



**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENVIRONMENTAL SCIENCE**

**DEPARTMENT OF ENVIRONMENTAL SCIENCE**

**MASTER OF SCIENCE IN CLIMATE CHANGE AND SUSTAINABLE  
DEVELOPMENT**

**CLIMATE CHANGE AND ECOSYSTEM SERVICES**

**ECS 5201**

**Final Examination Paper**

**March 2024**

This examination paper consists of 2 pages

**Time Allowed: 3 hours**

**Total Marks: 100**

**Special Requirements: None**

**Examiner's Name: Dr A Mabidi**

**INSTRUCTIONS**

1. Answer any **FOUR** questions
2. Each question carries 25 marks

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
1.	25
2.	25
3.	25
4.	25
5.	25
6.	25
<b>TOTAL</b>	<b>100</b>

1. Explain the effect of local species extinctions due to climate change on the process of energy flow in ecosystems.
2. “Nature based solutions are actions that serve to protect, manage and restore ecosystems for the simultaneous benefit of both people and nature.” Describe with examples any five (5) successful nature based solutions.
3. With the aid of specific examples, explain how healthy ecosystems contribute to adaptation to climate hazards and climate change.
4. Explain how ecosystem services can help mitigate climate change.
5. Discuss the effects of climate change on the hydrologic cycle.
6. “Climate change affect ecosystems and their services, thus adaptation measures that reduce negative impacts and maintain ecosystem functions are needed.” Discuss this statement.