**TECHNICAL UNIVERSITY OF MOMBASA**

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

SUPPLEMENTARY/SPECIAL EXAM

**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.**

**SECTION A:**

**Question ONE**

a) Define the following terms as used in Genetics (5 marks)

i. **Hermaphrodite**

ii. **Sexual dimorphism**

iii. **cyto-differentiation**

iv. **Transmission genetics**

v. **Population genetics**

**b)** State the THREE general areas of genetics (3 mks)

c) Differentiate between DNA and RNA (6 mks)

d) Highlight the properties of a genetic material (4 mks)

e) State any THREE X-chromosome linked traits (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) **Outline the different types of Dorminance** (5 mks)
b) Explain the factors triggering Evolution (10 mks)

**Question FIVE**

Discuss the reasons for Mendel's success (15 mks)