



**NAMIBIA 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: JANUARY 2020</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 105</b>

<b>SUPPLEMENTARY / SECOND 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 (Including this front page)**

**Question 1**

Answer the following questions on fish diseases.

- 1.1 What are the 3 common body symptoms of fish diseases? (3)  
 1.2 What are the 3 common gills symptoms of infected fish? (3)  
 1.3 What are the fish behaviour that are indication of disease infection (6)  
**[12]**

**Question 2**

What are the rules of using the following fish drugs? (6)

Drugs	Rule
Hydrogen peroxide	
Formaldehyde	
Potassium permanganate	

**Question 3**

Explain how the following stimulants how they positively affect the spawning cues in fish.

- Diet (2)
  - Salinity change (2)
  - Opposite sex (2)
- [6]**

**Question 4**

Name and explain the 3 types of fish spawning. (9)

**Question 5**

What are the functions of the chicken earlobe? (3)

**Question 6**

Explain the hen reproductive system? (10)

**Question 7**

Use a table form to give an example of chicken vaccination program from day 1 to 15/18 weeks by indicating the chicken age, type of disease and rote or mode of vaccination? (16)

**Question 8**

Define the following terms

- Protein Efficiency Ratio (PER) (2)
  - Condition Factor (CF) (2)
  - Survival rate (2)
- [6]**

**Question 9**

Give two examples of water-soluble vitamins and give 2 examples of their deficiency in pig? (6)

**Question 10**

What are the deficiency of the following minerals in pig?  
 Iron (2)

Zinc (2)  
 Manganese (2)  
 [6]

**Question 11**  
**Fill in the examples of growth and reproductive data for pigs. (10)**

	Growth and reproductive data
Suckling period	
Growing - finishing	
Age at 1 <sup>st</sup> mating	
Estrus period duration	
Maximum productivity	

**Question 12**  
 What are the causes of Hog cholera and Trypanosomiasis in pigs, and give two (2) examples on how the diseases are transmitted? (6)

**Question 13**  
 Answer the following questions on rabbit.  
 13.1 What 6 faults that you need to look at before you disqualify a rabbit. (6)  
 13.2 Name 3 types of rabbit intestinal diseases. (3)

[9]  
**Total:.....[105]**