



UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

**FOURTH YEAR EXAMINATION FOR THE DEGREES OF
BACHELOR OF SCIENCE (GENERAL) AND BACHELOR OF
EDUCATION (SCIENCE)**

ZOOL 411: COMPARATIVE ANIMAL PHYSIOLOGY

STREAM: REGULAR

TIME: 2 HRS

DAY: TUESDAY [2.30 – 4.30 P.M]

DATE: 27/01/2026

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

INSTRUCTIONS

- (i) **Answer ALL Questions in Section A and TWO Questions in Section B**
- (ii) **Do not write on the question paper**

SECTION A: SHORT ANSWER QUESTIONS (40 MARKS)

QUESTION ONE

Outline the factors that affect oxygen hemoglobin binding. **(5 Marks)**

QUESTION TWO

Explain the various respiratory pigments. **(5 Marks)**

QUESTION THREE

Write short notes on the adaptation in Poikilotherms. **(5 Marks)**

QUESTION FOUR

Explain the normal ECG wave. **(5 Marks)**

QUESTION FIVE

With examples, explain the similarities between hormones and enzyme. **(5 Marks)**

QUESTION SIX

Describe the structure and function of human kidneys. **(5 Marks)**

QUESTION SEVEN

Distinguish between aestivation and hibernation. **(5 Marks)**

QUESTION EIGHT

Discuss the two digestive enzymes, their sources and functions. **(5 Marks)**

SECTION B: ESSAY QUESTIONS (30 MARKS)

QUESTION NINE (15 MARKS)

With the aid of diagrams discuss the excretory organs in invertebrates and vertebrates. (15 Marks)

QUESTION TEN (15 MARKS)

With the aid of labeled diagrams describe the respiratory organs in different animals. (15 Marks)

QUESTION ELEVEN (15 MARKS)

By citing examples compare and contrast between open and closed circulatory system. (15 Marks)