



**1<sup>ST</sup> SEM. 2014/2015**

**UNIVERSITY OF SWAZILAND**

**FINAL 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 with illustrations anabolism of amino acids from metabolites of glucose catabolism.

**(25 Marks)****QUESTION 2**

Giving Two example in each case, describe and illustrate the following

Biomolecules:

a. Maltose type disaccharides;

**(6 Marks)**

b. Water soluble vitamins;

**(6 Marks)**

c. Essential amino acids;

**(6 Marks)**

d. Steroids;

**(7 Marks)****QUESTION 3**

Describe with illustrations the major differences between:

a. Polypeptide and oligosaccharides;

**(6 Marks)**

b. Triacylglyceride and wax;

**(7 Marks)**

c. Steroid lipids and Eicosanoids;

**(6 Marks)**

d. Nucleotide tri phosphate and nucleoside tris phosphate;

**(6 Marks)****QUESTION 4**

Using structures to illustrate your answer describe the following:

a. a nucleotide;

**(8 Marks)**

b. a phospholipid;

**(6 Marks)**

c. a fat soluble vitamin;

**(6 Marks)**

d. a pentose sugar;

**(5 Marks)**

**QUESTION 5**

Briefly discuss and illustrate:

- a. hydrogen bonding in water;
- b. maintenance of protein tertiary structure;
- c. the urea cycle in farm animals;

**(5 Marks)**

**(10 Marks)**

**(10 Marks)**