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**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

FOURTH YEAR 1ST SEMESTER

MAIN EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN BIORESOURSE

COURSE CODE: SZL 416

COURSE TITLE: ENVIRONMENTAL PHYSIOLOGY

DATE: 7TH DECEMBER 2023

TIME: 8.00 - 10.00 AM

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: 3 Hours

Question 1

- a. With reference to the cabbage white butterfly, explain diapause (3 Marks)
- b. State properties of brown fat that adapt it to its function (3 Marks)
- c. Define terms used in expressing metabolic rates and give reasons for measuring it (3 Marks)
- d. State two advantages and one disadvantage of homeothermy (3 Marks)
- e. Define damping in biological rhythms and give three reasons that give rise to it. (3 Marks)
- f. State four harmful effects of hypothermia to organisms (3 Marks)
- g. Explain Bohr and Haldane effects (3 Marks)
- h. Explain the difference in the P_{50} of fetal and adult haemoglobin (3 Marks)
- i. State functions of excretory organs (3 Marks)
- j. State any three adaptations of freshwater fish for osmoregulation (3 Marks)

Question 2

State the functions of excretory organs and discuss osmoregulatory adaptations in desert animals (20 Marks)

Question 3

Give reasons of measuring metabolic rate of animals (20 Marks)

Question 4

Discuss any five respiratory pigments (20 Marks)

Question 5

With reference to the 4'clock plant, Poorwill and Palolo worm, discuss biological rhythms. (20 Marks)