



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE IN HORTICULTURE	
QUALIFICATION CODE: 07BHOR	LEVEL: 6
COURSE: PLANT PHYSIOLOGY	COURSE CODE: PTP610S
DATE: JUNE 2022	SESSION: JUNE
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	DR GRACE N. KANGUEEHI
MODERATOR:	PROF THEO WASSENAAR

THIS QUESTION PAPER CONSISTS OF 1 PAGES

(Excluding this front page)

INSTRUCTIONS

1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

QUESTION 1

- 1.1 What is the difference between angiosperms and gymnosperms? (2)
- 1.2 Explain what is meant by differentiation, and give an example. (2)
- 1.3 Discuss the nitrate reduction process. (3)
- 1.4 What is phytochrome (Pfr) and why is Pfr important to plants? (3)
- 1.5 Differentiate between a plant cell and an animal cell, by listing the main difference between the two cells. (3)
-

[13]

QUESTION 2

- 2.1 Distinguish between the Symplastic, Transmembrane and the Apoplastic pathways. (6)
- 2.2 How does soil pH affect nutrient availability, soil microbes, and root growth? (6)
- 2.3 Define and then discuss the three (3) active transport processes in a plant. (6)
- 2.4 Define photoperiodism and describe its three (3) form. (7)
- 2.5 List four (4) plant growth hormones and describe their functions. (8)
-

[33]

QUESTION 3

- 3.1 Explain how photosynthates are transported in plants. (10)
- 3.2 Water deficit can have a negative impact on plant growth. In your own words, discuss the morphological, physiological, biochemical and growth responses of plants to drought stress. (12)
- 3.3 Define the cohesion-tension theory and describe how water potential, evapotranspiration, and stomatal regulation influences transportation of water in plants. (14)
- 3.4 Give an example of a C₃, C₄, and CAM plants and differentiate between their photosynthetic pathways. (18)
-

[54]

Final Marks: 100