



**PAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

**FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES**  
**SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES**  
**DEPARTMENT OF AGRICULTURAL SCIENCES AND AGRIBUSINESS**

<b>QUALIFICATION: BACHELOR OF SCIENCE IN HORTICULTURE</b>	
<b>QUALIFICATION CODE: 07BHOR</b>	<b>LEVEL: 7</b>
<b>COURSE CODE: PPT610S</b>	<b>COURSE NAME: PLANT PROTECTION</b>
<b>SESSION: JULY 2023</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	Dr Norman Muzhinji
<b>MODERATOR:</b>	Dr Edgar Mowa

<b>INSTRUCTIONS</b>
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

**PERMISSIBLE MATERIALS**

1. Examination question paper
2. Answering book

**THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)**

1. Define or explain the following terms used in plant protection with examples.
  - i. Systemic insecticide. [2]
  - ii. Post-emergence herbicide application. [2]
2. Briefly, explain the impact of plant pests to the horticultural sector in Namibia. [5]
- 3 a. Name a plant disease of your choice and explain the aetiology and epidemiology of the disease and recommend appropriate recommended control measures. [20]
- b. Explain the importance of epidemiology in disease management? [4]
4. Using your own examples of pest/ disease and crop; explain how crop rotation can be used to control pest and plant diseases. [10]
5. a. Name four (3) advantages of using biological pest control methods. [2]
- b. List three (3) precautions to keep in mind when using chemical control measures. [3]
6. Tomato spotted wilt (caused by tomato spotted wilt virus) is generally considered a monocyclic disease of tomatoes. Explain what this means. [2]
7. Damping off is a disease that affects seedlings in the nursery.
  - a. Describe the symptoms of damping-off on seedlings and factors favouring its development. [4]
  - b. Describe the integrated pest management of damping off in the nursery seed bed. [4]
8. a. What are three ways that a plant virus can be transmitted from one plant to another in a field? [3]
- b. Why is management of plant viral diseases always based on prevention, rather than curing? [2]
- c. A potato grower in Tsumeb sprayed his virus infected potato plants with a pesticide. Is the use of pesticide to manage viruses in the field a correct procedure? Yes or No. Justify your answer. [2]
- Suggest to the farmer any three strategies that he can use to prevent future outbreak of viral diseases in his potato field. [3]
9. a. Explain why weeds are a problem in conservation agricultural systems? Explain in detail how you would address the problem. [6]
- b. Weeds can be controlled by mechanical and biological methods. For each of these methods, describe the advantages and disadvantages of each. [8]

10. *Tuta absoluta* is one of the most destructive pests in Namibia causing yield losses in potato and tomato production. What will be the disadvantages of using insecticide for controlling *Tuta absoluta* on potato. [4]
11. As a horticulturalist responsible for production of quality tomatoes and potatoes at Mashare irrigation scheme, you have been using insecticides to control *Tuta absoluta* in potato fields for several years, but it's no longer effective. Explain two possible causes of what could have led to this development and discuss ways you would deal with such a situation. [10]
12. Mention any four strategies that you would use to reduce the primary sources of inoculum of any pathogen of your choice. [4]

**THE END**