

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF BACHELOR OF SCIENCE
IN BIOCHEMISTRY

BIOC 100: INTRODUCTION TO BIOCHEMISTRY AND BIODIVERSITY

STREAMS: BSC (BIOCHEM)

TIME: 2 HOURS

DAY/DATE: MONDAY 09/12/2019

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- Answer question ONE and any other TWO questions
- Do not write on the question paper

QUESTION ONE

- (a) (i) Define biochemistry and state any TWO of its major achievements to science and medicine. [3 marks]
- (ii) Describe the 2 major types of fatty acids giving an example of each [2 marks]
- (b) (i) Describe structural hierarchy in the molecular organization of cells [3 marks]
- (ii) Giving examples, distinguish between nucleotide and nucleoside [2 marks]
- (c) (i) Define the following terms and state their significance: [4 marks]
- (I) Biodiversity
- (II) Extinction
- (ii) State the current single greatest threat to biodiversity. [1 mark]
- (d) Sponges (phylum porifera) are the simplest of all animals. Describe (5) unique features of sponges. [5 marks]
- (e) List major functions of carbohydrates in living organisms. [5 marks]
- (f) (i) Mention two major clades of annelids [2 marks]
- (ii) Differentiate between angiosperms and gymnosperms [2 marks]

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- (iii) State the type of bond which link amino acids to form proteins [1 mark]

QUESTION TWO

- (a) Discuss the various levels of protein structure [8 marks]
(b) Describe the significance of protein in an animal body [6 marks]
(c) Explain the three levels of biological diversity [6 marks]

QUESTION THREE

- (a) Outline the functions of nucleotides [4 marks]
(b) Describe the biological functions of lipids [4 marks]
(c) (i) State four key adaptations for life on land that distinguish the main lineages of the Plant Kingdom. [4 marks]
(ii) Briefly describe the evolutionary history of the Plant Kingdom [8 marks]

QUESTION FOUR

- (a) Briefly describe two most important mass extinctions [10 marks]
(b) Explain the major cause of loss of biodiversity [10 marks]
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