



1st SEM. 2011/2012

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 FOUR (4) QUESTIONS.**

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QUESTION 1

Explain and illustrate the production of amino acids from the following:

- a. Pyruvate (6 Marks)
- b. Glutamate (8 Marks)
- c. Ketoglutarate (11 Marks)

QUESTION 2

Explain and illustrate the following:

- a. Production of Ribose from Glucose (15 Marks)
- b. Phospholipids (8 Marks)

QUESTION 3

Describe and illustrate the following bonds of biomolecules and also state their functions.

- a. Carbohydrate glycosidic bonds (8 Marks)
- b. Protein peptide bonds (8 Marks)
- c. Hydrogen bonds of water molecules (5 Marks)
- d. Biomolecule disulfide bonds (4 Marks)

QUESTION 4

Compare and contrast the following:

- a. Catabolism and anabolism (6 Marks)
- b. RNA and DNA (8 Marks)
- c. Saturated and unsaturated fatty acids (4 Marks)
- d. Reversible and irreversible enzyme inhibitor (4 Marks)
- e. Reducing and non - reducing sugars (3 Marks)

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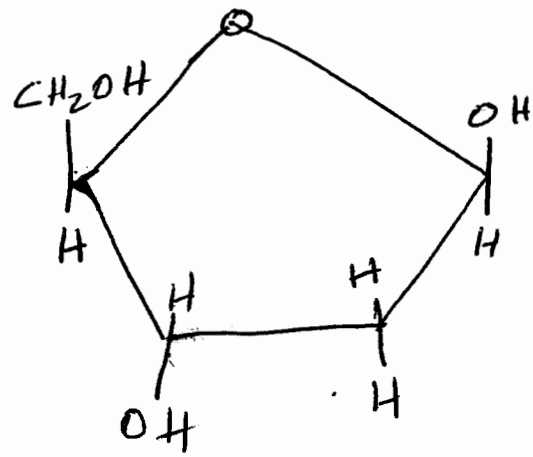


Fig 1

QUESTION 5

- a. Identify and describe the biomolecule shown in Figure 1. **(5 Marks)**
- b. Explain and illustrate a nucleotide produced from the biomolecule shown in Figure 1. **(10 Marks)**
- c. Describe briefly the biosynthesis of the nucleic acid produced by the polymers of the nucleotide formed from the biomolecule shown in Figure 1. **(10 Marks)**