

**COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY**

**SCHOOL OF AGRICULTURE SCIENCE**

**Trade Diploma in Agriculture: Year 1, Trimester 2 Examination, 2017**

**PPA 401: Plant Pathology**

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

**Allocated Marks: 60**

**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	10 Multiple Choices	15 Minutes	10
B	10 Matching	15 Minutes	10
C	10 Short Answer Questions	50 Minutes	20
D	2 Essay Questions	100 minutes	20

Section A: Multiple Choice Questions

(10 Marks)

1. The study of Plant Pathology focuses on -:
  - a. Pest infestation and their control
  - b. Plant Disease infestation and their control
  - c. Impact of climate change on plant growth
  - d. The introduction of plant diseases in Fiji.
  
2. Majority of plant diseases are caused by:
  - a. Bacteria
  - b. Virus
  - c. Fungus
  - d. Nematode
  
3. Koch Postulates is a technique used by plant pathologist to :
  - a. Detect the presence of Virus
  - b. Detect the presence of Nematodes
  - c. Detect the presence of Chlorophyll
  - d. Detect the presence of Fungus
  
4. When plants are unable to withstand pathogen attack and unfavorable conditions, they are said to be
  - a. Resistance
  - b. Susceptible
  - c. Virulent
  - d. Aggressive
  
5. Insect vectors plays a major role in the spread of -:
  - a. Fungal Diseases
  - b. Bacterial diseases
  - c. Viral Diseases
  - d. Nematode Diseases
  
6. Which of the following is not an example of an invasive species of pests in Fiji -:
  - a. Giant African Snail
  - b. American Iguana
  - c. Termites
  - d. Taro beetle
  
7. Which of the following is **not** part of integrated disease management practice?
  - a. Exclusion
  - b. Eradication
  - c. Avoidance
  - d. Biological
  
8. Many viral diseases are usually spread by

- a. Contaminated soils
- b. Rain splash
- c. Wind dispersal
- d. Insect vectors

9. Plant pathogens can be active in the presence of

- a. Host and environment
- b. Water and soil
- c. Environment and human
- d. Human and soil

10. Bacteria do reproduce through

- a. Binary Fusion
- b. Spores
- c. Binary Fission
- d. Replication

**SECTION B:**

**Matching**

**(10 marks)**

Match the following term in the table below to their correct description on the right.

1	Infection	Fungal growth structure	A
2	Stylet	Way of establishment of parasitic plants	B
3	<i>Phytophthora</i>	Replicate within host cell	C
4	Mycelium	Burrowing nematode	D
5	Mirco-biology	Suck sap from host by nematodes	E
6	Direct penetration	Causal agent for fungal disease	F
7	Obligate	Operation Kadivuka	G
8	Wind dispersal disease	Pathogen enters, grow, reproduce and spread in plant	H
9	<i>Radopholus</i>	Study of micro-organisms	I
10	Post Border	Fungal Structure	J

**SECTION C****Short Answer Questions****(20 Marks)**

1. Define the following terms: (4 marks)
  - a. Disease
  - b. Inoculum
  - c. Biosecurity
  - d. Avoidance
  
2. Differentiate between **Eradication** and **Exclusion** (2 marks)
  
3. List and explain 2 examples of a Protection strategy for Integrated Disease Management. (2 marks)
  
4. State 4 root functions that will be affected by nematode infestation. (2 marks)
  
5. List four common nematodes affecting crops in Fiji. (2 marks)
  
6. Briefly explain the roles of Biosecurity in Fiji. (1 mark)
  
7. Briefly explain 2 ways human contributes to the spread of diseases to new areas (2 marks)
  
8. Differentiate between **primary** and **secondary** infection. (2 marks)
  
9. With the aid of the diagram, draw the structure of the fungi penetrating the host plant cell. (2 marks)
  
10. Briefly explain Epiphytic phase. (1 mark)

**SECTION D: Essay Questions**

**(20 Marks)**

Select and **two topics** from the following topics and write an essay of 500-800 words.

1. Select **one invasive species** of pest and disease that is a worry for Biosecurity. Briefly explain the pest or disease and how biosecurity control the pest or disease in the country. **(10 marks)**

**or**

2. Explain the 5 stages of **Disease Development** and 5 ways pathogens can be **dispersed** from the infected plant to uninfected areas. **(10 marks)**

**or**

3. Base on Disease Distribution, explain how disease are distributed by the following distribution methods: **Random, Aggregation, Regular and Patch Distribution**. **(10 marks)**

**and**

4. Explain the **five principles** of Integrated Disease Management (IDM) that can be carried out to control the spread of diseases. **(10 marks)**

**The End**