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**UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER MAIN EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF EDUCATION SCIENCE/ BACHELOR OF
SCIENCE IN BIO/BAB/BBC**

COURSE CODE: SBT 312

COURSE TITLE: PLANT PHYSIOLOGY

DATE: 8th JANUARY 2018

TIME: 9:00 -11:00 a.m.

INSTRUCTIONS TO CANDIDATES

Answer Question One **compulsory (30mks)** and any other Two Questions **(20mks)** each.

TIME: 2 Hours

KIBABII observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

QUESTION ONE (30 MKS)

- a) Explain the following terms in relation to plant physiology (5 marks)
- (i) Absorption spectrum
 - (ii) Genetically modified organism (GMO)
 - (iii) Water potential
 - (iv) Turgor pressure
 - (v) Phloem loading
- b) State any **FIVE** significance of transpiration in plants (5 marks)
- c) Briefly describe photorespiration and explain why it is a wasteful process (5 marks)
- d) Briefly describe the process of absorption of water by plants (5 marks)
- e) State any **FIVE** advantages of greenhouse technology (5 marks)
- f) Name and explain the functions of any **FIVE** secondary plant metabolites (5 marks)

QUESTION TWO

Discuss the biosynthetic pathway (dark reaction) in the C₃, C₄ and CAM photosynthesis

(20 marks)

QUESTION THREE

Using a well labelled diagram discuss glycolysis and Krebs' citric acid cycle pathways in cellular

respiration

(20 marks)

QUESTION FOUR

Identify any **FIVE** endogenous plant hormones. In each case name the site of its production and

function.

(20 marks)

QUESTION FIVE

Discuss any **FIVE** secondary plant metabolites mentioning its functions in plants. (20 marks)