



1ST SEM. 2018/2019

UNIVERSITY OF ESWATINI

MAIN 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 energy producing steps in the TCA cycle. **(25 Marks)**

QUESTION 2

Explain and illustrate the significance of glycosidic bonds in carbohydrates and Hydrogen bonds in water molecules. **(25 Marks)**

QUESTION 3

Describe and illustrate 5 major differences between eukaryotic and prokaryotic cells. **(25 Marks)**

QUESTION 4

Using structures to illustrate your answers, compare and contrast the following:

- a. Waxes and triacylglycerides **(6 Marks)**
- b. Sugar anomers and sugar epimers **(9 Marks)**
- c. Catecholamine and eicosanoids **(10 Marks)**

QUESTION 5

- a) Identify and briefly describe the biomolecules shown in Figure 1 and Figure 2. **(5 Marks)**
- b) Describe and illustrate a disaccharide produced by reaction of A β -D anomer of Figure 1 with α -D glucose **(10 Marks)**
- c) Explain and illustrate the peptide formed when the biomolecule in Figure 2 reacts with serine. **(10 Marks)**

25

Figure 1

Figure 2