

1<sup>ST</sup> SEM. 2016/2017

## UNIVERSITY OF SWAZILAND

### RE-SIT/SUPPLEMENTARY EXAMINATION PAPER

**PROGRAMME:** B. Sc. AGRON.; B.Sc. ANIMAL SCIENCE;  
B.Sc. HORT.; B.Sc. FSNT II. AND B.Sc.  
TADAM II

**COURSE CODE:** AS 202/ASC 203

**TITLE OF PAPER:** BIOCHEMISTRY

**TIME ALLOWED:** TWO (2) HOURS

**INSTRUCTIONS:** ANSWER ANY 4 QUESTIONS.

**THIS PAPER SHOULD NOT BE OPENED UNTIL THE CHIEF  
INVIGILATOR HAS GRANTED PERMISSION.**

**QUESTION 1**

Explain and illustrate the production of amino acids from the following:

- a. Pyruvate (6 Marks)
- b. Glutamate (8 Marks)
- c. Ketoglutarate (11 Marks)

**QUESTION 2**

Explain and illustrate the significance of hydrogen bonds and glycoside bonds in water and polysaccharides respectively

(25 Marks)

**QUESTION 3**

Describe and illustrate fibre components and discuss its significance in nutrition and the textile industry.

(25 Marks)

**QUESTION 4**

Compare and contrast the following:

- a. Catabolism and anabolism (6 Marks)
- b. RNA and DNA (8 Marks)
- c. Wax and triacylglycerides (4 Marks)
- d. Reversible and irreversible enzyme inhibitor (4 Marks)
- e. Reducing and non - reducing sugars (3 Marks)

**QUESTION 5**

- a. Identify and describe the biomolecule shown in Figure 1. **(5 Marks)**
- b. Explain and illustrate a polynucleotide produced from the biomolecule shown in Figure 1. **(12 Marks)**
- c. Describe any four major differences between the nucleic acid of the virion and the nucleic acid of the animal cell **(8 Marks)**

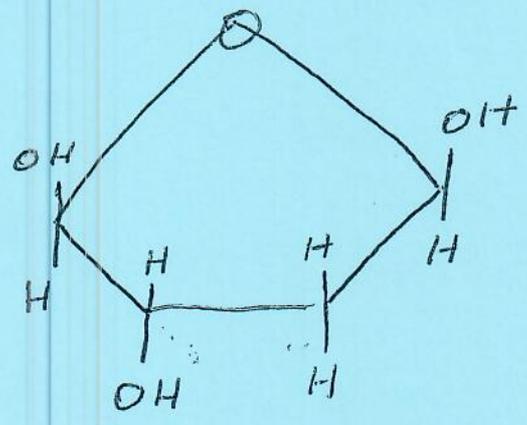


Figure 1