



# TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

**BACHELOR OF SCIENCE IN MEDICAL ENGINEERING**

**ECL4102: BIOMEDICAL SCIENCES**

**END OF SEMESTER EXAMINATION**

**SERIES:** Select series 2016

**TIME:** 2 HOURS

**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.**

## **Question ONE**

(a) Define the following terms

- |                        |           |
|------------------------|-----------|
| (a) Nephron            | (2 marks) |
| (b) Actin              | (2 marks) |
| (c) Ventilation        | (2 marks) |
| (d) Chemical Digestion | (2 marks) |

(b) Outline at least five functions of the liver. (5 marks)

(c) Describe the steps involved in the performance of contracting actin/ power stroke. (5 marks)

(d) (i) With example(s) differentiate between endocrine glands and exocrine glands. (4 marks)

(ii) Classify hormones giving an examples of each. (4 marks)

(e) (i) Draw the structure of a neuron. (2 marks)

(ii) Outline the types of neurons and their functions. (2 marks)

## **Question TWO**

Describe the structure and functions of the sense organs.

**( 20 marks)**

## **Question THREE**

(a) Draw the structure of a kidney.

**(6 marks)**

(b) Describe the process of urine formation.

**(7 marks)**

(b) Describe the process of maintaining water-salt balance.

**(7 marks)**

## **Question FOUR**

(a) Discuss the formed cellular elements of the blood.

**(10 marks)**

(b) Explain the process of Hemostasis/ Clotting.

**(10 marks)**

## **Question FIVE**

With an illustration, explain the structure and functions of the heart.

**(20 marks)**