



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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## UNIVERSITY EXAMINATIONS 2023/2024

THIRD YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR  
OF EDUCATION ARTS

### EGE 3350: CLIMATOLOGY AND METEOROLOGY

DATE: APRIL 2024

TIME: 2 HOURS

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INSTRUCTIONS: Answer Question ONE and any other TWO questions.

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#### QUESTION ONE (30 MARKS)

- a) Distinguish between the following concepts:
  - i. meteorology and climatology. (2 Marks)
  - ii. climate change and climate variability. (2 Marks)
- b) Describe the relationship between pressure gradient force and wind. (6 Marks)
- c) Describe any FIVE elements that aid in describing the climate of a place. (10 Marks)
- d) Examine the different scales of atmospheric motions. (10 Marks)

#### QUESTION TWO (20 MARKS)

- a) Examine the analytic approaches used in the study of climatology. (12 Marks)
- b) Discuss the significance of the troposphere on the biosphere. (8 Marks)



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED

### QUESTION THREE (20 MARKS)

- a) Assess the anthropogenic causes of climate change. (15 Marks)
- b) Suggest any FIVE practical solutions that Kenyan government can adopt to mitigate climate change effects. (5 Marks)

### QUESTION FOUR (20 MARKS)

Write short notes on the following concepts:

- a. Land and Sea breeze (7 Marks)
- b. Katabatic winds (3 Marks)
- c. Chinook winds (3 Marks)
- d. Mountain and Valley breeze (7 Marks)

### QUESTION FIVE (20 MARKS)

Discuss the significance of climatology in the development of a nation. (20 Marks)

