



1ST SEM. 2015/2016

UNIVERSITY OF SWAZILAND

SUPPLEMENTARY EXAMINATION PAPER

**PROGRAMME: B. SC. AGRON. II; B.SC. ASC. II; BSC.
 ASD. II; B.SC. FSNT II & B.SC. HORT. 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

- a) Explain the major differences between ribonucleic acid and deoxyribonucleic acid (16 Marks)
- b) Discuss and illustrate the formation of hydrogen bonds in water molecules (9 Marks)

QUESTION 2

Describe, illustrate and state the natural sources of the following biomolecules:

- a) β ,D-Galactosamine (5 Marks)
- b) Cholecalciferol (5 Marks)
- c) Adenosine Tri-phosphate (5 Marks)
- d) Methionine (5 Marks)
- e) 2, Deoxy β -D-ribose (5 Marks)

QUESTION 3

- a) Describe and illustrate any **three** metabolites produced during the Krebs' Cycle (15 Marks)
- b) Using structures to illustrate your answer, give **two** epimers of D-Glucose (10 Marks)

QUESTION 4

Explain and illustrate the major differences between the following biomolecules:

- a) *Trans* and *cis* fatty acids (7 Marks)
- b) A wax and a triacylglyceride (9 Marks)
- c) Nucleoside tri-phosphate and nucleoside tris-phosphate (9 Marks)

QUESTION 5

Describe and illustrate the biosynthesis of ascorbic acid from glucose in animals. (25 Marks)