



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED 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: PTP610S</b>	<b>COURSE NAME: PLANT PHYSIOLOGY</b>
<b>DATE: JUNE 2024</b>	
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	Dr Grace N. Kangueehi
<b>MODERATOR:</b>	Prof Theo Wassenaar

<b>INSTRUCTIONS</b>
<ol style="list-style-type: none"><li>1. Answer ALL the questions.</li><li>2. Write clearly and neatly.</li><li>3. Number the answers clearly.</li></ol>

**PERMISSIBLE MATERIALS**

1. Examination question paper
2. Answering book

**THIS QUESTION PAPER CONSISTS OF 1 PAGE (Excluding this front page)**

### QUESTION 1

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- 1.1. What is the difference between angiosperms and gymnosperms? (2)
- 1.2. What is phytochrome and Pfr and why are they important to plants? (3)
- 1.3. What do you understand by the term Glycolysis? (5)
- 1.4. Describe the soil, plant, and atmosphere continuum (SPAC). (6)
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### QUESTION 2

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- 2.1. How does soil pH affect nutrient availability, soil microbes, and root growth? (6)
- 2.2. Define active transport and then list and discuss the three (3) active transport processes in a plant. (7)
- 2.3. Define photoperiodism and describe its three (3) forms? (7)
- 2.4. Deliberate how water potential, evapotranspiration, stomatal regulation and solute concentration differences between the xylem and phloem influence transportation of water in plants. (9)
- 2.5 List four (4) plant growth hormones and describe their functions. (8)
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### QUESTION 3

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- 3.1. Explain how photosynthates are transported in plants. (10)
- 3.2. Describe tissue culture and list four advantages of propagation by tissue culture. (10)
- 3.3. Define plant anabolism and describe the three stages of anabolism in details. (12)
- 3.4. Discuss the Calvin Cycle in detail and elaborate on the steps involved and the end product of each step. (15)
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**Final Marks: 100**