



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR SCIENCE IN
BIOLOGICAL SCIENCES
3rd YEAR 2nd SEMESTER 2018/2019 ACADEMIC YEAR
MAIN CAMPUS - REGULAR

COURSE CODE: SBI 3322
COURSE TITLE: PLANT METABOLISM

EXAM VENUE: BIO LAB **STREAM (BIO)**
DATE: 26/04/2019 **EXAM SESSION:12.00-2.00PM**

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in Section A and Any two 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: SHORT ANSWER QUESTIONS (30 MARKS)

1. Outline three deficiency symptoms of potassium. (3 marks)
2. Explain the importance of lipochitoin oligosaccharides during legume nodule formation. (3 marks)
3. Describe activation of amino acids as a phase during protein synthesis. (3 marks)
4. Name three free living heterotrophic bacteria that are involved in nitrogen fixation. (3 marks)
5. Describe the function of Ferredoxin during the photochemical reactions of photosynthesis. (3 marks)
6. Describe role of peptidyl-transferases during peptide bond formation. (3 marks)
7. Outline three criteria for essentiality of mineral nutrients. (3marks)
8. Describe the carboxylation phase of the photosynthetic carbon reduction cycle. (3 marks)
9. Describe beneficial elements. (3 marks)
10. Outline the functions of the three active sites of the ribosome. (3 marks)

SECTION B: ESSAY QUESTIONS (40 MARKS)

11. Describe photorespiration in plants. (20 marks)
12. Discuss why symptom of a mineral nutrient deficiency depends on the function and mobility of the element. (20 marks)
13. Describe the transcription process in cells. (20 marks)
14. Discuss the factors limiting biological nitrogen fixation in roots. (20 marks)