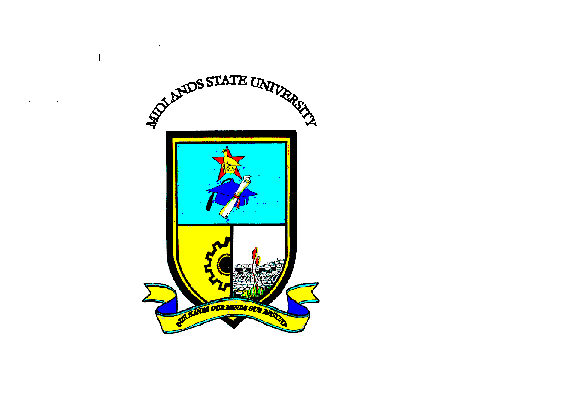
#### MIDLANDS STATE UNIVERSITY



FACULTY OF NATURAL RESOURCES MANAGEMENT AND AGRICULTURE

**AGRICULTURAL BIOLOGY**

**CODE: HACE 111**

### SESSIONAL EXAMINATIONS

**DECEMBER 2017**

**DURATION: 3 HOURS**

**EXAMINER: MS C. MUKANGA**

## INSTRUCTIONS

1. *Answer* ***all*** *questions in Section A*
2. *Answer any* ***three*** *questions from Section B*
3. *All questions carry 25 marks each*

**SECTION A**

**QUESTION 1**

1. Draw a well labelled diagram of an animal cell. **[9 marks]**
2. Describe the differences between
3. Animal and plant cells. **[8 marks]**
4. prokaryotic and eukaryotic cells  **[8 marks]**

**SECTION B**

**QUESTION 2**

Describe and explain the main characteristics of living organisms. **[25 marks]**

**QUESTION 3**

1. Describe the structure of the cell membrane.  **[10 marks]**
2. Explain the mechanisms of transport across the cell membrane. **[15 marks]**

**QUESTION 4**

Write an essay detailing the origins of life on earth. **[25 marks]**

**QUESTION 5**

Describe the theory of evolution by Charles Darwin showing how it contributes to the diversity of life on earth **[25 marks]**

**END OF EXAMINATION**