



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: JULY 2022	SESSION: JULY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY 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 Differentiate between the two (2) types of plant growth. (3)
- 1.2 Explain what is meant by differentiation, and give an example. (3)
- 1.3 List the three principal criteria by which an element can be judged essential or non-essential to a plant. (3)
- 1.4 Why is photoperiodism important in plants? (3)
- 1.5 What do you understand by the terms plant physiology and plant anatomy? (4)
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[16]

QUESTION 2

- 2.1 What do you understand by the term cellular respiration? (4)
- 2.2 Discuss stomatal responses to drought stress. (5)
- 2.3 Discuss the soil, plant and atmosphere continuum (SPAC). (6)
- 2.4 Describe the plastids, vacuoles and cell walls of a plant cell and explain their functions. (9)
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[24]

QUESTION 3

- 3.1 List the different types of Mycorrhizal Fungi and explain how it facilitates nutrient uptake by roots. (10)
- 3.2 Define water potential and explain how it is influenced by solutes, pressure, gravity, and the matric potential. (10)
- 3.3 Explain how photosynthates are transported in plants. (10)
- 3.4 Discuss how water potential, evapotranspiration, and stomatal regulation influences transportation of water in plants. (15)
- 3.5 Differentiate between C₃, C₄, and CAM plants and discuss how climate change will influence their photosynthetic pathways and growth. (15)
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[60]

Final Marks: 100