



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

**B.Sc. (General) Degree in Applied Sciences
Third year – Semester II Examination - February/March 2019**

ZOO 3203 – ECONOMIC ENTOMOLOGY

Time: Two (02) hours

Answer Four (04) questions.

1. a) What is meant by exponential growth of an insect population and how is this concept related to the recent outbreak of fall army worm (*Spodoptera frugiperda*) in Sri Lanka.
(19 marks)
- b) Outline the impact of temperature on insect growth and survival.
(06 marks)
2. a) Contrast the mode of action of organophosphate and neonicotinoid insecticides.
(08 marks)
- b) How does one experimentally determine the LD50 value of an insecticide for a rat?
(12 marks)
- c) Specify the signal words given for categories 1a, 1b, 11, 111 and U of the WHO classification of pesticides by hazard level.
(05 marks)
3. a) Distinguish between uniform, random and clumped distributions in insect populations
(06 marks)
- b) Define the following terms used in Integrated Pest Management strategies;
 - i. Economic injury level
 - ii. Economic threshold Level
 - iii. Economic Damage
 - iv. Damage Boundary
(19 marks)

4. a) Describe the role of juvenile hormone and ecdysone in insect growth regulating insecticides. **(19 marks)**
- b) Describe the first major success with biological control of insect pests. **(06marks)**
5. a) Define integrated pest management in your own words. **(03 marks)**
- b) Name the two insect pests of rice for which resistant varieties have been developed in Sri Lanka. **(06 marks)**
- c) Mention the various cultural practices that a farmer could employ for insect control. **(14 marks)**

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