

**COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY**

**Bachelor of Science in Agriculture Year 2: Trimester 1 Examination, 2017**

**PPA 501: Principles of 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. Streaming is a practice used in the laboratory for detection of -:
  - a. Virus
  - b. Bacteria
  - c. Fungus
  - d. Nematodes
  
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 able to withstand pathogen attack and unfavourable conditions, they are said to be
  - a. Resistance
  - b. Susceptible
  - c. Virulent
  - d. Aggressive
  
5. Nematodes have fluids between their alimentary canal and body wall to help in
  - a. Dehydration
  - b. Movement
  - c. Storing water
  - d. Fighting against disease
  
6. Plant enzymes plays a major role in
  - a. Digestion
  - b. Metabolism
  - c. Absorption
  - d. Transpiration

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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 usually act in the presence of

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

10. Nematodes do reproduce through

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

**SECTION B:**

**Matching**

**(10 marks)**

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

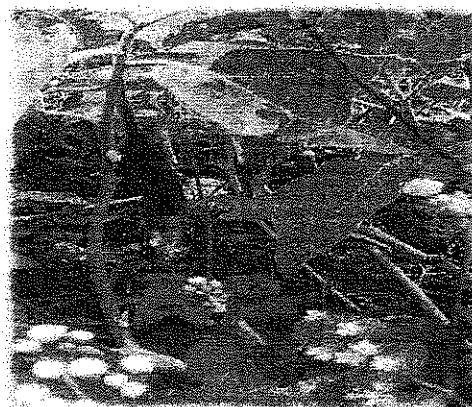
1	<i>Solanum melongena</i>	Fungal growth structure
2	Stylet	Way of establishment of parasitic plants
3	Avoidance	Rhizobium on legume plant nodules
4	Zoospore	Natural opening
5	Secondary inoculum	Suck sap from host by nematodes
6	Direct penetration	Development of epidemics
7	Symbiosis	Powdery mildew
8	Wind dispersal disease	Eggplant
9	Nematode	A method of Integrated Disease management
10	Hydathodes	Root rot

SECTION C

Short Answer Questions

(20 Marks)

1. Define the following terms: (4 marks)
  - a. Perception
  - b. Pathogenesis
  - c. Economic threshold level
  - d. Discontinuous infection chain
  
2. Differentiate between **Anemochory** and **Hydrochory**. (2 marks)
  
3. List and explain 4 examples of cultural control. (2 marks)
  
4. State 4 root functions that will be affected by nematode infestation. (2 marks)
  
5. Refer to the diagrams below to answer question 5. (2 marks)



Based on the diagrams above, state **the name of the disease** and its **causal agent**.

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6. Briefly explain the roles of Phanerogamic parasites. (1 mark)
  
  7. Explain why plant quarantine regulations plays a major role on disease infestation in the country with given examples. (2 marks)
  
  8. Briefly explain what is **gene cloning** and its importance. (2 marks)

9. With the aid of the diagram, draw the structure of the fungi penetrating the host plant cell. (2 marks)

10. State a common feature of basidiomycetes. (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. Describe the different steps of viral reproduction, how they establish themselves in a host plant and how they are successful in causing diseases infestations. **(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. Explain how the following factors contributes to disease infection: **Moisture, Temperature, stage of plant growth, disseminating agents and duration of spore release. (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**

