



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2018/2019 ACADEMIC YEAR FOURTH YEAR SECOND SEMESTER

SCHOOL OF SCIENCE BACHELOR OF SCIENCE

COURSE CODE: BOT 415
COURSE TITLE: PLANT PHYSIOLOGY II

DATE: 18TH APRIL, 2019
1630HRS

TIME: 1430 -

INSTRUCTIONS TO CANDIDATES

- (a) Answer **ALL** the Questions in Section A
- (b) Answer **ANY TWO** Questions in Section B

This paper consists of 2 printed pages. Please turn over.

SECTION A: ANSWER ALL QUESTIONS (30 MARKS)

1. Briefly describe the biosynthesis of waxes in plants.
(3marks)
2. Outline any three inter-conversion reactions in monosaccharides. **(3marks)**
3. Briefly explain the effects of photorespiration on energy productivity of a cell.
(3marks)
4. Briefly describe the anaerobic breakdown of pyruvate under anaerobic conditions.
(3marks)
5. State any two similarities and one difference in composition and function of nitrogenase and nitrite reductase.
(3marks)
6. Briefly explain the difference between basic and acidic amino acids. **(3marks)**
7. Outline the localities of fatty acid synthesis and their nature in cells of plants.
(3marks)
8. Briefly describe the group transfer reactions of monosaccharides. **(3marks)**
9. Illustrate biosynthesis of sulpholipids in cells.
(3marks)
10. Briefly describe the functions of any three polyhydric alcohols in plant cells.
(3marks)

SECTION B: ANSWER ANY TWO QUESTIONS (2X20=40 MARKS)

11. a) Outline any five conditions necessary for fixation of nitrogen in biological systems.
(5marks)
b) Describe the types and formation of various protein structures.
(15marks)
12. Discuss the oxidation of fatty acids in plant cells.
(20marks)

- 13.** a) Briefly explain the need and process of gluconeogenesis in cells. **(5marks)**
b) Discuss the biosynthesis of nucleotides in plant cells.
(15marks)
- 14.** Discuss the classification of enzymes according to the International Enzyme Commission (IEC)
(20 marks)

//END