



# MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

FACULTY OF AGRIBUSINESS AND COMMERCE

DEPARTMENT OF AGRICULTURE ECONOMICS

AND

DEVELOPMENT

ECONOMETRICS I

Code: HACE 229

SESSIONAL EXAMINATIONS

SEPTEMBER 2021

DURATION: 3 HOURS

EXAMINER: MR. G.K. MUNJOMA

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## **INSTRUCTIONS**

1. Answer ANY Four (4) questions
2. Be concise and clear
3. Start a new question on a fresh page
4. Total marks 100

### QUESTION 1

- (a) Distinguish between Climate variability and climate change. [4]
- (b) Describe techniques that can be used to deduce past climate variability trends. [5]
- (c) Discuss in detail the internal and external drivers of climate variability. [16]

### QUESTION 2

- (a) What are the five major components of a climate system? [5]
- (b) Explain how each component influences climate. [20]

### QUESTION 3

Discuss the significance of the following to the earth's energy balance – hence global climates:

- (i) Atmospheric windows [5]
- (ii) Ozone layer [5]
- (iii) Greenhouse gases [5]
- (iv) Deforestation [5]
- (v) Volcanic eruptions [5]

### QUESTION 4

Vulnerability to climate change and climate variability is a function of **exposure**, **sensitivity** and the **Adaptive Capacity** of a country. Discuss. [25]

### QUESTION 5

Write an essay on strategies for adaptation and mitigation that are being implemented in Zimbabwe to ensure food security in the face of observed and projected climate change indicators. [25]

**QUESTION 6**

- (a) What is the IPCC and what contributions is it making to our understanding of the Science of climate change, global warming and the impacts thereof? [13]
- (b) What are the major highlights and recommendations for Policymakers in the **6th Assessment Report (AR6)** released by **Working Group 1** of the IPCC? [12]

**END OF EXAMINATION**