



**1<sup>ST</sup> SEM. 2010/2011**

**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**

Describe and illustrate the di-peptide formed by the following amino acids: Alanine - Valine - Cystein

(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**

Describe and illustrate two examples of membrane forming lipids.

(25 Marks)

**QUESTION 4**

Discuss and illustrate the synthesis of pentose sugars from glucose

(25 Marks)

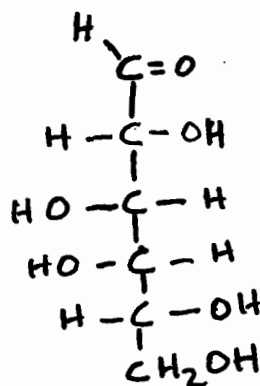
**QUESTION 5**

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)