



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF NATURAL RESOURCES AND SPATIAL SCIENCES**

**DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES**

<b>QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT</b>	
<b>QUALIFICATION CODE: 07BNTC</b>	<b>LEVEL: 7</b>
<b>COURSE CODE: ALS720s</b>	<b>COURSE NAME: ANIMAL STUDIES 3</b>
<b>SESSION: NOVEMBER 2019</b>	<b>PAPER: THEORY</b>
<b>DURATION: 3 HOURS</b>	<b>MARKS: 150</b>

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER(S)</b>	Mrs Louise Theron Ms Shirley Bethune
<b>MODERATOR:</b>	MR. Anna Marais

<b>INSTRUCTIONS</b>
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

**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 4 PAGES** (excluding this front page)

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**SECTION A  
PATHOLOGY**

**QUESTION 1**

Explain the following terms:

[10]

- |     |                    |     |
|-----|--------------------|-----|
| 1.1 | Acute disease      | (2) |
| 1.2 | Asphyxiation       | (1) |
| 1.3 | Enzootic stability | (2) |
| 1.4 | Incubation         | (1) |
| 1.5 | Jaundice           | (2) |
| 1.6 | Septicaemia        | (1) |
| 1.7 | Vector             | (1) |

**QUESTION 2**

- 2.1 "Diseases" can be grouped into 4 main TYPES. Name AND **explain** them. (8)
- 2.2 Explain briefly what antibodies are and where in the body they are produced. (2)

[10]

**QUESTION 3**

Complete the following table. Do not re-draw it. Only write down the letters (a)-(o) and the appropriate answers for each. [15]

	Anthrax	FMD	Rabies	Babesiosis	Corridor disease	Ngana
Pathogen present in blood? Yes/No	Yes	No	(a)	(b)	Yes	(c)
Type of causal agent? (virus/bacteria, ext)	(d)	(e)	Virus	(f)	Protozoan	Protozoan
Name the vector involved	None	(g)	None	(h)	Tick	Tsetse fly
Paralysis present Yes/No	No	(i)	Yes	No	(j)	(k)
Scientific name of causal agent	(l)	_____	_____	(m)	(n)	(o)

**QUESTION 4**

Discuss 5 Indirect effects of Tuberculosis on Wildlife and Humans. Make use of full sentences!

[10]

### QUESTION 5

- 5.1 Which organ of the body is affected by Anthrax? (1)
- 5.2 Anthrax spores are very resistant and can survive in the environment for many years. Explain various ways in which the spores can spread from one area to another. Write full sentences! (5)
- 5.3 How can Namibia control and/or prevent Rabies? (4)
- [10]

### QUESTION 6

- 6.1 Provide two symptoms that will be observed in animals that have eaten each of the following poisonous plants. Avoid general symptoms like fever, salivation and listlessness. (For each, also state which part of the animal body it mainly affects).
- (a) Nerium oleander (2)
- (b) Geigeria ornativa (2)
- (c) Nicotiana glauca (2)
- 6.2 What are the results (clinical signs) of Copper deficiency in game? (2)
- 6.3 Why is it important for game to have an adequate supply of phosphorous in their diet? (2)
- [10]

### QUESTION 7

You are farming with Roan antelope and have recently bought a breeding group. You made use of a private game capture team. Three days after the antelope were delivered you found the male dead in the boma. Your insurance company wants confirmation that it was NOT due to capture myopathy. What are the post-mortem lesions the vet has to look for to confirm a diagnosis of death due to capture myopathy? [10]

**SUB-TOTAL [75]**

### **SECTION B DESERT ADAPTATIONS**

### QUESTION 8

- 8.1 Provide a definition for "Aestivation" (2) and explain how desert animals use this to cope with extreme conditions (4). (6)
- 8.2 Although water is very scarce in the desert and rivers only flow occasionally, some animals do survive in the temporary ponds after such floods. Explain how they manage to survive in those ponds. (5)
- [11]

### QUESTION 9

Discuss 7 (different) behavioural adaptations of animals living in the Namib to cope with extreme temperatures.

Students can use their own examples. They have to use proper sentences and explanations. One mark per adaptation and one mark for the proper explanation of that adaptation. Adaptations towards extreme heat OR cold.

[14]

### QUESTION 10

No animal can live without water. Successful desert organisms must therefore maintain a healthy water balance. Discuss various strategies that animals living in the Namib Desert use to gain water.

[10]

**SUB-TOTAL [35]**

### **SECTION C ENDEMISM IN NAMIBIA**

#### QUESTION 11

- 11.1 Clearly differentiate between a **critically endangered** and an **endangered** species according to the IUCN categories of conservation concern. (2)
- 11.2 Based on the presentation by Francois Bekker from the National Museum explain the difference between allopatric and sympatric speciation (2)
- 11.3 Give both the common and scientific name of the endemic frog that has only been found in a wetland near the airfield outside Rundu. (2)
- 11.4 Give both the common and scientific name of the endemic freshwater fish found only in rainwater pools in the Salambala conservancy **and** mention **two** threats that it faces. (4)
- 11.5 You are guiding tourists interested in gamebirds in north-western Namibia, describe the clear sexual dimorphism of Hartlaub's spurfowl **and** the habitat where they can expect to find these near-endemic birds. (3)
- 11.6 As an environmental educator who regularly takes young learners to Daan Viljoen Game Park you are concerned that the use of dead trees for firewood is causing a serious decline in the populations of near-endemic hornbills. Explain the reasons for the decline of the hornbills and what the learners should do to help reverse this. (2)
- 11.7 Name the endemic desert rodent that is named after an owl, because its skull was found in an owl pellet, even before a living specimen had been collected. What is the common name of the owl. (2)
- 1.8 Give the common name of the marine mammal that is endemic to the Benquela system and explain the origin of its name. (2)

[19]



## QUESTION 12

Choose **either A or B**

- A Namibia is well-known for its endemic and near endemic snakes.  
Write an **essay** on the any **three** of the following snake species:

*Python anchietae*

*Lycophidian namibianum*

*Telescopus semiannulatus* subspecies *polysticus*

*Naja nigricollis* subsp. *Nigricincta*

*Bitis peringueyi*

*Bitis schneideri*.

Include a paragraph on each, giving its common name (1), its distribution (1) and preferred habitat (1) and two interesting facts (2) about it.

Mark allocation: Title (1), Introduction (2), Discussion (5 marks per snake) and Conclusion (2). Finally conclude with a sentence about why it is important to conserve our endemic snakes (1).

[21]

**OR**

- B Tourists to Etosha National Park find it difficult to tell the endemic mammals apart from other more widespread similar-looking species. As a warden in Etosha you are preparing a short essay with clear guidelines to help them identify **three** of the endemic mammal species that they **most likely** to see in the park.

Include a paragraph on each, giving their common (1) and scientific names (1), and the habitat they prefer and where they are likely to be seen in Etosha (1). Also name the similar species that each is easily confused (1) with and explain how to tell them apart (1).

Mark allocation: Title (1), Introduction (2), Discussion (5 marks per mammal) and Conclusion (2). Finally conclude with a sentence about why it is important to conserve our endemic snakes (1). Conclude with a sentence about why it is important to conserve our endemic mammals.

[21]

**SUB-TOTAL [40]**

**TOTAL [150]**