



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR
FOURTH YEAR FIRST SEMESTER
MAIN EXAMINATIONS

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIO-RESOURCE
CONSERVATION AND MANAGEMENT**

COURSE CODE: SZL 416

COURSE TITLE: ENVIRONMENTAL PHYSIOLOGY

DATE: 15TH July, 2021

TIME: 2:00 – 4:00 p.m.

INSTRUCTIONS TO CANDIDATES

Answer Question one (1) and any other two (2) Questions. Question one is compulsory and carries 30 marks, the other Questions carry 20 marks each.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

QUESTION ONE

- a) Classify animals into two groups based on their temperature regulation. (4 Marks)
- b) Describe the process of aerobic respiration. (4 Marks)
- c) Define the term diapause and its causes. (4 Marks)
- d) What is a biological rhythm? (4 Marks)
- e) Highlight four reasons of migration in animal kingdom. (4 Marks)
- f) State four advantages of a biological clock. (4 Marks)
- g) Enumerate two adaptations of desert animals. (4 Marks)
- h) Match the following metabolic wastes against the type of chemical reactions that produce them. (4 Marks)

Metabolic Waste

Carbon dioxide
Salts
Urea
Water

Type of chemical reactions

QUESTION TWO

- a) Discuss six physiological functions of kidneys. (12 Marks)
- b) Write explanatory notes on the following:-
 - i. How hibernation works. (4 Marks)
 - ii. Artificial kidney (4 Marks)

QUESTION THREE

- a). Discuss the diverse animal defense mechanisms against predators and enemies. (12 Marks)
- b) Describe the main types of osmoregulation in animals. (8 Marks)

QUESTION FOUR

a). What is:-

i. Guttation (3 Marks)

ii. Transpiration (3 Marks)

b) Discuss the structure of the skin as an excretory organ. (14 Marks)

QUESTION FIVE

a) Explain the various mechanisms of controlling the loss and gain of heat in animals. (12 Marks)

b) Outline four characteristics of respiratory organs. (8 Marks)