



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF AGRICULTURAL SCIENCE	
QUALIFICATION CODE: 07BAGR	LEVEL: 7
COURSE CODE: ANH620S	COURSE NAME: ANIMAL HEALTH
DATE: NOVEMBER 2022	
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S):	PROF. T. WASSENAAR
MODERATOR:	MRS LUCIA KAFIDI

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

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book (including additional map)

THIS QUESTION PAPER CONSISTS OF 4 PAGES (excluding this front page)

Question set 1 (Managing animal health)

1.1: A farmer is complaining that his young cattle are dying. Describe the entire investigative approach you will take in order to arrive at a tentative diagnosis of the cause(s) of mortalities in his herd. For each procedure in the investigation, explain why you are asking a specific question or doing a specific examination.

- Remember to say what the most important (key) principles of an investigation are.
- For each procedure in the investigation, explain why you are asking a specific question or doing a specific examination
- Remember to include differential diagnoses (diseases that all have mortality of young cattle as a symptom) [16 marks]

1.2: With reference to antibiotics:

- (i) What do the terms broad spectrum and narrow spectrum refer to?
- (ii) Give an example of a broad spectrum and narrow spectrum antibiotic.
- (iii) How will you apply your knowledge of broad spectrum and narrow spectrum to treat an animal with a bacterial infection? [5 marks]

1.3: Explain how you could increase host resistance against disease. [6 marks]

1.4: Complete the following sentence:

The vaccine against brucellosis is given to _____ between _____ and _____ months because if given when they are older they will test _____, even though it won't harm them and they will become immune. [2 marks]

1.5: With the aid of a flow-diagram, explain the different types and uses of antimicrobial drugs. [5 marks]

1.6: Give one definition of biosecurity. [2 marks]

Question set 2 (Infectious diseases)

2.1: List two common infectious causes of abortion in cattle (2 marks). [2 marks]

2.2: What would make you suspect African Swine Fever in a piggery [4 marks]

2.3: Explain the three transmission cycles of the Rift Valley fever virus. Illustrate your answer with a diagram that shows how the different cycles are related to each other. [6 marks]

2.4: (i) Define "zoonosis" (1 mark)

(ii) Name five zoonotic diseases. (5 marks). [6 marks]

Question set 3 (Immunity)

3.1: How do vaccines work? Complete the following sentences

By inoculating (injecting or by mouth) a _____ version of the _____, or of a part of its antigen, the _____ system is trained to recognise more _____ versions of the pathogen. Because it is trained, it can recognise and mount a response much quicker next time it is exposed to the natural, virulent version of the pathogen [4 marks]

3.2: Draw an organogram to explain the different types of adaptive/acquired immunity, including the types of immunizations (0.5 marks for each component). [6 marks]

3.3: With reference to white blood cells:

(i) What are leukocytes (white blood cells)?

(ii) What is their main function?

(iii) Where are they produced? [3 marks]

3.4: Lymphocytes are a specific type of white blood cell associated with the lymphatic system. Name the three major types of lymphocytes. [3 marks]

Question set 4 (Causes, distribution and process of disease)

4.1: Draw a diagram illustrating the natural history of a disease timeline and explain the components. [8 marks]

4.2: Complete the following sentences about animal disease reservoirs and carriers by writing the five missing words:

Carriers are individuals that inconspicuously shelter a (1) _____, but also physically transport the disease-causing agent to another susceptible host. There are two types of carriers: -- (2) _____ carrier, and a (3) _____ carrier, like an animal worker that carries the pathogen to other animals on their body or tools.

Carriers can also be **reservoirs**, which is a place or a thing where a disease-causing agent can hide, waiting for the next chance to infect a susceptible host. Not all reservoirs are carriers, though.

There are two types of reservoirs (4) _____ (a living organism is involved) and (5) _____ (can be living or non-living). [5 marks]

Question set 5 (Veterinary services)

5.1: Who is the Veterinary Authority in Namibia? [1 mark]

Question set 6 (Non-infectious diseases)

6.1: The following relates to poisoning by the plant gifblaar/otjikuryoma/munkuguru: [10 marks]

- a) On the included map, show where in Namibia the plant that causes gifblaar poisoning occurs (it can be very approximate) (2 marks)
- b) Name two prominent symptoms of gifblaar poisoning (2 marks)
- c) What is the most typical thing that happens to cattle that have consumed the plant in lethal doses and then drink water or do exercise? (1 mark)
- d) Name three "treatments" that can be done to lessen the effect of poisoning (3 marks)
- e) Name two ways of controlling the occurrence of the poisonings (2 marks)

6.2: Is the following statement true or false: "Metabolic diseases are mostly caused by extensive animal production practices (such as extensive beef farming in Namibia) when the body reserves of calcium, magnesium or energy cannot meet the metabolic needs". Motivate your answer. [2 marks]

Question set 7 (Animal welfare)

7.1: (a) Discuss the philosophy behind animal welfare and its relationship with the principle of humane treatment.

(b) Are there any instances where humane treatment of sentient non-human species is not applicable? [4 marks]

Map for Question 6.1:

