



UNIVERSITY OF EMBU

2016/2017 ACADEMIC YEAR

SECOND SEMESTER EXAMINATION

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, RANGE MANAGEMENT, BACHELOR OF SCIENCE IN MANAGEMENT OF AGRICULTURAL ECOSYSTEMS AND ENVIRONMENTS, BACHELOR OF SCIENCE IN HORTICULTURE AND BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION.

ABC101: BIOCHEMISTRY

DATE: APRIL 7, 2017

TIME: 2:00-4:00PM

INSTRUCTIONS:

Answer Question ONE and ANY other TWO Questions

QUESTION ONE:

- a) Discuss the uses of nucleotides (5 Marks)
- b) Enzymes are protein in nature. Explain. (5 Marks)
- c) Explain why hexose monophosphate pathway is important for actively developing cells. (5 Marks)
- d) Nucleic acids have unique properties. Explain. (5 Marks)
- e) Polysaccharides are classified using different criteria. Discuss. (5 Marks)
- f) Explain why respiration is important in all living organisms. (5 Marks)

QUESTION TWO:

- a) A group of undergraduate student from University of Embu are investigating on amino acids and want your assistance in classifying the amino acids they have isolated from different sources. Explain to them the classification of amino acids based on the composition of the side chain (16 Marks)

- b) Discuss the methods they can use to differentiate aromatic amino acids and those containing an indole ring. (4 Marks)

QUESTION THREE:

- a) Lipids have a wide application in nature. Explain (10 Marks)
- b) Lipids are classified based on their chemical composition. Discuss. (10 Marks)

QUESTION FOUR:

Explain why most living organisms' normal activities would be interrupted in absence of proteins in their systems. (20 Marks)

QUESTION FIVE:

Succulent plants have a special type of carbon dioxide (CO₂) fixation. Discuss. (20 Marks)

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