



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN MEDICAL ENGINEERING

ECL 4102: BIOMEDICAL SCIENCE

END OF SEMESTER EXAMINATION

SERIES: Select series Pick year

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) Outline at least four functions of skeletal systems. **(4 marks)**
- (b) Describe the four classes of bones. **(4 marks)**
- (c) Outline at least five functions of the liver. **(5 marks)**
- (d) Explain the ALL and NONE Principle in nervous transmission. **(5 marks)**
- (e) Discuss the mechanism of ventilation. **(5 marks)**
- (f) Describe the female reproductive cycle "menstrual cycle." **(5 marks)**
- (g) Name all the components of the human semen. **(2 marks)**

Question TWO

Skin is considered as one of the most important parts of the body, describe the structure of the skin and its major functions. **(20 marks)**

Question THREE

(a) Explain the process of urine formation. **(10 marks)**

(b) Explain the process of maintaining water-salt balance. **(10 marks)**

Question FOUR

The cranium's main function is to protect the brain from trauma. Name the four major sutures, cranium bones and describe its development. **(20 marks)**

Question FIVE

(a) Discuss the formed cellular elements of the blood. **(10 marks)**

(b) Explain the process of Hemostasis/ Clotting. **(10 marks)**