



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND  
TECHNOLOGY SCHOOL OF HEALTH SCIENCES  
UNIVERSITY EXAMINATION FOR DEGREE OF MASTER  
2<sup>ND</sup> YEAR 1<sup>ST</sup> SEMESTER 2023/2024 ACADEMIC YEAR  
MAIN**

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**COURSE CODE: HBB 9203**  
**COURSE TITLE: MEDICAL BIOCHEMISTRY**  
**EXAM VENUE: STREAM: (BSc. Env. Health)**  
**DATE: EXAM SESSION:**  
**TIME: 2.00 HOURS**

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**Instructions:**

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

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

1. State TWO functions of the hypothalamus in the endocrine system (4 marks)
2. Give THREE examples each of water-soluble and fat-soluble vitamins (3 marks)
3. State TWO significance of maintaining blood glucose levels.(4 marks)
4. Mention THREE ways hormones regulate physiological processes in the body.(6 marks)
5. Enumerate THREE key functions of the pentose phosphate pathway in cellular metabolism.(6 marks)
6. Mention THREE major steps involved in glycolysis (3 marks)
7. Define TWO differences between primary, and secondary protein structures.(4 marks)

**SECTION B: ANSWER TWO QUESTIONS (40 MARKS)**

1. Describe lipid metabolism, and the importance of its pathways in energy production and storage.(20 marks)
2. Explain the mechanisms of hormonal action associated endocrine disorders (20 marks)
3. Examine the fundamental role of amino acids in cellular processes. Discuss the classification of amino acids, the consequences of amino acid deficiencies. (20 marks)