



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY**  
**SCHOOL OF BIOLOGICAL, PHYSICAL, MATHEMATICS AND ACTURIAL SCIENCES**  
**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION**  
**SCIENCE**

**4<sup>th</sup> YEAR 1<sup>st</sup> SEMESTER 2022/2023 ACADEMIC YEAR**

**MAIN CAMPUS - REGULAR**

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<b>COURSE CODE:</b>	<b>SBB 9407</b>
<b>COURSE TITLE:</b>	<b>PLANT BIOCHEMISTRY AND PHYSIOLOGY</b>
<b>EXAM VENUE: LAB 3/4/5</b>	<b>STREAM: (BED.SC)</b>
<b>DATE: 16/12/2022</b>	<b>EXAM SESSION: 15.00-17.00PM</b>
<b>TIME: 2 HOURS</b>	

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**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**
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**SECTION A: SHORT ANSWER QUESTIONS (30 MARKS)**

1. Describe the metabolic state that drives cells to synthesize glucose from non-carbohydrate precursors (3 marks)
2. Describe the role of vitamin B2 (Riboflavin) in metabolic reactions (3 marks)
3. Describe three parts of an enzyme (3 marks)
4. Outline the significance of synthesizing enzymes in their inactive form (3 marks)
5. Describe three unique biological characteristics of an enzyme (3 marks)
6. Explain the formation of triglycerides (3 marks)
7. Describe the metabolic significance of TCA cycle (3 marks)
8. Describe the role of Hill reaction in the process of photosynthesis (3 marks)
9. Outline three bonds that hold the tertiary structure of proteins (3 marks)
10. Account for the net production of 2 ATP molecules in glycolysis (3 marks)

**SECTION B: ESSAY QUESTIONS (40 MARKS)**

11. Using specific examples outline the basis of enzyme classification (20 marks)
12. Describe structural classification of lipids (20 marks)
13. Describe the role of different forms of coenzymes (20 marks)
14. Highlight the metabolic significance and steps in gluconeogenesis (20 marks)