



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2013/2014

**FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE CLIMATE CHANGE AND
DEVELOPMENT WITH INFORMATION TECHNOLOGY**

(MAIN CAMPUS)

NCA 105: INTRODUCTION TO CLIMATE DYNAMICS

Date: 23rd July 2014

Time: 2.30 - 4.30pm

INSTRUCTIONS:

- Answer question ONE and ANY other TWO Questions
- Sketch maps and diagrams should be used wherever appropriate



NCA 105: INTRODUCTION TO CLIMATE DYNAMICS

- 1 (a). Differentiate between the following:
 - (i) Weather and Climate [4 marks]
 - (ii) Eccentricity and Obliquity [4 marks]
- (b). Outline the variables that govern the climate. [6 marks]
- (c). Using an illustration, describe the temperature variations between the layers of the atmosphere. [10 marks]
- (d). Explain the main categories of biogeochemical cycles. [6 marks]
2. (a) Describe the main components of the Earth's climate system. [8 marks]
- (b) Explain the interactions that can occur among any pair of the Earth's climate system. [12 marks]
3. Discuss any FIVE ways through which anthropogenic activities influences biogeochemical cycles and climate dynamics. [20 marks]
4. (a) Differentiate between internal forcings and external forcings [6 marks]
- (b) Explain the greenhouse effect and its contribution to the climatic variations in the recent times. [12 marks]
5. Explain the contributions of the following to natural climatic variations.
 - (a) Volcanic eruptions [10 marks]
 - (b) Radioactive forcings [10 marks]
6. Describe the link between carbon cycles and climate. [20 marks]