

**COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY**

**SCHOOL OF AGRICULTURE AND FORESTRY**

**Bachelor of Science in Agriculture: Trimester 2 Examination, 2019**

**PPA 701: Integrated Disease Management**

**Allocated Time: 3 hours and 10 Minutes (Reading Time)**

**Allocated Marks: 100**

**Instructions:**

1. This paper is consist of **four** sections. All Sections are **compulsory**. Take note of the Option given in Section D.
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 Answer sheet provided.

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

<b>Section</b>	<b>Section Description</b>	<b>Suggested Time</b>	<b>Allocated Marks</b>
A	Multiple Choices	15 Minutes	15
B	Fill in the Blanks/True or False	15 Minutes	15
C	Short Answer Questions	50 Minutes	30
D	Essay Questions	100 minutes	40

**Section A: Multiple Choices**

**(10 Marks)**

1. Guttation refers to the -:
  - a. Exudation of water from plant leaf margins
  - b. Loss of water from the stomata
  - c. Release of water from roots
  - d. Excess water from leaves
  
2. Which of the following is a feature of blight?
  - a. Rapid death of plant growth structures
  - b. Rapid and extensive death of plant foliage
  - c. Extensive death of plant roots
  - d. Extensive death of plant tubers
  
3. Which of the following can be classified as vertical resistance in plants?
  - a. Monogenic
  - b. Polygenic
  - c. Field Resistance
  - d. Reduced disease
  
4. A control measure which particularly focus on the prevention of the introduction of disease into a particular area is known as -:
  - a. Eradication
  - b. Biological
  - c. Therapy
  - d. Exclusion

5. A common pathogen that causes black Sigatoka disease is known as-:
- Perkinsiella saccharicida*
  - Mycosphaerella musicola*
  - Pseudocercospora musicola*
  - Mycosphaerella fijiensis*.
6. A common disease that affect seedlings in Fiji due to temperature disparity is known as-:
- Wilting
  - Dwarfing
  - Damping Off
  - Dieback
7. The introduction of Taro leaf Blight into Samoa in 1993 is the result of?
- Poor Policing
  - Plant Breeding
  - Poor Surveillance measures
  - Poor management practices
8. A common fungi species that has been commonly used as bio control agent is known as -:
- Trichoderma spp.*
  - Pseudomonas spp.*
  - Xanthomonas spp*
  - Eruwinia spp.*
9. Epiphytotic refers to the -:
- Thew study of disease increase in population
  - Increase in disease population over time
  - The disease increase in a plant population
  - The spread of disease in a particular area

10. An example of an exotic disease in Fiji -:

- a. Anthracnose
- b. Fiji Disease
- c. Black Sigatoka Disease
- d. Taro Leaf Blight

11. Which of the following is an example of a polycyclic pathogen?

- a. Fusarium wilt
- b. Downey mildew
- c. Clubroot
- d. Corn Smut

12. Antibiosis is a condition where -:

- a. One or more metabolites excreted by organisms have harmful effects on other organisms
- b. When metabolites excreted by other organisms benefits other organisms
- c. The survival of one organism affect the other through competition
- d. When both organisms depends on each other for survival.

13. A tolerant plant refers to a -:

- a. Crop that can withstand an attack by a pathogen
- b. Crop that can live with disease or infection
- c. A crop that would not be attack by a pathogen
- d. A crop that easily attack by a pathogen.

14. Which of the following is an example of a disease sign?

- a. Mildew on leaves
- b. b. Rust on fruits
- c. Ooze on tomato stem
- d. d. Smut on corm


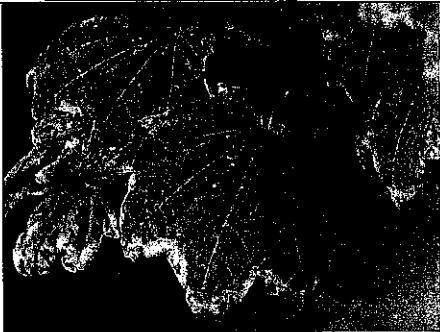

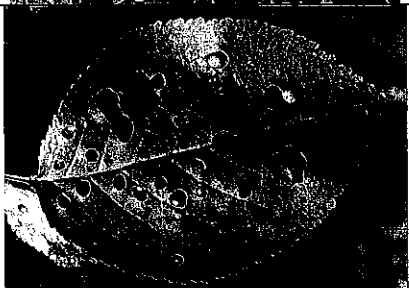
15. A practice which can reduce nematode population in soil is -:

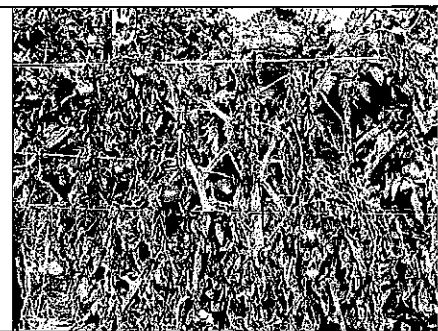



- a. Burning of soil surface
- b. Application of fungicides
- c. Proper drainage
- d. Solar sterilization of soil

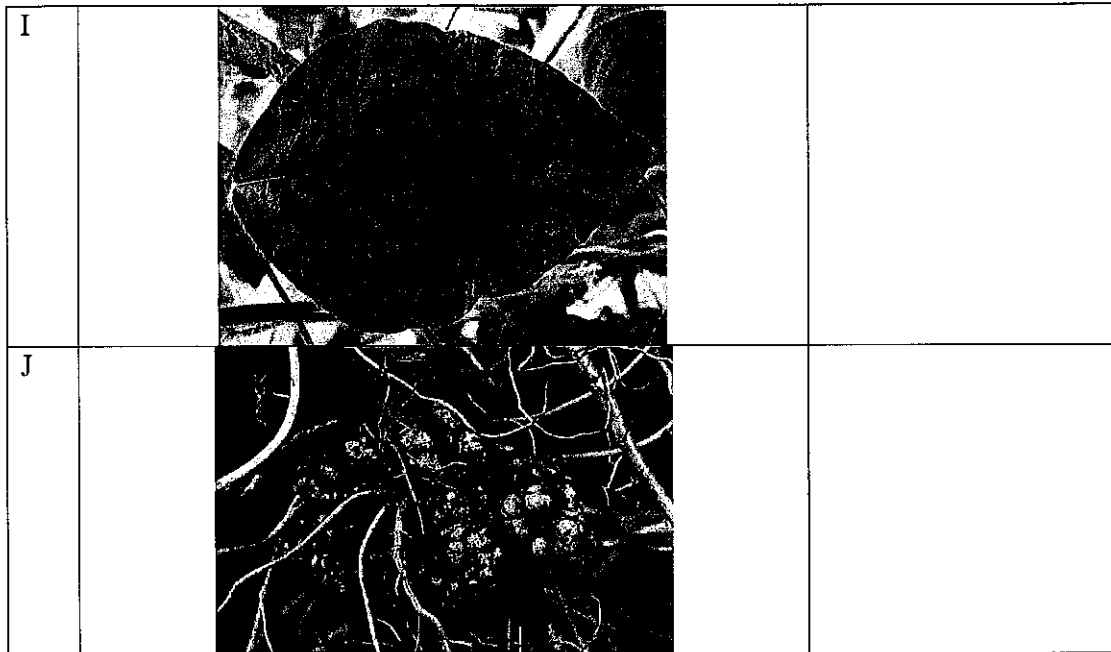
**Section B (I): Fill in the Blanks.**

**(10 Marks)**

**Name the correct symptom based on the diagram supplied.**

	<b>Diagram</b>	<b>Symptom Name</b>
A		
B		
C		
D		

E				
F				
G				
H				



**Part II: True or False**

**(5 marks)**

Write 'T' for True if the statement is **correct** or 'F' for false if the statement is **incorrect**.

1. The monitoring of transportation of plants and animal within the country is known as internal quarantine.
2. Planting stock that that is free of pathogen can be increased by tissue culture technique.
3. Endemic disease is a disease occurring periodically in a severe form.
4. Sporadic diseases usually occurs throughout the continent or sub-continent resulting in mass mortality.
5. Physiological wilt is an example of abiotic disease of crops.

**Section C: Short Answer Questions:**

**(30 Marks)**

1. Define the following terms in relation to plant disease (10 marks)

- a. Facultative parasite
- b. Facultative saprophyte
- c. Fasciation
- d. Etiolation
- e. Endemic disease
- f. Epidemic disease
- g. Rusetting
- h. Leak
- i. Hypertrophy
- j. Parthenogenesis

2. Differentiate between the following terms -:

- a. Immunity and Resistance (10 mark)
- b. Pandemic and Epidemic
- c. Monocyclic and Polycyclic epidemics
- d. Epidemiology and Epiphytotic
- e. Horizontal and vertical resistance

3. Briefly describe the following plant symptoms (5 marks)

- a. Canker
- b. Blight
- c. Fusarium wilt
- d. Anthracnose
- e. Mummification



4. With the aid of diagrams draw the following leaf symptoms. (4 marks)
- Leaf scorch
  - Leaf spot
  - Dieback
  - Leaf Streaks
5. State two important role of **sanitary and phytosanitary** measures in Fiji. (1 mark)

**Section D: Essay Writing:**

**(40 Marks)**

Select **ANY 4** questions from the 6 questions given and write an essay of 800-1000 words based on the topic selected. Ensure to support your arguments with examples. The essay should contain your recommendations after critically analyzing the subject matter. You are free to express yourself on what you believe should be done after critically analyzing the subject matter.

**Question 1:**

Climate change has been regarded as one of the biggest threat to Agriculture around the world. This changes has also affect disease epidemics. Briefly explain four ways in which plant disease epidemics has been influenced by climate change.

**Question 2:**

Briefly explain the 5 approaches of Integrated Disease Management and briefly explain how these approaches play a vital role in prevention and eradication of disease spread in Fiji and the Region.

**Question 3:**

As a Plant Pathologist, you were invited by a local farmer to visit his farm to give advice on what is happening to his crops which has wilted with signs of seedling collapse. Briefly explain, what are some of the important strategies you need to carry out in order to find the solution for the problem. Also, highlight your recommendation to the farmer.

**Question 4:**

Based on Signs and Symptoms of Diseases, briefly explain on the following Disease symptoms: Hypoplastic and Hyperplastic disease symptoms.

**Question 5:**

With reference to a particular Crop, discuss the differences between biotic and abiotic factors causing diseases and state some of the ways to minimize or prevent the spread of disease through biotic factors. You need to relate these control measures to the chosen crop of your choice.

**Question 6:**

Briefly explain the importance of bio control agents in disease control measures with given examples. Also indicate their disadvantages when implemented. You can use visual aids for clarity of your points.

**THE END**