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**KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR**  
**FIRST YEAR, FIRST SEMESTER EXAMINATION**  
**FOR THE DEGREE OF BACHELOR OF EDUCATION(ARTS)**  
**KGE 2402:CLIMATOLOGY**

Date: 8<sup>th</sup> December 2023

Time: 2:30pm-4.30pm

**INSTRUCTIONS TO CANDIDATES:**

*Use sketches and diagrams wherever they serve to illustrate an answer*

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- Differentiate between "weather change" and "climate change." (4 marks)
- Explain the changes that happen to a column of warm air near the earth's surface. (4 marks)
- Describe air circulation patterns associated with low- or high-pressure systems. (6 marks)
- Explain **four** climate controls. (8 marks)
- Discuss **two** hydrological extremes experienced in Kenya. (8 marks)

**QUESTION TWO (20 MARKS)**

- Examine the concepts of air stability and instability. (10 marks)
- Distinguish between the weather conditions at cold and warm fronts. (10 marks)

**QUESTION THREE (20 MARKS)**

Evaluate the likely impacts of climate change on the following in Kenya:

- Water resources. (8marks)
- Crop farming. (6 marks)
- Livestock keeping. (6 marks)

**QUESTION FOUR (20 MARKS)**

- Using a diagram, describe the general pressure circulation model. (10 marks)
- Describe **five** instruments used in meteorological and climatological observation. (10 marks)

**QUESTION FIVE (20 MARKS)**

- Discuss the Köppen's climate classification scheme. (10 marks)
- Describe the measurement of precipitation in a climatological station. (10 marks)