



**TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

DIPLOMA IN INDUSTRIAL MICROBIOLOGY AND  
BIOTECHNOLOGY

AAB 2202: FUNDAMENTALS OF GENETICS

END OF SEMESTER EXAMINATION

**SERIES:** DEC 2024

**TIME:** 2HOURS

**DATE:** Pick Date Select Month Pick Year

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (**Compulsory**) and any other **TWO** questions.

**Do not write on the question paper.**

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**SECTION A:**

**Question ONE**

- a) Define the following terms as used in Genetics (5 marks)
  - i. **Inheritance or heredity**
  - ii. **Variation**
  - iii. **cyto-differentiation**
  - iv. **Transmission genetics**
  - v. **Population genetics**
- b) State the **THREE** general areas of genetics (3 mks)
- c) Outline the importance of genetics (6 mks)
- d) State the Law of segregation (4 mks)
- e) Outline the Methods of working which contributed to Mendel's success(6 mks)
- f) Outline the postulates of Mendel experiment (6 mks)

**SECTION B:**

## **Question TWO**

- a) State the TWO types of chromosomes (2 mks)
- b) Discuss the Watson and Crick model of DNA structure (13 mks)

## **Question THREE**

- a) Outline the Law of Hardy – Weinberg Law Equilibrium (**3 mks**)
- b) Discuss the Mendel's considerations about the material to use in his experiment (12 mks)

## **Question FOUR**

- a) Discuss the *XX-XO heterogamete type* (7 mks)
- b) Discuss the structure of sex chromosomes (8 mks)

## **Question FIVE**

Discuss the enzymes involved in DNA replication (15 mks)