



## **UNIVERSITY OF EMBU**

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**2017/2018 ACADEMIC YEAR**

**SECOND SEMESTER EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN  
HORTICULTURE**

**ABC101: BIOCHEMISTRY**

**DATE: APRIL 4, 2018**

**TIME: 2:00 – 4:00 PM**

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**INSTRUCTIONS:**

**Answer Question ONE and ANY Other TWO Questions.**

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**QUESTION ONE (30 MARKS)**

- a) Discuss the classification of compound proteins. (5 marks)
- b) Lipoproteins have wide applications in living organisms. Discuss the statement. (5 marks)
- c) Describe the physical-chemical structure of nucleic acids. (5 marks)
- d) You have been provided with two unlabeled amino acids. One is assumed to have an aromatic ring and the other an indole ring. Describe a procedure that would differentiate the two. (5 marks)
- e) Water has unique qualities that make it important for all living organisms. Explain. (5 marks)
- f) Explain why respiration is important in all living organisms. (5 marks)

**QUESTION TWO (20 MARKS)**

Knowledge on enzymes is necessary for effective food processing in horticulture. Discuss.

(20 marks)

**QUESTION THREE (20 MARKS)**

Many grasses including sugar cane, maize and sorghum have a unique process of CO<sub>2</sub> fixation. Justify this statement.

(20 marks)

**QUESTION FOUR (20 MARKS)**

Explain in details why it is important to have amino acids in every diet.

(20 marks)

**QUESTION FIVE (20 MARKS)**

a) The protein molecule interferon (IFN) has wide applications. Discuss this statement.

(10 marks)

b) Discuss the classification of proteins on the basis of their solubility.

(10 marks)

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