

FIJI NATIONAL UNIVERSITY

COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY

School of Agricultural Sciences & Forestry

Department of Entomology & Plant Pathology

Unclassified Programme: Semester 1 Examination, 2018

CPP 311: Climate Change & Crop Protection

Allocated Time: 3 hours and 10 Minutes (Reading Time) Allocated Marks: 100

Instructions:

1. This paper is consist of **five** sections. All Sections are **compulsory**. Note the choices in section E.
2. Ensure to write your names and ID Number on each sheet of paper of the answer sheet.
3. No written or printed materials are allowed into the examination room.
4. No mobile phone and other electronic device is allowed into the examination room.
5. You need to provide your own writing materials for the examination.
6. Write all your answers in the answers sheet provided.

The table below shows the breakdown of the assessment paper and allocated time.

Section	Section Description	Suggested Time	Allocated Marks
A	Multiple Choices	30 Minutes	20
B	Matching/Fill in the Blank	30 Minutes	20
C	True or False	10 Minutes	10
D	Short Answer Questions	50 Minutes	30
E	Essay Questions	60 Minutes	20

Section A: Multiple Choices

(20 Marks)

1. *Persicaria perfoliata* is a common _____ in Fiji.
 - a. Pest
 - b. Weed
 - c. Disease
 - d. Polluter

2. _____ refers to the re-planting of forest trees after harvesting:
 - a. Afforestation
 - b. Deforestation
 - c. Silviculture
 - d. Re-afforestation

3. One of the common impact of climate change experienced by man today is - :
 - a. Lack of Oxygen
 - b. Increase environmental temperature
 - c. Increase pollution
 - d. Poor food supply

4. A true insect should have.
 - a. Six pairs of legs
 - b. A pair of wings
 - c. A compound eye
 - d. Three body parts

5. A direct impact of climate change on the population of insect include:
 - a. Improper life-cycle
 - b. Total disruption to insect food chain
 - c. Extinction of many insect species
 - d. Decrease in insect population

6. Weed can be defined as?
 - a. A plant growing where it is not desirable
 - b. A plant that grows on waterways
 - c. A plant with high dispersal rate
 - d. A plant that control soil erosion

7. One of the common feature of a weed is?
 - a. Low seed production
 - b. Invasiveness
 - c. Slow growth rate
 - d. Palatable to stock

8. The scientific name of corn earworm is :
- a. *Helicoverpa zea*
 - b. *Ostrinia nubilalis*
 - c. *Icerya purchasi*
 - d. *Helicoverpa amigera*
9. The inoculation of *baculovirus* into rhinoceros beetle to kill them is an example of -:
- a. Cultural Control
 - b. Physical Control
 - c. Biological Control
 - d. Chemical Control
10. A control measure where chemical is designed to kill weeds is known as-:
- a. Fungicide
 - b. Nematicide
 - c. Microbiocide
 - d. Herbicide
11. A modern pesticide should have the following constituents -:
- a. Active ingredient, surfactant, synergist and carrier
 - b. Surfactant, Carrier and enhancer
 - c. Active ingredient, Carrier, enhancer and surfactant
 - d. Active Ingredient, synergist and enhancer
12. A common taro pest which of significant importance to Fiji is-:
- a. Cluster caterpillar
 - b. Taro Beetle
 - c. Taro stalk borer
 - d. Stick Insect
13. The role of biosecurity in Fiji is to -:
- a. Safeguard agricultural trade between Fiji and the world
 - b. Safeguard Fiji's flora and fauna from exotic pests and diseases.
 - c. Safeguard Fiji's unique environment

- d. Produce more agricultural crops for export market
14. An example of an exotic pest to Fiji is -:
- a. Coconut Stick Insect
 - b. Crested Iguana
 - c. Diamond back moth
 - d. American Iguana
15. A practice whereby control measures was applied to remove or minimize the disease infestation in an affected area is known as -:
- a. Eradication
 - b. Protection
 - c. Exclusion
 - d. Resistance
16. IPM is a control measure which -:
- a. Involves the control of pests through usage of chemicals
 - b. Integration of the best control measures to minimize pest population
 - c. Manipulation of the environment to eradicate pest population
 - d. Uses different techniques to improve productivity of crops
17. Which of the following is an example of a beneficial insect?
- a. Penta bug
 - b. Diamond back moth
 - c. Aphid
 - d. Lacewing
18. Crop rotation is an example of _____.
- a. Mechanical control
 - b. Biological control
 - c. Cultural Control
 - d. Physical Control
19. Eutrophication is a common problem caused by:
- a. Excessive usage of fertilizers
 - b. Poor weed control
 - c. Lack of nutrients in waterways
 - d. Soil Erosion
20. Which of the following organism is under the order Blattodea -:

Yellow fever mosquito	
Diamond back moth	
Rhinoceros beetle	
Dragon Fly	
Lacewing	

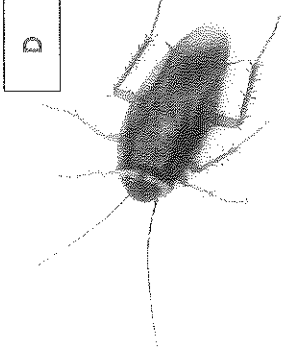
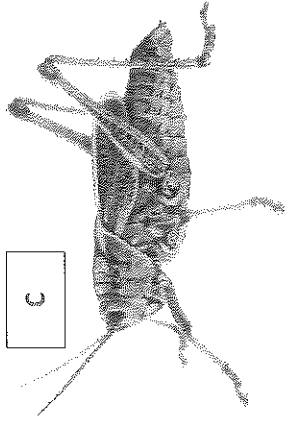
SECTION C: True or False. Beside each question, write 'T' for True or 'F' for false if you think that the statement is false.

1. Insect generation time will be shortened due to climate change. _____
2. Japanese were the first to use natural enemies to control insect pests. _____
3. Pathogens are disease causing pests. _____
4. Exotic pests are those that have been introduced from other countries to Fiji. _____
5. The purpose of disinfectants is to kill bacteria or virus. _____.
6. Biosecurity's role is to safeguard the country's trade from other competitors.
7. Weeds can be successful in any new area due to their potential for wide distribution.
8. Ineffective dispersal refers to pathogen when they do not get any medium for its survival
_____.
9. Exclusion is one of the method used to control crop disease infestation.
10. Paragrass is an example of a noxious weed. _____.

SECTION D**Short Answer Questions****(30 Marks)**

1. Define the following terms:
 - a. Climate Change.
 - b. Pest
 - c. Integrated Pest Management
 - d. Weed
 - f. Pesticide.
 - g. Parasitoid(6 marks)
2. Differentiate between the following terms.
 - a. Acute Toxicity and Chronic toxicity.
 - b. Complete metamorphosis and incomplete metamorphosis.
 - c. Inoculation and Inundation
 - d. Ectoparasite and Endoparasite(8 marks)
3. Briefly explain the mode of action for systemic and contact pesticide. (2 marks)
4. List four major classes of Arthropods. (2 marks)
5. Briefly explain the three features of weeds which make them successful in their establishment on any new area. (3 marks)
6. Briefly explain how pathogens are dispersed through active dispersal. (2 marks)
7. Based on the diagrams below, state the order each given insect belongs to. (4 marks)





8. State 3 activities that can be carried out at Border and Post boarder by the Biosecurity Authority of Fiji. (3 marks)

SECTION E: Essay Questions

(20 Marks)

There are three questions given, you are to select **two** essays only from the options given. Each essay is worth 10 marks each.

1. Discuss the impact of climate change on the agriculture industry in Fiji. You are to include examples to support your arguments and to show that you have understood the impact of climate change.

Or
2. Explain what do you understand of the term weed with given examples and discuss the impact of weeds on agricultural production in Fiji.

Or
3. Briefly explain the impact of using chemicals on our farms nowadays and the role of integrated pest management in balancing the usage of chemicals in our farms.

THE END