

CHUKA

UNIVERSITY



UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF DOCTOR OF  
PHILOSOPHY IN MICROBIOLOGY AND BIOTECHNOLOGY**

**BOTA 900: PHILOSOPHY OF BIOLOGY**

**STREAMS: Ph.D**

**TIME: 3 HOURS**

**DAY/DATE: MONDAY 14/04/2025**

**2.30 P.M. – 5.30 P.M.**

**INSTRUCTIONS**

- **Answer any Four (4) questions in this paper. Each question carries 15 marks. Illustrate your answers with diagrams where appropriate.**

**Essay Questions (15 marks each)**

1. How does the study of biology differ from that of other natural sciences in philosophical context? (15 marks)
  2. Discuss the philosophical basis of the development of biology as a scientific discipline. (15 marks)
  3. Explain what logic and epistemology are and discuss how can they can be employed in the study of biology. (15 marks)
  4. Discuss the ethical dilemmas associated with biological research that involve animals and human subjects. (15 marks)
  5. Explain how the theory of Darwinian evolution challenges traditional notion of essentialism in biology. (15 marks)
  6. What is the relevance of use of reductionism and holism in study of biology? (15 marks)
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