TECHNICAL UNIVERSITY OF MOMBASA

School of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN BIOCHEMISTRY

ABC 4203: HISTOLOGICAL TECHNIQUES

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2024 SERIES

TIME: 2 HOURS

DATE: DECEMBER 2024

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.

Question One (25 Marks)

a) Fill in the information in the table below on information on the epithelial tissue (4 marks)

Types of Epithelial Tissue	Location	Function
Transitional epithelia or urothelium		
Keratinised epithelia		

b) State the function of each of the following main types of connective tissue

i) Proper connective tissue (2 marks)

ii) Specialized connective tissues (3 marks)

c) Using examples, state the type of connective tissue cells based on function (3 marks)

d) Using a diagram, illustrate the structure of a typical nerve cell (3 marks)

e) State the importance of fixing specimen during histological studies (3 marks)

f) Outline the main stages of Tissue preparation by the Paraffin Method (4 marks)

h) Compare the tunica media of arteries and veins (2 marks)

i) Outline the four basic histological layers in all lumen-bearing organs (4 marks)

Question Two (25 Marks)

Describe the major forms of neurons;

i) based of structure (5 marks)

ii) based on location and function (6 marks)

b) Describe briefly the types of connective tissue fibres (6 marks)

c) Explain the adaptations of the cardiac muscle tissue to its functions (3 marks)

Question Three (25 Marks)

a) Describe the process of tissue preparation using the Paraffin Method (16 marks)

b) Discuss the common artifacts associated with sectioning during microtomy (4 marks)

Question Four (25 Marks)

Describe TEN types of stains that can be used to enable visibility and differentiation of animal cells and tissues in histological studies (20 marks)

Question Five (25 Marks)

Discuss the histological features of the cardiovascular system (20 marks)