



“Investing in Africa’s future”

**COLLEGE OF HEALTH, AGRICULTURE AND NATURAL
SCIENCES**

NAAS 211: AGRICULTURAL BIOCHEMISTRY

END OF SECOND SEMESTER FINAL EXAMINATIONS

MAY/JUNE 2020

LECTURER: MR. P. B. MUVHURINGI

DURATION: 48 HRS

INSTRUCTION

Choose and Answer **ONE** question Only

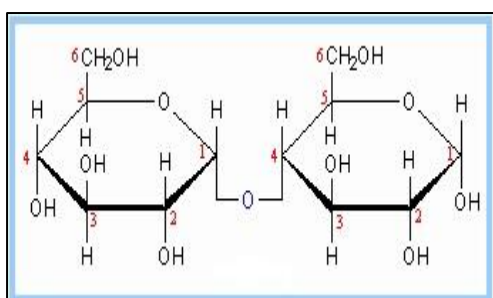
All Questions Carry Equal Marks (100)

Question 1

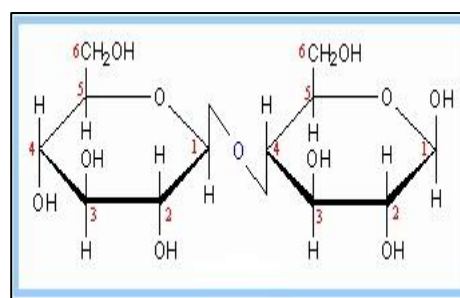
a. Explain why amylose is less soluble in water than amylopectin. [5]

b. Compare and contrast the two carbohydrates below: [25]

Carbohydrate 1



Carbohydrate 2



c. Describe the structure of DNA in relation to its functions. [30]

d. Giving examples, describe a situation which leads to formation of an alpha, beta glycosidic bond. [10]

e. Amino acids are the monomers of proteins. Describe how the structure of each amino acid influences how the protein functions. [30]

Question 2

a. Explain why carbohydrates are important in the formation of DNA and RNA.

[5]

b. Describe the functions of carbohydrates in living organisms.

[25]

c. Explain why Long DNA helices with a high Guanine-Cytosine content have stronger-interacting strands, while those with high Adenine-Thymine content have weaker-interacting strands. [10]

d. Explain why proteins are important in eukaryotes. [30]

e. Describe the formation of DNA from linked nucleotides and explain how the structure of DNA is suited for its functions. [30]

Question 3

a. Explain why the bonding of bases in DNA is weaker compared to the glycosidic bonding in carbohydrates. [5]

b. Name and explain situations which leads to breakdown of complex carbohydrates and to the formation of complex carbohydrates. [5]

c. Discuss the role of nucleic acids in eukaryotes. [30]

d. Describe the classification of amino acids. [30]

e. Discuss the structure for DNA and RNA. [30]

END OF EXAMINATION PAPER