



GWANDA STATE UNIVERSITY
FACULTY OF ENGINEERING AND ENVIRONMENT
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL SCIENCE

ENVIRONMENTAL CHEMISTRY

NES 2104

Main Examination Paper

June 2024

This examination paper consists of 2 pages

Time Allowed: 3 hours

Examiner's Name: Mr. T. Musisi

INSTRUCTIONS

1. Answer any **FOUR** questions
2. Each question carries 25 marks.
3. Credit will be given to answers that are clear, illustrated, concise, and grammatically well-constructed.

- 1a) i) Name the region of the atmosphere which contains ozone layer [1]
- ii) Name two chemicals responsible for acid rain [2]
- iii) Identify any three gases which are responsible for greenhouse effect [3]
- iv) What are carbon sinks? [2]
- b) Explain the following concepts
- i. Global warming [3]
- ii. Eutrophication [3]
- iii. Ozone depletion [3]
- c) Examine the environmental impacts of each of the concepts in (b) [8]
2. 'Environmental chemistry is part of the solution to climate change and not just part of the problem'. Discuss [25]
- 3a) Describe the greenhouse effect and its consequences on the environment [10]
- b) Account for the contribution of three major greenhouse gases to the greenhouse effect [15]
- 4a) List 10 principles of green chemistry [10]
- b) Justify the view that green chemistry offers a strategic pathway to build a sustainable future [15]
- 5a) Describe causes and effects of environmental pollution by energy industry [15]
- b) Discuss some mitigation measures to environmental pollution [10]
- 6a) Explore the major characteristics of the four environmental segments [16]
- b) What are the implications of environmental chemistry on any three environmental issues? [9]

THE END