

**UNIVERSITY OF SWAZILAND**

**DEPARTMENT OF GEOGRAPHY, ENVIRONMENTAL SCIENCE AND PLANNING**

**FINAL EXAMINATION PAPER – DECEMBER, 2007**

**B Sc. 111**

**TITLE : AGRICULTURAL SYSTEMS**

**COURSE NUMBER : GEP 326**

**TIME ALLOWED : THREE (3) HOURS**

**INSTRUCTIONS : 1. THIS PAPER CONTAINS TWO (2) SECTIONS, A AND B.**  
**2. ANSWER FOUR (4) QUESTIONS.**  
**3. CHOOSE TWO (2) QUESTIONS FROM EACH SECTION.**  
**4. WHERE APPROPRIATE ILLUSTRATE YOUR ANSWER**  
**WITH EXAMPLES AND DIAGRAMS.**

**MARKS ALLOCATION: EACH QUESTION CARRIES TWENTY FIVE (25) MARKS.**

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY**  
**THE INVIGILATOR.**

**GEP 326: FINAL EXAMINATION PAPER – DECEMBER, 2007**

**SECTION A: ANSWER ANY TWO QUESTIONS**

**Question 1**

‘The application of economic principles to agricultural activities must be done very cautiously’. Discuss the relevance of this statement.

**(25 marks)**

**Question 2**

Discuss how the technological gap in agricultural productivity occurred between the advanced and developing regions.

**(25 marks)**

**Question 3**

Using examples, discuss how the principle of comparative advantage influences land uses.

**(25 marks)**

**SECTION B: ANSWER ANY TWO QUESTIONS**

**Question 4**

(a) Explain the measurement of any five weather parameters and discuss the role of each in the development process of a typical crop.

**(10 marks)**

(b) Explain the main functions of a typical Agro-meteorological service and how the functions can be applied in food production of a country.

**(15 marks)**

**(25 marks)**

**Question 5**

(a) Discuss the factors that affect the rate of evaporation and evapotranspiration, and explain how each is measured

**(15 marks)**

(b) Discuss the characteristics of extreme rainfall events and how they impact negatively on crop production.

**(10 marks)**

**(25 marks)**

**Question 6**

(a) Define agricultural drought.

**(5 marks)**

(b) Discuss any two methods that may be used to estimate and fill in the rainfall data gaps from an observed record at UNISWA weather station.

**(10 marks)**

(c) Explain how climatic conditions affect the incidence and development of crop pests and diseases.

**(10 marks)**

**(25 marks)**