



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

SECOND YEAR FIRST SEMESTER UNIVERSITY EXAMINATION

2017/2018 ACADEMIC YEAR

REGULAR

COURSE CODE: AHT 3212

COURSE TITLE: PLANT BIOCHEMISTRY

EXAM VENUE: LR 2

STREAMS: Bsc. Horticulture

DATE: 19/12/17

EXAM SESSION: 2.00 – 4.00PM

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

SECTION A [30 MARKS]

Answer ALL questions from this Section.

1. Briefly describe the following:
 - (i) Saturated and unsaturated fatty acids (2 marks)
 - (ii) Monoacylglycerols and triacylglycerols (2 marks)

2. With specific examples, describe the following types of isomers
 - (i) Epimers (2 marks)
 - (ii) Anomers (2 marks)

3. (i) What is a Zwitterion? (4 marks)
(ii) Using examples of any 2 amino acids, describe the formation of a dipeptide (4 marks)

4. Describe the fate of pyruvate, the end product of glycolysis, in anaerobic respiration in plants (5 marks)

5. Explain the following as used in enzymology
 - (i) Allosteric inhibition (2 marks)
 - (ii) Michaelis constant (K_m) (2 marks)

6. (i) Describe pentose phosphate pathway and its significance to plants (5 marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this Section.

7. Describe protein biosynthesis in plants (20 marks)

8. With appropriate illustrations, explain Krebs's cycle in plants (20 marks)

9. Describe the role of plant secondary metabolites in the defense of plants against pathogens (20 marks)