



**GWANDA STATE UNIVERSITY**  
**FACULTY OF NATURAL RESOURCES MANAGEMENT & AGRICULTURE**  
**DEPARTMENT OF HORTICULTURE & CROP PRODUCTION**  
**BACHELOR OF SCIENCE (HONOURS) DEGREE IN CROP SCIENCE**  
**LCS 4103 SOIL AND WATER CONSERVATION**  
**MAIN EXAMINATION PAPER**  
**DECEMBER 2024**

This examination paper consists of 2 pages, inclusive of cover page

**Time Allowed:** 3 hours

**Total Marks:** 100

**Examiner's Name:**

**INSTRUCTIONS**

1. Answer **ALL** questions in Section A
2. Answer **THREE** questions in Section B

**MARK ALLOCATION**

<b>QUESTION</b>	<b>MARKS</b>
SECTION A	<b>40</b>
SECTION B	<b>60</b>
<b>TOTAL ATTAINABLE MARKS</b>	<b>100</b>

## **SECTION A ANSWER ALL QUESTIONS**

Question 1.

Discuss strategies used in water resource management (20Marks)

Question 2

Describe how the following measures are used in soil conservation management

- i) Crop rotation (4 marks)
- ii) Wind breakers (4 marks)
- iii) Mulching (4 marks)
- iv) Permaculture (4 marks)
- v) Land fertilisation (4 marks)

## **SECTION B: ANSWER THREE QUESTIONS**

Question 3.

(a) Explain the rationale behind soil conservation (10marks)

b) Citing relevant examples, discuss forms of fluvial erosion (10marks)

Question 4

Illustrating your answer, discuss the hydrological cycle [20 Marks]

Question 5.

- a) Outline two forms of water use [10 Marks]
- b) Elaborate on types and selection criteria for open channels used in water conservation. (10 marks)

Question 6

Discuss principles of soil erosion management (20 marks)

Question 7

Describe measures that can be put in place to reclaim degraded land? [20 Marks]

**END OF EXAMINATION**