



THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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MAIN EXAMINATION

JANUARY – APRIL 2022

FACULTY OF SCIENCE

DEPARTMENT OF BIOLOGY

REGULAR PROGRAMME

BIO 414: ADVANCED ANIMAL PHYSIOLOGY

Date: APRIL 2022

Duration: 2 Hours

INSTRUCTIONS: Answer Question ONE and any TWO Questions

1. a) Describe role of lungs in mammalian buffer system **(5 Marks)**
 - b) Explain the feedback mechanism in
 - i. blood-sugar-regulation **(3 Marks)**
 - ii. osmoregulation **(2 Marks)**
 - c) Describe the mechanism of enzyme control **(5 Marks)**
 - d) Describe the mammalian synaptic transmission **(5 Marks)**
 - e) Give the myocardial role of “Gate keeper” node in systole **(5 Marks)**
 - f) Explain physiological role of ultrafiltration in urine formation **(5Marks)**
2. Tricarboxylic acid cycle is both catabolic and anabolic process. Discuss **(20 Marks)**
3. Describe the sliding filament theory of muscle contraction **(20 Marks)**
4. Illustrate the simple reflex arc **(20 Marks)**
5. Discuss the adaptive features of human body for hearing and balance **(20 Marks)**

END