



1ST SEM. 2009/2010

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 biosynthesis of amino acids from pyruvate and alanine.

(25 Marks)

QUESTION 2

Using structures to illustrate your answers, describe the differences between the following:

- a. Waxes and triacylglycerides (10 Marks)
- b. Sugar alcohols and sugar acids (10 Marks)
- c. Glycogen and amylopectin (5 Marks)

QUESTION 3

Describe and illustrate two examples of steroid hormones.

(25 Marks)

QUESTION 4

- a. Explain the advantages of starch hydrolysis using amylase instead of HCl. (10 Marks)
- b. Discuss 5 factors affecting the rate of enzymic reaction. (15 Marks)

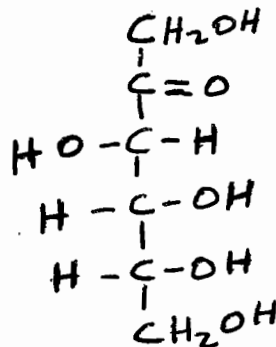
QUESTION 5

Figure 1

- a. Identify the molecule shown in figure 1 (3 Marks)
- b. Identify and write the structure of a tautomer of the molecule (6 Marks)
- c. Identify and illustrate another molecule produced by the enolization of the molecule shown in Figure 1 (6 Marks)
- d. Identify and illustrate a disaccharide produced by figure 1 and its tautomer (10 Marks)