



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya

Tel: +254(0) 799 529 958, +254(0) 799 529 959, + 254 (0) 712 524 293,

Website: info@must.ac.ke Email: info@must.ac.ke

University Examinations 2024/2025

FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE CERTIFICATE IN AGRICULTURE

AAC: BIOCHEMISTRY

DATE: DECEMBER 2024

TIME: 1½ HOURS

INSTRUCTIONS: Answer question *one* and any other *two* questions

QUESTION ONE (30 MARKS)

- a) State three symptoms of a crop with phosphorous deficiency (3marks)
- b) Highlight three major roles of water in a cell (3marks)
- c) Carbohydrate is an organic carbon molecule. Write its equation (3marks)
- d) Describe the formation of the primary structure and secondary structure of proteins (4marks)
- e) State two major functions of zinc in an animal (2marks)
- f) Highlight two major differences between fat soluble and water-soluble vitamins (4marks)
- g) Differentiate between complex and derived lipids. Give two examples in each (4marks)
- h) State two functions of vitamin B1 in an animal (2marks)
- i) Draw the structure of the sugar that is found in the DNA (3marks)
- j) State two functions of the glycocalyx (2marks)

QUESTION TWO (15 MARKS)

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- a) Draw a well labeled diagram of a plant cell. (10 marks)
- b) State the functions of five organelles named in (a) above. (5 marks)

QUESTION THREE (15 MARKS)

- a) State five importance of studying biochemistry in agriculture. (6 marks)
- b) Discuss the role of primary nutrients (NPK) on crop production. (9 marks)

QUESTION FOUR (15 MARKS)

- a) Giving examples, explain the classification of carbohydrates (10 marks)
- b) Explain the properties of carbohydrates (5 marks)