



“Investing in Africa’s future”

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

NAAS 211: AGRICULTURAL BIOCHEMISTRY

END OF SECOND SEMESTER FINAL EXAMINATIONS

MAY 2021

LECTURER: DR. S. CHAKEREDZA

DURATION: 7 HOURS

INSTRUCTION

Choose and Answer **ONE** question Only

All Questions Carry Equal Marks (100)

Question 1

- a. List the nutrients and their functions for a cell to be productive. [20]
- b. Draw a simplified diagram of an animal cell. Label the following: cytoplasm, smooth endoplasmic reticulum, rough endoplasmic reticulum, mitochondria, nucleus, nuclear envelope, nucleolus. [35]
- c. Compare the animal and the plant cell. [15]
- d. Define the primary, secondary, tertiary and quaternary structures of a protein molecule. [30]

Question 2

- a. Give a definition of an enzyme and its function. [10]
- b. What factors influence enzyme function? [10]
- c. In enzyme inhibition define and explain reversible and irreversible inhibition. [25]
- d. What are the general functions of proteins? [20]
- e. Define and explain the roles of DNA, mRNA, and tRNA. [15]
- f. Define and explain the essential and non-essential amino acids. [20]

Question 3

- a. In the process of glycolysis what are the end-products? [20]
- b. What are the end-products of the Krebs or Citric acid cycle? [20]
- c. Describe photosynthesis, its importance and the linkage with climate change. [15]
- d. List the five nitrogen bases found in nucleotides. [15]
- e. In metabolism list and explain the key pathways. [30]

END OF EXAMINATION PAPER