolites? (6)
- b) Like many systems of the body, the hepatic system is vulnerable due to toxicants more than the other systems of the body. Discuss this submission (10)
- d) What are biomarkers used for (4)
- e) What do biomarkers of health effect signal (5)

QUESTION 3

- a) Biomarkers are not just picked at random if one wants to carry out an investigation, name the 6 criteria that must be considered in choosing them (6)**
- b) Different media is used in determining different matters of interest, what is the 5 media used in biomarkers (5)**
- c) Biological markers are said to be biologically relevant, what is the connotation of this statement? (5)**
- d) Reproductive toxic effects may manifest in different forms in humans. Debate this statement and support it with relevant examples (7)**
- e) Define ocular toxicity (2)**

QUESTION 4

- a) Schematically show the movement of a xenobiotic from absorption to elimination. DO NOT DISCUSS! [13]**
- b) You have been asked by the Molepolole Town Board to make a presentation on DDT as an environmental health toxicant, briefly discuss the major points to cover and their implication to the biota [12]**

QUESTION 5

- a) Hepatotoxicity is toxicity to 3 certain organs of the body, which are they (3)**
- b) Define the different types of neurotoxicity (4)**
- c) Name 4 carcinogenic chemicals (4)**
- d) List the 3 steps in pathogenesis of neoplasma and 3 steps in initiation (6)**
- e) What features of the CNS make it to be more vulnerable to toxicant insults? (7)**
- f) DDT normally shows pathological changes in 2 distinct parts in the human body, which are they? (2)**