



2ND SEM. 2005/2006

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: **DIPLOMA IN AGRICULTURE I,
DIPLOMA IN AGRICULTURE
EDUCATION YEAR I, REMEDIAL
AGRICULTURE AND REMEDIAL
AGRICULTURE EDUCATION**

COURSE CODE: **APH 103**

TITLE OF PAPER: **BIOCHEMISTRY**

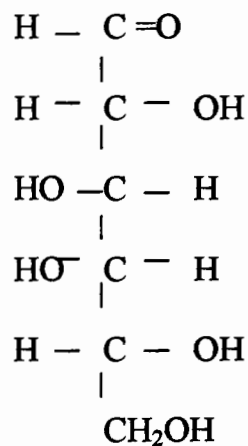
TIME ALLOWED: **TWO (2) HOURS**

INSTRUCTIONS: **ANSWER ANY 4 QUESTIONS.**

**THIS PAPER MAY NOT BE OPENED UNTIL THE CHIEF
INVIGILATOR HAS GRANTED PERMISSION.**

QUESTION 1

a) Identify the biomolecule given below: **(2 Marks)**



b) Name and write a structure of an epimer of the biomolecule that can react with it to form a disaccharide. **(8 Marks)**

c) Illustrate the condensation of the biomolecule (a) and its epimer to form an identified disaccharide and name the specific cells of the cow where this disaccharide is formed **(15Marks)**

QUESTION 2

a) Discuss and illustrate hydrogen bonding of water molecules **(10 Marks)**

b) Illustrate the structure of the Mitochondrion and list 4 metabolic processes that takes place in this organelle **(8 Marks)**

c) Explain saturated fatty acids and give 2 examples. **(7 Marks)**

QUESTION 3

Using structures to illustrate your answers, describe the major differences between eicosanoids and phospholipids **(25 Marks)**

QUESTION 4

a) Describe the processes of transcription and translation in protein synthesis **(15 Marks)**

b) What are the major differences between DNA and RNA? Present your answer in table format. **(10 Marks)**

QUESTION 5

a) Identify and discuss **THREE** main factors that affect velocity of enzyme catalyzed reactions. **(15 Marks)**

b) Briefly explain the **FOUR** different types of enzyme specificity. **(10 Marks)**