



W1-2-60-1-6  
**JOMO KENYATTA UNIVERSITY  
OF  
AGRICULTURE AND TECHNOLOGY  
UNIVERSITY EXAMINATIONS 2022/2023**

**END OF SEMESTER EXAMINATIONS FOR THE DEGREE OF  
MASTER OF SCIENCE IN MEDICAL MICROBIOLOGY**

**TMM 3103: MICROBIAL GENETICS**

**DATE: FEBRUARY 2023**

**TIME: 3 HOURS**

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**INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

1. Discuss the technology behind Human insulin production (25 marks)
2. a) Discuss how genetic engineering has revolutionized biotechnology (15 marks)  
b) Describe star activity and its causes (10 marks)
3. Describe steps in DNA amplification (25 marks)
4. Discuss steps in bacterial nucleic acid isolation (25 marks)
5. a) Explain the central dogma of molecular biology (10 marks)  
b) what are translation and transcription. What happens to mRNA after transcription?  
(15 marks).
6. Explain Bacterial DNA sequencing (25 marks)