



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES
SCHOOL OF AGRICULTURE AND NATURAL RESOURCES SCIENCES
DEPARTMENT OF AGRICULTURAL SCIENCE AND AGRIBUSINESS**

QUALIFICATIONS: BACHELOR OF SCIENCE IN AGRICULTURE	
QUALIFICATIONS CODE: 07BAGA	LEVEL: 7
COURSE CODE: ANH620S	COURSE: ANIMAL HEALTH
DATE: NOVEMBER 2024	PAPER: 1
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER:	PROF. T. WASSENAAR
MODERATOR:	MRS. LUCIA TUYENI-KELAO KAFIDI

INSTRUCTIONS
<ol style="list-style-type: none">1. Answer all the questions.2. Write neatly and clearly.3. Mark all answers clearly with their respective question numbers.4. All written work MUST be done in blue or black ink.5. No books, notes and other additional aids are allowed.

PERMISSIBLE MATERIALS

1. Pen & Pencil
2. Examination paper
3. Examination script

**THIS QUESTION PAPER CONSISTS OF 5 PAGES
(Excluding This Front Page)**

SECTION 1: INFECTIOUS DISEASES

[32]

QUESTION 1.1

(5)

- a) What is a notifiable disease? (2)
- b) List three animal diseases in Namibia that are notifiable according to the Animal Health Act of 2011 (3)

QUESTION 1.2

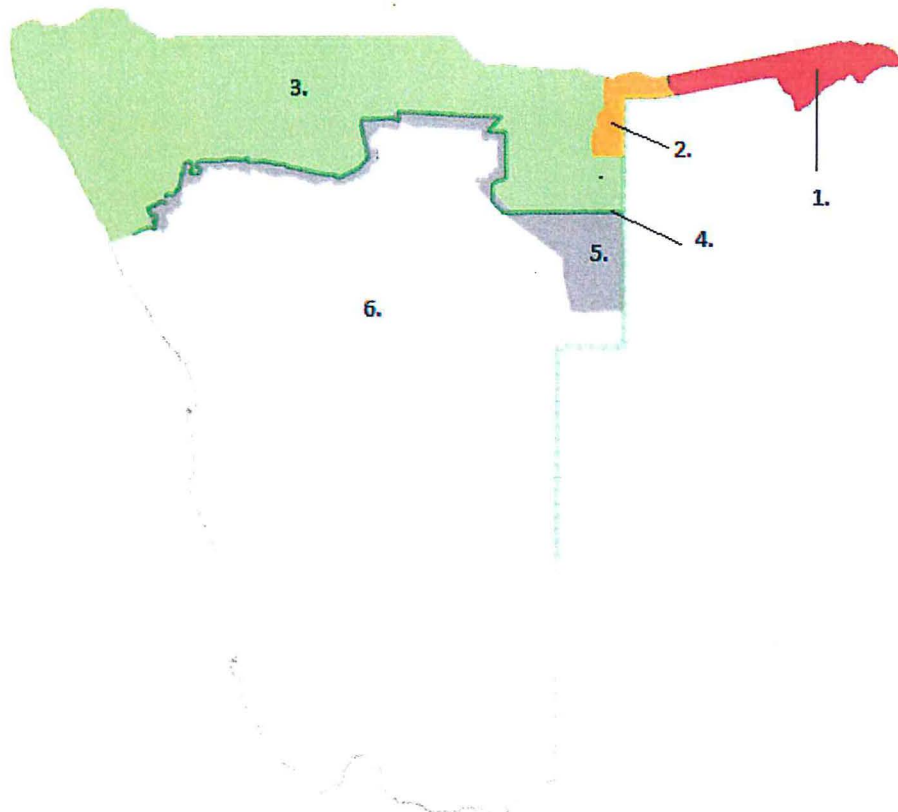
(4)

- a) Define the term “zoonosis” (1)
- b) Name three zoonotic diseases. (3)

QUESTION 1.3

(8)

- a) Below is an outline map of Namibia. Following the numbers on the map, name the five different Foot and Mouth Disease zones and structures. (6)



- b) Write short notes on the justification for the FMD zonings (2)

QUESTION 1.4**(15)**

Below is a table containing some basic information about four infectious diseases. Fill in the missing information in the empty cells

Disease	Zoonotic Yes or No	Type of pathogen	Affected species (= "susceptible host")	Most important symptom
a)	Yes	Virus	b)	Nervous symptoms, behaviour changes
African Swine Fever	c)	d)	e)	f)
Avian Influenza (bird flu)	g)	h)	i)	Respiratory symptoms with facial swelling and blue comb
Lung Sickness (CBPP)	j)	k)	Cattle	Difficult breathing, emaciation, discharge from nose, shallow coughing
Enzootic abortion	l)	m)	Sheep are most susceptible, but can affect cattle too	Abortions, few in first year with abortion storms in subsequent lambing season
n)	o)	bacterium	Cattle	Cows: abortion, stillbirths, weak calves. Bull: epididymitis, orchitis, infertility,
African horse sickness	p)	q)	Equids (horse family)	r) <i>Name four forms of disease</i> (0.5 x 4)
Heartwater	s)	t)	Cattle, sheep, goats and antelopes	u)
Black Quarter (spons siekte)	v)	Bacteria	Cattle and sheep	w)
Pasteurellosis in sheep	x)	y)	Sheep and goats – sometimes cattle	z) <i>Name two syndromes</i> (2 x 0.5)

SECTION 2: NON-INFECTIOUS DISEASES

[20]

QUESTION 2.1

(2)

During the delivery stage of a normal calving process - explain what you will see - as to confirm it is a normal presentation of a calf.

QUESTION 2.2

(2)

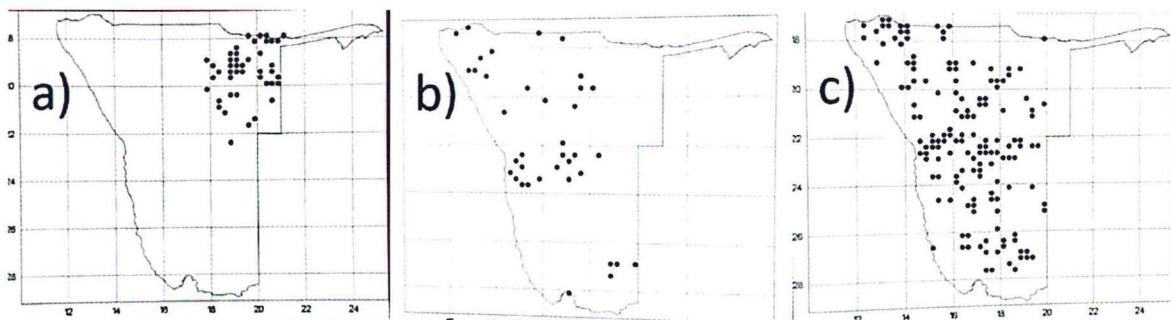
Name the clinical signs you will expect in sheep with *Geigeria ornativa* poisoning.

QUESTION 2.3

(5)

The following relates to poisoning by the plant gifblaar/otjikuryoma/munkuguru:

- a) Which of the included maps, show where in Namibia the plant that causes gifblaar poisoning occurs (1)



- b) What time of year are you most likely to get problems with poisoning from Gifblaar/Poison leaf/ Otjikuryoma? (1)
- c) Explain why (2)
- d) There are at least 3 indicator plants (plants that are associated with Gifblaar). Name one (1)

QUESTION 2.4

(4)

A farmer in the north of Namibia has some cattle that usually graze along the vleis (wetlands). Some of the animals show signs of anemia and visible bottle jaw, and when one of the animals were slaughtered, they saw scarring in the liver and thickened bile ducts.

- a) What endo parasite do you think might be the cause? (1)
- b) Looking at the table below - which chemical group of the different anthelmintics would you suggest him to use on his animals? (1)
- c) What other advice can you give him to lower the impact or numbers of this parasite? (2)

	Chemical group	Remedies	Spectrum
*1	Macrocyclic lactones	Ivermectin; Abamectin; Moxidectin	Roundworms; Fly larvae
2	Benzimidazoles	Thibendazole; Mebendazole; Albendazole; Triclabendazole; Fenbendazole	Roundworms and eggs
3	Imidothiazoles	Levamisole	Roundworms
4	Salicylanilides	Rafoxanide**; Closantel**; Resorantel; Niclosamide; Oxyclosanide	Flukes and some tapeworms **Roundworms
5	Phenols	Nitroxynil; Disophenol	Roundworms
6	Sulphonamides	Clorsulon	Flukes
7	Organophosphates	Haloxon; Trichlorfon; Naphthalophos	Roundworms
8	Isoquinoline	Praziquantel	Tapeworms
9	Other (Tetrahydropyrimidine)	Morantel Pyrantel	Roundworms

QUESTION 2.5

(3)

Name three common symptoms you will encounter if your sheep flock has a high number of roundworm infestation?

(3)

QUESTION 2.6

(4)

a) Does Tapeworms have a direct or indirect life cycle?

(1)

b) Explain the type of life cycle:

(3)

SECTION 3: IMMUNITY AND ANIMAL HEALTH

[48]

QUESTION 3.1

Explain the concept of herd immunity.

(2)

QUESTION 3.2

Name the five freedoms that define the welfare needs of an animal?

(5)

QUESTION 3.3**(5)**

- a) What are antibodies? (1)
- b) Which cells produce antibodies? (1)
- c) How do antibodies protect the body against pathogens (name three mechanisms)? (3)

QUESTION 3.4

A farmer is complaining that his young cattle are dying. Describe the entire investigative approach you will take 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. **(20)**

QUESTION 3.5

Complete the following sentence:

The vaccine against brucellosis is given to (a) _____ between (b) _____ and (c) _____ months because if given when they are older, they will test (d) _____, even though it won't harm them, and they will become immune. **(4)**

QUESTION 3.6**(12)**

With reference to the drug types listed below, discuss each type of drug's pharmacological (treatment) function and explain when you would use it.

- 1 Antibiotic (3)
 - a) Discuss the function
 - b) Explain when you would use it
- 2 Anti-inflammatory (3)
 - a) Discuss the function
 - b) Explain when you would use it
- 3 Vaccine (3)
 - a) Discuss the function
 - b) Explain when you would use it
- 4 Anthelmintic (3)
 - a) Discuss the function
 - b) Explain when you would use it

----- End of Question Paper -----