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 **TIME: 1430 – 1630HRS**

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)**

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