



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

**BSc Honours in Chemistry  
Fourth Year Semester I Examination – July / August 2023**

**CHE 4213 – CHEMICAL TOXICOLOGY**

**Time: Two (02) hours**

Answer all questions

Use of a non-programmable calculator is permitted.

1. a) State assumptions of dose response relationship. (20 marks)
- b) List the factors that determine the dose. (20 marks)
- c) "Right dose differentiates a poison from a remedy". Explain using suitable examples. (20 marks)
- d) Illustrate what is meant by following terms.
  - i. Threshold dose
  - ii. Antagonism
  - iii. Synergism
  - iv. Therapeutic index

(40 marks)
2. a) List the factors affect the disposition. (20 marks)
- b) Briefly describe phase I and Phase II metabolism using a suitable example. (40 marks)
- c) Where would you expect the absorption of Aspirin occurs in the gastrointestinal tract. Explain using suitable calculations.

pH of gastric juice	2	pH of plasma	7.4
pH of intestinal juice	6	pKa of Aspirin	3.5

(40 marks)

- a) Write a short note on Enterohepatic recirculation. (40 marks)
- c) Discuss the implications of binding of Parathion, a pesticide, to plasma protein. (60 marks)
4. a) What is genetic toxicology. Discuss its applications. (50 marks)
- b) Briefly describe how the heavy metals affect the biochemical/ cellular process. (50 marks)

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