



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Applied & Health Sciences*

DEPARTMENT OF PURE AND APPLIED SCIENCES

**CERTIFICATE IN SCIENCE LABORATORY TECHNOLOGY (09J)**

**END OF SEMESTER EXAMINATIONS**

**AAB 1201: BIOLOGICAL TECHNIQUES II (THEORY)**

**SERIES: AUGUST/SEPTEMBER 2011**

**TIME: 3 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer booklet*

This paper consists of two sections **A & B**.

Answer all questions in **SECTION A** and any **TWO** in **SECTION B**

This paper consists of **THREE** printed pages

## SECTION A

(Answer all questions in this section)

1. (a) Define the term magnification (2 marks)  
(b) If the objective lens is X40 and the eye-piece is X10. Calculate the final magnification (2 marks)
2. State one function for each of the following parts of a microscope:
  - a) Mirror
  - b) Diaphragm
  - c) Eye-piece lens
  - d) Limb (4 marks)
3. Differentiate between:
  - a) Cell
  - b) Cell organelle (4 marks)
4. Distinguish between diffusion and osmosis (4 marks)
5. List down **FOUR** properties of enzymes (4 marks)
6. Differentiate between:
  - a) Sterilization
  - b) Disinfection (4 marks)
7. Name **FOUR** methods of sterilization (4 marks)
8. State **FOUR** functions of blood (4 marks)
9. List the main steps in dissection procedure (4 marks)
10. (a) Give **TWO** uses of anaesthetics (2 marks)  
(b) Name **TWO** ways of disposing carcasses (2 marks)
11. Name **FOUR** types of museum (4 marks)
12. (a) What is a herbarium? (2 marks)  
(b) Give **TWO** uses of a herbarium (2 marks)
13. Give **FOUR** environmental conditions required in an animal house (4 marks)
14. List down **FOUR** animal house duties (4 marks)
15. Explain the importance of proper handling of animals (4 marks)

## SECTION B

(Answer any **TWO** questions from this section)

16. Explain care and maintenance of a microscope (20 marks)

17. Outline the hot water maceration method of preparation of bone skeleton (20 marks)
18. What information should accompany a herbarium notebook (20 marks)
19. (a) Describe the Biuret test for proteins (5 marks)
- (b) Explain humane killing of the following animals
- (i) Mice (5 marks)
  - (ii) Small fish (5 marks)
- (c) Explain how carbon dioxide is used for humane killing of laboratory animals (5 marks)