

UNIVERSITY OF FORT HARE

AGP 223

Degree Examinations

November 2018

Time : 3 Hours

Subject: Pasture Anatomy and Physiology

Marks : 100

This paper consists of 2 printed pages including the cover page

Internal Examiner

Prof. S.T. Beyene

Moderator

Dr. K. Mopipi

Instructions

ANSWER ALL QUESTIONS

QUESTION 1 [20 MARKS]

- a. Define the following terms
 - i. Phenology [2 Marks]
 - ii. Leaf Area Index [2 Marks]
 - iii. Tiller [2 Marks]
 - iv. Photoperiod [2 Marks]
 - v. Meristem [2 Marks]
- b. State the function of the following organelles
 - i. Mitochondria [5 Marks]
 - ii. Golgi bodies [5 Marks]

QUESTION 2 [20 MARKS]

- a. Outline the stages in plant growth. [6 Marks]
- b. With the aid of diagrams, describe the two main root systems. [8 Marks]
- c. What is the role and functions of the stem? [6 Marks]

QUESTION 3 [20 MARKS]

- a. Explain how the following factors affect plant growth and development
 - i. Soil depth [4 Marks]
 - ii. Leaf removal [2 Marks]
- b. How can a rangeland manager utilise defoliation management by livestock to successfully sustain a healthy rangeland ecosystem? [7 Marks]
- c. Explain the influence of grazing on tillering. [7 Marks]

QUESTION 4 [20 MARKS]

- a. Outline the factors that affect the rate of photosynthesis. [5 Marks]
- b. What are the major differences and similarities between C₃, C₄ and CAM pathways? [15 Marks]

QUESTION 5 [20 MARKS]

- a. Explain the factors that affect the rate of transpiration. [10 Marks]
- b. Write short notes on respiration and photorespiration. [10 Marks]