



**RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES**

**B.Sc. (Honours) Degree in Chemistry  
Fourth Year Semester II Examination – February /March 2019**

**CHE 4213 – CHEMICAL TOXICOLOGY**

Answer all questions.

**Time: Two (02) hours**

1.
  - a) List the factors that determine the dose. **(20 marks)**
  - b) “Right dose differentiates a poison from a remedy”. Explain using suitable examples. **(20 marks)**
  - c) Illustrate what is meant by following terms:
    - i. Threshold dose
    - ii. Antagonism
    - iii. Coalitive effect
    - iv. Additive effect **(60 marks)**
  
2.
  - a) List the factors that influence the biliary excretion of toxic compounds. **(20 marks)**
  - b) What is the difference between the drugs thiopental and pentobarbital and how would it affect their absorption and distribution. **(40 marks)**
  - c) From which site would you expect a weak acid to be absorbed.
    - i. Mouth
    - ii. Small intestine
    - iii. Stomach

Explain using Henderson- Hasselbalch equation. **(40 marks)**

3. a) Describe the process of Enterohepatic recirculation. (30 marks)
- b) Illustrate the biotransformation of benzene using appropriate reactions and relative properties of each compound. (30 marks)
- c) Discuss the implications of binding of toxic compound to plasma protein. (40 marks)
4. a) List major categories of plant toxins. (20 marks)
- b) Explain the toxicity of apple seeds giving relevant toxins. (20 marks)
- c) Discuss the toxic effects of snake venom. (30 marks)
- d) How does the presence of food affect the absorption of toxic compound into the body? (30 marks)

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