



# UNIVERSITY EXAMINATIONS

**SECOND SEMESTER 2023/2024 ACADEMIC YEAR**

**FIRST YEAR EXAMINATION FOR THE DEGREE OF  
BACHELOR OF SCIENCE IN GEOGRAPHY**

**GEOG 124: INTRODUCTION TO CLIMATOLOGY**

***STREAM: R***

***TIME: 2 HRS***

***DAY: THURSDAY [8.30A.M – 10.30A.M] DATE: 11/04/2024***

**THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES**

**PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.**



**INSTRUCTIONS: Answer question ONE and any other TWO****QUESTION ONE (30 Marks)**

- a. Define the following terms/concepts
- i. Weather and climate **(1 Mark)**
  - ii. Global warming and greenhouse effect **(2 Marks)**
  - iii. Climate change and climate Variability **(2 Marks)**
- b. List **five** advantages of an automatic weather station **(5 Marks)**
- c. Explain how the following factors regulate the climate of a given location
- i Longitude **(4 Marks)**
  - ii Altitude **(2 Marks)**
  - iii Ocean currents **(4 Marks)**
- d. Briefly describe **five** major characteristics of the troposphere **(5 Marks)**
- e. Explain how the terrestrial radiation process causes the heating and cooling of the atmosphere **(5 Marks)**

**QUESTION TWO (20 Marks)**

You have been requested by Kenya Meteorological Department to establish a meteorological station in Laikipia University for the benefit of students and farmers around the university:

- i. Giving reasons, state five key conditions which you must consider when selecting appropriate location to set up the weather station **(10 Marks)**
- ii. List any five weather instruments that the students need to purchase and indicate their function(s) **(10 Marks)**

**QUESTION THREE (20 Marks)**

- a. Outline any **five** major branches of climatology which are used to study various aspects of climate and its variability **(10 Marks)**
- b. Discuss five components of the Earth's climate systems **(10 Marks)**



**QUESTION FOUR (20 Marks)**

- a. Discuss any five factors that influence the amount of solar energy reaching the earth surface  
**(10 Marks)**
- b. With the aid of a diagram, outline five major components of the hydrological cycle  
**(10 Marks)**

**QUESTION FIVE (20 Marks)**

- a. Explain five impacts of climate change on socio economic activities of the rural communities in Kenya  
**(10 Marks)**
- b. Discuss any five adaptation strategies that you could advice rural communities in Kenya to adopt in order to build their capacity to effectively fight adverse effects of climate change  
**(10 Marks)**

