



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

**Bachelor of Science honors in Microbiology/ Applied Biology**  
**Third year – Semester II Examination – January/February 2023**

**BIO 3205–ECOTOXICOLOGY**

**Time: Two (02) hours**

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**Answer All questions.**

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1. Design a lab experiment to assess the acute and chronic toxicity of a selected agricultural pesticide on tadpoles of the Asian common toad (*Bufo melanostictus*). Limit your answer to mortality and behavioral changes in acute toxicity and growth, histopathological and hematological alteration in chronic toxicity. **(100 marks)**
2. a) List the characteristic features of an organism which can be used as a bioindicator/biomonitoring tool. **(30 marks)**  
b) “Bird feathers can be used as a biomonitoring tool for assessing the Mercury (Hg) level in aquatic ecosystems” Discuss this statement using an appropriate species of bird as an example. **(70 marks)**
3. a) Discuss the metabolic pathways of xenobiotics in the mammal. **(50 marks)**  
b) Write a brief account on radioactive decay, half-lives and biochemistry. **(50 marks)**
4. a) “Acetylcholinesterase inhibitors (AChEIs) can be used as biomarkers.” Briefly explain the above statement. **(30 marks)**  
b) Discuss the toxicity effects of dichlorodiphenyltrichloroethane (DDT) on populations of birds of prey. **(30 marks)**  
c) State the importance of the zebrafish as a model in ecotoxicological research. **(40 marks)**

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