



1ST SEM. 2013/2014

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

PROGRAMME: B. Sc. AGRON.; B.Sc. ANIMAL SCIENCE; B.Sc. HORT. & B.Sc. FSNT II.

COURSE CODE: AS 202

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.

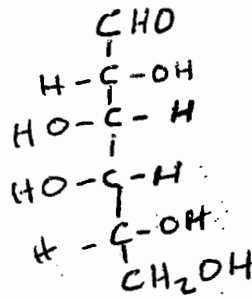
QUESTION 1

Outline and illustrate the steps in the biosynthesis of α -Ketoglutarate from pyruvate.

(25 Marks)**QUESTION 2**

Using structures to illustrate your answers, describe the differences between the following:

- Cis* and *trans* fatty acids (6 Marks)
- Essential amino acid and essential fatty acid (7 Marks)
- De-oxy sugar and amino sugar (12 Marks)

QUESTION 3**Figure 1**

- Identify the molecule shown in Figure 1 (2 Marks)
- Identify and write the structure of an epimer of the molecule (5 Marks)
- Identify and illustrate the anomeric pair from the molecule presented in Figure 1 (8 Marks)
- Identify and illustrate a disaccharide produced by Figure 1 and its epimer (10 Marks)

QUESTION 4

Write short notes about the following

- a. Catabolism **(7 Marks)**
- b. Hydrophobic amino acids **(4 Marks)**
- c. Carbamoyl Phosphate **(5 Marks)**
- d. Lipoproteins **(9 Marks)**

QUESTION 5

a) Using structures to illustrate your answer describe the following:

- i) a protein hormone **(6 Marks)**
- ii) a catecholamine **(6 Marks)**

b) Describe with illustrations the major differences between:

- i) Polypeptide and oligosaccharides **(8 Marks)**
- ii) Triacylglyceride and wax **(5Marks)**