



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences
Department of Pure & Applied Sciences

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN BIOCHEMISTRY
AAB 4220: MAMMALIAN PHYSIOLOGY
SUPP/SPECIAL EXAMINATION
SERIES: Pickyear2024
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** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

QUESTION ONE

- (a) Explain how the heart functions, detailing the role of its chambers, valves, and electrical conduction system. **(3 marks)**
- (b) Create a detailed, labeled diagram of a nephron. **(4 marks)**
- (c) Identify the THREE cardiovascular centers in the brain and state their functions. **(3 marks)**
- (d) Giving examples, differentiate between primary and secondary reproductive organs. **(4 marks)**
- (e) Trace the pathway of sperm from the male testes to the uterine tube of a female. **(3 marks)**
- (f) State the processes that occur in urine formation. **(3 marks)**
- (g) Identify the component organs and structures of the female reproductive system. **(2 marks)**
- (h) Name the hormones of the male reproductive system and state their functions. **(3 marks)**
- (i) Outline how the functions of the respiratory system are regulated. **(5 marks)**

QUESTION TWO

Discuss the following.

- (a) The role of the nervous and endocrine system in regulation of body function. **(10 marks)**
- (b) Hormones of the adrenal and the thyroid glands and their functions. **(10 marks)**

QUESTION THREE

Identify the major organs in the human digestive system and describe their functions. **(20 marks)**

QUESTION FOUR

Discuss the structures and functions of organs involved in external respiration.

(20 marks)

QUESTION FIVE

(a) Describe the following.

i) The lymphatic system and its physiological role in the body.

(6 marks)

ii) The process of spermatogenesis.

(6 marks)

(b) Giving examples, outline the mechanism of hormone action.

(8 marks)