



**NNAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

**FACULTY OF NATURAL 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: NRH621s</b>	<b>COURSE NAME: NON RUMINANT HUSBANDRY</b>
<b>SESSION: NOVEMBER 2019</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 100</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	DR H. R. AMWELE
<b>MODERATOR:</b>	MR. FRANK KANGUATJIVI

<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**  
Differentiate between sick and healthy fish. (10)
- Question 2**  
Give 5 stimulants and explain who they positively affect the spawning cues in fish. (10)
- Question 3**  
Name and explain the 3 types of fish embryonic development. (9)
- Question 4**  
Explain the function of chicken autonomic nerves system and sensory organs nerve systems. Autonomic nerves system (ANS). (5)
- Question 5**  
Explain the mechanism egg fertilization until it is laid. (10)
- Question 6**  
**Answer the following questions on chicken disease**
- a) What are the symptoms of Avian pox? (4)  
b) How is Newcastle Disease transmitted? (4)  
c) What are the symptoms of Newcastle Disease? (5)
- Question 7**  
Define the following terms
- Body weight increase/ gain (2)
  - Specific growth rate (2)
  - Feed conversion ratio (2)
  - [6]
- Question 8**  
Give two examples of fat-soluble vitamins and give 2 examples of their deficiency? (6)
- Question 9**  
What are the deficiency of the following minerals in pig?
- Calcium and phosphorus (2)  
Magnesium (2)  
Sodium and chloride (2)  
[6]

**Question 10**

Fill in the examples of growth and reproductive data for pigs. (5)

	Growth and reproductive data
Conception - birth	
Starting period	
Age at puberty	
Estrus cycle length	
Reproductive life	

**Question 11**

Fill in the causes of Brucellosis and Rabies in pig, and give two (2) examples on how the diseases are transmitted? (6)

**Question 12**

Answer the following questions on rabbit.

12.1 What 6 point you need to look at before you disqualify a rabbit. (6)

12.2 Name the causes of the following rabbit intestinal diseases. (3)

Diseases	Causes
Enterotoxemia	
Colibacillosis	
Proliferative enteropathy	

[9]

Total:.....[100]