



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**FOURTH YEAR FIRST SEMESTER EXAMINATIONS FOR
THE DEGREE OF BACHELOR OF SCIENCE AND BACHELOR
OF EDUCATION SCIENCE WITH INFORMATION
TECHNOLOGY**

MAIN CAMPUS

SZL 405: AGRICULTURAL ENTOMOLOGY

Date: 30th November, 2016

Time: 8.30 - 11.30 am

INSTRUCTIONS:

- Answer ALL questions in SECTION A and any TWO in SECTION B.



SZL 405: AGRICULTURAL ENTOMOLOGY

SECTION A (40 MARKS)

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A. ANSWER ANY TWO QUESTIONS IN SECTION B.

TIME: 2 Hours

ANSWER ALL QUESTIONS IN THIS SECTION (5 MARKS EACH)

1. Based on the following hypothetical life table, calculate the replacement rate (R) of the population and make a conclusion.

Stage	Number	Cause of death	Number of dead	% Mortality
egg	300	Predation	100	33
Larva	200	Parasitism	150	75
Pupa	50	Heat	40	80
Adult	10			
Sex Ratio = 3 females:2 male				

2. Explain the general detection method for root borers.
3. Give an example of successful biological control and differentiate between a biological control agent and a bio pesticide.
4. Explain the legal and regulatory tactics for pest management.
5. Briefly discuss how insect decomposers are valuable for agriculture.
6. Outline advantages of physical and mechanical control methods.

7. Briefly explain the r and k-factors of population growth.

8. Four insecticide products are listed in the following table. Assume all four compounds are equally safe and equally effective at the recommended rates. Identify the most economical one. (There are 2 pts/qt and 4 qts/gal)

Compound	Formulation	Application Rate	Unit Cost
AA	15 WP	6 lbs/acre	300.00/10 lbs.
BB	25 WP	4 lbs/acre	1500.00/25 lbs
CC	4 EC	1 pt/acre	1200.00/gal
DD	3 EC	1 qt/acre	800.00/gal

SECTION B (30 MARKS)

ANSWER ANY TWO QUESTIONS FROM THIS SECTION (15 MARKS EACH)

9. Describe life cycle, ecology and management of fruit fly *Bactrocera invadens*.

10. Explain integrated pest management and discuss why it is considered as an effective and sustainable method.

11. Describe the classification, lifecycle, ecology and management of *Busseola fusca*.

12. Explain how chemical control of behaviour, reproduction and development can be used to manage insect pests of plants.