



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF APPLIED & HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

P2 **UNIVERSITY EXAMINATION FOR:**

DIPLOMA IN ANALYTICAL CHEMISTRY

SEP 2024 J&S FT

AAB 2105 : BIOLOGY I

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES:DECEMBER 2024

TIME:2HOURS

DATE:Pick DateDec 2024

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

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

QUESTION 1

- I. Describe the Mendelian law of segregation (3 marks)
- II. Define the following terms as used in genetics (4 marks)
 - i. Dominant
 - ii. Recessive
- III. Explain the principle of tonicity as applies to eukaryotic cells (6 marks)
- IV. Give the functions of the main parts of the microscope (5 marks)
- V. What are the characteristics of living organisms (5 marks)
- VI. Illustrate the structure of the plasma membrane (4 marks)
- VII. State the function of a cell wall in plants (3 marks)



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QUESTION 2

- I. Which rules are to be observed when using a compound microscope? (10 marks)
- II. Outline the factors that may affect the rate of substances across a cell membrane (5 marks)

QUESTION 3

- I. Give the functions of any ten organelles found in a eukaryotic cell (10 marks)
- II. What are the main types of metabolism found in prokaryotic cells? (5 marks)

QUESTION 4

- I. Outline the major differences between DNA and RNA (10 marks)
- II. What are the probable causes of induced genetic mutations (5 marks)

QUESTION 5

- I. Describe the mitosis process (10 marks)
- II. How does the timing of cell mitosis occur (5 marks)

