



**NAMIBIA UNIVERSITY**  
**FACULTY OF NATURAL OF SCIENCE AND TECHNOLOGY RESOURCES AND**  
**SPATIAL SCIENCES**

**DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES**

<b>QUALIFICATION: BACHELOR OF AGRICULTURE</b>	
<b>QUALIFICATION CODE: 07BAGR</b>	<b>LEVEL: 7</b>
<b>COURSE CODE: ALM 621S</b>	<b>COURSE NAME: Agricultural Land Management</b>
<b>SESSION: January 2019</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	<b>Alexander Meroro</b>
<b>MODERATOR:</b>	<b>Dr Gabriel Hangara</b>

<b>INSTRUCTIONS</b>
<ol style="list-style-type: none"><li>1. Answer ALL the questions.</li><li>2. Write clearly and neatly.</li><li>3. Number the answers clearly.</li></ol>

**PERMISSIBLE MATERIALS**

1. All written work MUST be done in blue or black ink
2. No books, notes and other additional aids are allowed

**THIS QUESTION PAPER CONSISTS OF 3 PAGES (excluding this front page)**

### **Question 1**

- 1.1 How can soil degradation be avoided (5)
- 1.2 Explain the term Soil Degradation (4)
- 1.3. Explain the term soil erosion (2)

### **Question 2**

Mr Kavendjii Ja Kavendjii, a farmer in the northern communal area of Omusati region plan to switch from Animal traction to mechanized power. Explain to him the possible disadvantages in making such a switch or move. (4)

### **Question 3**

- 3.1. Which three basic landscapes elements are needed for rainwater harvesting? (3)
- 3.2. In many parts of southern Africa, mainly in Namibia, Botswana, South Africa and Zimbabwe, Earth dams are constructed for storage of water. Briefly explain to Mr. Edgar Dinghiswayo what advantages such earth dams have over normal storage dams and describe how he will go about in constructing such dams (6)
- 3.3. Briefly explain how salination harms the soil and the plants (4)
- 3.4. Briefly describe three forms of water erosion in Namibia (3)
- 3.5. Mr Ndjamba ja Ndjamba has a problem with wind erosion and asks your advice on measures to control it. What advices will you give to him? (5)

#### Question 4

- 4.1. Explain the water retention and water movement (3)
- 4.2. How do plants roots gather water? (2)
- 4.3. Briefly explain how the amount of water in the soil is measured. (4)

#### Question 5

- 5.1. Describe the Hydrologic cycle (6)
- 5.2. Describe the importance of water to crops and livestock production (6)
- 5.3. Describe the factors used to determine water quality (6)
- 5.4. State the benefits of irrigation agriculture (4)
- 5.5. Identify and discuss the common types of irrigation systems (6)

#### Question 6:

Describe the principal constraints to pasture and fodder production in Namibia (6)

#### Question 7

7.1. Calculate the gradient of the field if the reading is from dumpy level are: A POINT A (TOP of the field) = 0357 at point B (at the Bottom of the field = 3887. Distance between A and B = 234

(2)

7.2. Suppose the real distance between point A and Point B on the field when these two points are 3.5cm apart on a map whose scale is 1 to 2500. What is the distance between A and B? (3)

7.3. Suppose the fence line of farm Maria Bronn is 1: 100,000 farm maps is 200mm. What will be the length on the ground in KM? What will be the map distance in KM? (4)

7.4. A rectangular field has a length of 120m and width of 85m. What is the area of the field in hectares? (2)

7.5. Define a slope (2)

7.6. Describe the methods of expressing the slope (6)

### Question 8

What is the difference in height between the top and the bottom of a field when the horizontal length of the field is 300 m and the slope is 2%. (2)

**TOTAL: 100**