

**COLLEGE OF AGRICULTURE, FISHERIES & FORESTRY**

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

**PPA 503: Forest 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.

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

<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. Forest pathology is known as :
  - a. Study of insects
  - b. Study of crop diseases
  - c. Study of forest tree diseases
  - d. Study of fruit trees
  
2. Which of the following is **not** classified as a microbe?
  - a. Lady bug
  - b. Cytoplasma
  - c. Protozoa
  - d. Nematode
  
3. Which of the following is an energy source of heterotroph?
  - a. Inorganic compound
  - b. Organic matter
  - c. Light
  - d. Water
  
4. Virus do reproduce through -:
  - a. Replication
  - b. Binary Fission
  - c. Binary Fusion
  - d. Sexual reproduction
  
5. An endoparasitic nematode usually -:
  - a. Feeds outside the roots
  - b. Feeds outside the soil
  - c. Feeds inside the roots
  - d. Feeds outside the leaves
  
6. The scientific name for root knot nematode is -:
  - a. *Meloidogne spp.*
  - b. *Radopholus similis*
  - c. *Aphelenchoides spp*
  - d. *Pratylenchus spp.*
  
7. Which of the following is the scientific name for Vesi tree?
  - a. *Santalum album*
  - b. *Casuarina equisetifolia*
  - c. *Calophullum vitiensis*
  - d. *Intsia bijuga*



8. A common disease of nursery seedlings in Fiji -:

- a. Necrosis
- b. Damping Off
- c. Leaf blight
- d. Downey mildew

9. Which of the following is not an example of wood decay?

- a. Soft rot
- b. White rot
- c. brown rot
- d. blackrot

10. The practical length of time a stand should grow for timber production (rotation age) and influenced by decay is known as -:

- a. Pathological rotation
- b. Crop rotation
- c. Stand Rotation
- d. Hydrological rotation

**SECTION B:**

**Matching**

**(10 marks)**

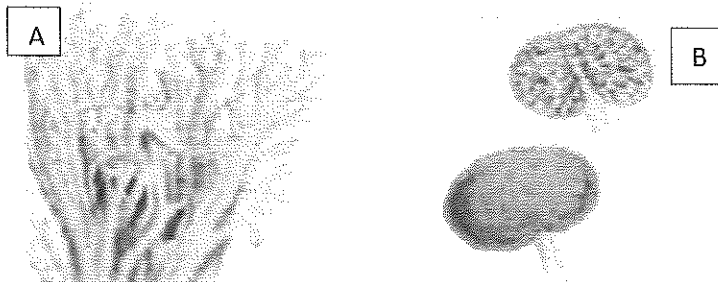
Match the following term in the table below to their correct description on the right.

1	Tissue Culture	Fix nitrogen to soil
2	Phanerogamic	A control measure of disease
3	Stylet	<i>Pinus carribaea</i>
4	Pathogen	The piercing mouthpart of nematodes
5	Exotic tree specie	Fungal reproductive organ
6	Rhizobium	Virus
7	Exclusion	Growth of tissues or organs under sterile condition on nutrient medium.
8	Mycelium	Ability to withstand infection
9	Obligate	Seed plants called flowering parasites
10	Resistance	Cytoplasm



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

1. With the aid of the diagram, draw a simple structure of a bacteria and label 3 of its body parts. (2 marks)
2. Briefly explain how aphids contributes to the spread of disease in a forest. (2 marks)
3. List 3 types of penetration pathogens have in order to enter a host cell of a plant.(1 ½ marks)
4. List 3 properties of a pathogen. (1 ½ marks)
5. Name the causal agents of **pink disease** and **root rot** on forest plantations in Fiji. (2 marks)
6. Briefly explain the differences between a bacteria and a protozoan with the aid of diagrams. (2 marks)
7. Name the two different fungi on the diagram below. ( 2 marks)



8. Briefly explain an advantage of a host for being resistance as well as the disadvantage of being resistance. (2 marks)
9. Nematodes can be controlled using biological, chemical and cultural approach. Briefly explain the above mentioned controlled measures with given examples. (3 marks)
10. Briefly explain how microbes play a major role in the nitrogen cycle which is an essential cycle for all plant growth and development. (2 marks)





**SECTION D: Essay Questions**

**(20 Marks)**

Based on the following topics provided, you are to choose **only 2 topics** and write an essay of 500-800 words.

1. Explain **five important roles** of **microbes** in the forest floor with given examples or illustrations. **(10 marks)**

**or**

2. Discuss all the developmental stages that pathogen undergo in order to cause disease infection in forest trees. **(10 marks)**

**or**

3. Explain **5 ways** in which humans contribute to the spread of pathogens which will cause disease outbreak. **(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**

