



2nd SEM. 2004/2005

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

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

COURSE CODE: APH 103

TITLE OF PAPER: BIOCHEMISTRY

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY 4 QUESTIONS.

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GRANTED BY THE CHIEF INVIGILATOR**

QUESTION 1

- a). Discuss the biological functions of proteins. (10 marks)
- b). Explain the formation of peptide bonds. (10 marks)
- c). Write short notes on aromatic amino acids. (5 Marks)

QUESTION 2

- a). Distinguish essential and non-essential amino acids and give three examples for each group. (10 marks)
- b). Write notes on globular proteins. (15 marks)

QUESTION 3

- a). Discuss three functions of water in living organisms. (10 marks)
- b). Water has unusual properties that make it an ideal medium for living organisms. Discuss. (15 Marks)

QUESTION 4

Define the following terms giving examples where appropriate:

- i. Isoelectric point
- ii. Unsaturated fatty acids
- iii. Amphipathic compounds
- iv. Disaccharides
- v. Nucleic acids (25 marks)

QUESTION 5

- a). Use molecular structures to compare and contrast D-glucose and D-fructose. (5 Marks)
- b). Describe and illustrate the disaccharide formed from the combination of these two monosaccharides. Explain its importance and natural source. (10 Marks)
- c). With the aid of molecular structures, explain the classification of compounds under the D and L configurations. (10 Marks)