
CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOLOGY**

BOTA 473: PLANT BIOCHEMISTRY

STREAMS: B.SC.(BIOL,CHEM) Y4S1

TIME: 2 HOURS

DAY/DATE: THURSDAY 13/12/2018

11.30 A.M – 1.30 P.M

INSTRUCTIONS:

- **Answer ALL questions in section A and any other two in section B**
- **Do not write anything on the question paper**
- **Use illustrations where appropriate to enhance your answers**

SECTION A (30 MARKS)

1. (a) State the structural differences between ribose and 2 –deoxyribose. [1 mark]
(b) Citing one example in each case, explain four general properties of biomolecules. [4 marks]
2. Study the formula below and answer the questions that follow.

- (a) Identify the biomolecules represented by the formula. [1mark]
(b) Distinguish between:
(i) Peptides and proteins [2 marks]
(ii) Essential and non essential fatty acids. [2 marks]

3. With the aid of sketches, and giving an example of each, explain the difference between an aldehyde and a ketose. [5 marks]
4. With an examples, illustrate the cyclic structure of biomolecules. [5 marks]
5. (a) Illustrate bimolecular organization. [5 marks]
(b) Name the elements of which all biomolecules are composed. [1 mark]
6. Explain briefly the properties of water that qualifies it to be referred to as the “solvent of life”. [5 marks]

SECTION B (40 MARKS)

7. Discuss the importance and ecological role of terpenoids. [20 marks]
 8. Discuss the structures of the following molecules; [20 marks]
 - (i) Triglycerides
 - (ii) Phospholipids
 9. Discuss the active site of enzymes and models of enzyme-substrate. [20 marks]
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