

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

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

GEOG 213: ATMOSPHERIC SYSTEMS AND GLOBAL CLIMATE

STREAM: R

TIME: 2 HRS

DAY: THURSDAY [2.30 – 4.30 P.M]

DATE: 05/02/2026

THIS QUESTION PAPER CONSISTS OF TWO (2) PAGES

PLEASE DO NOT OPEN UNTIL THE INVIGILATOR SAYS SO.

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

- a) Distinguish the between the following terminologies:
 - i) Atmospheric stability and atmospheric instability (2 Marks)
 - ii) Insolation and terrestrial radiation (2 Marks)
 - iii) Continentality and maritime influence (2 Marks)
- b) Briefly explain the meaning of climate system and outline its major subsystems. (4 Marks)
- c) Using illustrations, explain the formation of convection precipitation (4 Marks)
- d) Explain any **three** factors which regulates general atmospheric circulation (6 Marks)
- e) Explain any **five** ways through which weather and climate information supports disaster risk management in Kenya (10 Marks)

QUESTION TWO (20 MARKS)

- a) Discuss **five** factors that are responsible for the climatic diversity in the Kenyan Coastal Region. (10 Marks)
- b) Giving relevant examples, examine five socio-economic impacts of prolonged droughts in East Africa (10 Marks)

QUESTION THREE (20 MARKS)

- a) Highlight **three** environmental and health consequences associated with increased greenhouse gas concentrations. (6 Marks)
- b) Describe the Thornthwaite Climate Classification System and examine three of its major limitations. (9 Marks)
- c) Giving suitable examples, discuss **five** climate mitigation strategies applicable at community level. (5 Marks)

QUESTION FOUR (20 MARKS)

- a) Discuss **five** factors which influence atmospheric humidity of a given location (10 Marks)
- b) Using a suitable diagram, clearly illustrate the hydrological cycle of Aberdares water tower (10 Marks)

QUESTION FIVE (20 MARKS)

- a) Explain **three** factors which influence the atmospheric pressure of a place (6 Marks)
- b) Outline **five** global wind systems, clearly indicating where each occurs and its climatic significance (14 Marks)