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: JANUARY 2023	
DURATION: 3 HOURS	MARKS: 100

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

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. Examination question paper
2. Answering book

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

Question set 1 (Managing animal health)

Question 1: A farmer is complaining that her sheep are aborting. Describe the entire investigative approach you will take in order to arrive at a tentative diagnosis of the cause(s) of abortion in her flock. [**16 marks**]

- Remember to say what the most important 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 have abortion as a symptom)

Question 1.2: Name the three basic groups of activities involved in management of animal health and write a short explanatory sentence on each. [**6 marks**]

Question 1.3: Name the two principles in the prevention and control of animal disease (2 marks) and give one example each of the ways in which these principles can be applied (2 marks) [**4 marks**]

1.4: (i) Where is the correct place on the body of a cow or goat to apply an intramuscular or subcutaneous injection?

(ii) Where on its body should it NOT be injected even though there are sometimes a lot of muscle there?

Make a rough drawing to illustrate your answers. [**2 marks**]

1.5: Discuss the basic principles of the scheduling of drugs used for the treatment of disease conditions in animals. [**6 marks**]

Question set 2 (Infectious diseases)

Question 2.1: Fill in the missing information in the table below. [**6 marks**]

2.2	Disease	Type of pathogen	Affected species (= "susceptible host")	Most important symptom
A	**Newcastle disease**	(a)	Domestic poultry, wild bird species	(b)
B	(c)	Bacterium	Cattle	Fast, difficult or noisy breathing, discharges from the nose, shallow coughing especially after exercise, >5% die of respiratory symptoms
C	**Rift Valley fever**	(d)	(e)	Fever, abortion storm, sudden death, weakness, vomiting and abdominal pain, discharge from nose (mucus and pus), bloody diarrhoea, haemorrhages in mucous membranes, jaundice, pathogen shows three transmission cycles.
D	(f)	Virus	Cattle	Necrotic lesions in the mouth and on the muzzle, progressive opacity of the corneas leading to blindness, discharge from eyes and nose

Question 2.2: List two infectious causes of abortion in sheep. [**2 marks**]

Question 2.3: Write short notes on the following:

(i) The "triangle" of causes of mastitis (6 marks)

(ii) The rationale behind FMD zonings (2 marks). [**8 marks**]

Question 2.4: *Example text: Rabies is a viral disease causing an acute encephalitis, it is transmitted mostly through the bite of a predator (dog), it affects all warm-blooded animals, causes behavioural changes or paralysis with no specific post-mortem signs and is chiefly controlled through vaccination.*

Read the example above that deals with rabies, then write one to three sentences that describe the following aspects of the disease **bluetongue**: (NB: it should be in paragraph form, not bullet points!) [**6 marks**]
-   The course of the disease (is it peracute, acute or chronic or combinations) (0.5 mark)
-   What is the cause (0.5 mark)
-   Which organ system is mostly affected (0.5 mark)
-   How is it transmitted (0.5 mark)
-   Which species are affected (0.5 mark)
-   Most important/typical symptoms (2 marks)
-   Most important pathological signs (0.5 mark)
-   How is it controlled (1 mark)

Question set 3 (Immunity)

Question 3.1: (i) What are antibodies? (1 mark)

(ii) Which cells produce antibodies? (1 mark)

(iii) How do antibodies protect the body against pathogens (name three mechanisms)? (3 marks)

[**5 marks**]

Question 3.2: a) Explain the concept of herd immunity. (2 marks)

b) Why is it important? (2mark) [**4 marks**]

Question 3.3: Discuss how the immune response works:

a) Tell the story of how it functions – there are 8 aspects to this

b) Pay particular attention to how the non-specific and specific immune systems differ from each other (which components belong to which system), and c) ...how they are related to each other, or to put it in another way: how do they let each other know that there is a pathogen that needs to be attacked. Use drawings to illustrate the process and components. [**10 marks**]

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

Question 4.1: (i) Explain the modes of transmission of diseases in farm animals (1 mark each for main division into two kinds, 0.5 marks for each subsequent division).

(ii) In your opinion, why is it important to understand the modes of transmission of diseases (2 marks). [**8 marks**]

Question set 5 (Veterinary services)

Question 5.1: Pick the correct answer/s from the list of statements below:

Two important pieces of legislation that governs the control of animal health in Namibia are

    a)   Animal Health Act, Act 1/2011
    b)   Prevention of Undesirable Residues in Meat Act, Act 21/1991
    c)   Animal Meat and Hooves Hygiene Act, Act 87/1967
    d)   Medicines and Related Substances Control Act, Act 13/2003
    e)   Stock Theft Act, Act 24/1995

(Note that the number of marks do not necessarily reflect the number of correct answers). [**3 marks**]

Question 5.2: Define "notifiable" diseases. [**2 marks**]

Question set 6 (Non-infectious diseases)

Question 6.1: List and discuss the various non-infectious causes of disease. Include an example of a disease caused by each factor (where relevant). [**8 marks**]

Question set 7 (Animal welfare)

Question 7.1: Explain what you understand under the term "sentience" in animals. [**4 marks**]