



**EMBU UNIVERSITY COLLEGE**

**(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)**

**TRIMESTER EXAMINATION 2013/2014**

**SECOND YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE**  
**IN AGRICULTURE**

**ACS 204: ECOLOGY, AGROMETEOROLOGY AND CLIMATE CHANGE**

**DATE: AUGUST 11, 2014**

**TIME: 2.00 – 4.00PM**

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**INSTRUCTIONS:**

**Answer Question ONE and ANY Other TWO Questions.**

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**QUESTION ONE**

- a) Differentiate between weather and meteorology. (4 marks)
- b) Explain the physiological behavior of endotherms under extreme temperatures in an ecosystem. (6 marks)
- c) Identify THREE salt tolerance mechanisms used by crops to adapt to salinity. (4 marks)
- d) State the three major objectives of the Kyoto Protocol of the United Nations Framework Convention on Climate Change. (6 marks)
- e) Describe any TWO biological processes that take place in an ecosystem. (4 marks)

- f) Describe TWO main climatic variables measured in maritime meteorology. (2 marks)
- g) State the goals of agrometeorology? (2 marks)
- h) State the crop information obtained from Grade A and Grade B Agrometeorological Stations in Kenya? (4 marks)

### **QUESTION TWO**

- a) Explain how crops use ion selectivity as a mechanism to adapt to salinity. (6 marks)
- b) Describe the strategies that crops use to adapt to drought conditions. (14 marks)

### **QUESTION THREE**

- a) Describe the agroclimatic normals for sorghum and Lucerne grown in Embu County. (12 marks)
- b) Explain FOUR ways used to manage soil-affected soils in Kenya. (8 marks)

### **QUESTION FOUR**

- a) Explain the impacts of global warming to natural ecosystems. (10 marks)
- b) Explain how the process of climate change adaptation can be achieved in Kenya. (10 marks)

### **QUESTION FIVE**

- a) Describe the processes that define succession using the concept of climax as an ecological theory. (10 marks)
- b) Explain the causes of succession in an ecosystem. (10 marks)

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