

(supplimntary paper)

TECHNICAL UNIVERSITY OF MOMBASA
DEPARTMENT OF ENVIROMENT AND HEALTH
DIPLOMA IN COMMUNITY HEALTH AND HIV MANAGEMENT

ABT 2101: STRUCTURES OF BIOMOLECULES

SERIES: SPECIAL SUPPLEMENTARY 2017

TIME: 2 HOURS

INSTRUCTIONS

Answer question ONE (compulsory) and any other TWO questions

1a, Define the following terms

i ,Anomers 2 marks

ii , Optical activity 2 marks

iii ,Rancidity 2 marks

iv, Ester compound 2 marks

b)i Differentiate homopolysaccharides from heteropolysaccharides. 4 marks

ii , State four physical properties of monosaccharide. 4 marks

c

i, Outline the general structure of amino acids 2marks

ii,Using the structure in b (i) illustrate the formation of a peptide bond 4 marks

iii State two characteristic of amino acids at isoelectric point 2 marks

d,

i, Using the structure of glycerol and the general formula of fatty acids illustrate the formation of a triglyceride 4 marks

ii, Differentiate simple glycerides from mixed glycerides 4 marks

2

a, Using the structure of glucose illustrate the formation of a (1,4) glucosidic bond 4 marks

b

i, Give the chemical structure of amylose and amylopectin components of starch. 5 marks

ii, Explain the differences between amylose and amylopectin components of starch 6 marks

3

a, Differentiate essential amino acids from non essential amino acids 5 marks

b, State the eight essential amino acids 4 marks

c, Explain the three nutritional classes of proteins and give two examples in each. 6 marks

4

a, Illustrate with diagrams and explain the four structures of proteins 12 marks

b , Explain why proteins are referred to as nitrogenous compounds 3 marks

5

a , Differentiate between saturated and non saturated fatty acids and give two examples in each. (6 marks)

b, Explain the classification of carbohydrates 9 marks