



(Knowledge for development)

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATIONS**

**2020/2021 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER**

**MAIN EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF EDUCATION**

**ARTS**

**COURSE CODE: GEO 421**

**COURSE TITLE: CLIMATOLOGY**

**DATE: JULY 13, 2021**

**TIME: 2 – 4 PM**

**TIME: 2 HOURS**

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### **INSTRUCTIONS TO CANDIDATES**

- 1. Answer Question ONE (Q1) Compulsory**
- 2. Answer any other TWO (2) Questions**
- 3. Use illustration where appropriate**

**This paper consists of 2 printed pages. Please Turn Over.**

### QUESTION 1

- a. Define the following terms as applied in climate studies:
- i. Drought (2 marks)
  - ii. Seasonality (2 marks)
  - iii. Albedo (2 marks)
- b. Explain the role of oceans on the global atmospheric energy exchange. (8marks)
- c. Identify ONE major source of each of the following and explain their main contribution to global climate change.
- i. Atmospheric dust (3 marks)
  - ii. Methane (3 marks)
- d. Describe the Cyclonic and Anti-Cyclonic pressure systems (10 marks)

### QUESTION 2

- a. Describe the process involved in Greenhouse Effect. (8 marks)
- b. Describe different ways in which global tectonic movements could contribute to global climate change. (12 marks)

### QUESTION 3

Describe the three longitudinal global circulation cells and explain their influence on temperature and precipitation on different parts of the world. (20 marks)

### QUESTION 4

Citing examples from across the world, describe the mechanisms with which the following contribute to aridity and desertification:

- a. Coriolis Effect (4 marks)
- b. Orography (5 marks)
- c. Ocean currents (5 marks)
- d. Sinking air masses (6 marks)

### QUESTION 5

Discuss the potential impact of climate change on:

EITHER

Pastoralism in East Africa

(20 marks)

OR

Energy resources in Africa

(20 marks)