NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF NATURAL RESOURCES AND SPATIAL SCIENCES

DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT	
QUALIFICATION CODE: 07BNTC	**LEVEL:** 7
COURSE CODE: ALS720s	**COURSE NAME:** ANIMAL STUDIES 3
SESSION: JANUARY 2020	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 150

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mrs Louise Theron Ms Shirley Bethune
MODERATOR:	MR. Anna Marais

INSTRUCTIONS
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 (Including this front page)

SECTION A
PATHOLOGY

QUESTION 1

1.1 Provide 4 reasons for the ever increasing emergence and spread of infectious diseases worldwide. (4)

1.2 Explain the term "carrier animal" using Bovine Malignant Catarrhal Fever as an example. (3)

1.3 Explain the term "vector" and give 2 examples. (3)

[10]

QUESTION 2

2.1 What is the most common sign of Brucellosis in cattle? (1)

2.2 Is Brucellosis a contagious disease? (1)

2.3 How can humans get infected with the Brucellosis pathogen? (3)

2.4 Explain the circumstances leading to Brucellosis in cattle. (5)

[10]

QUESTION 3

You are the training officer in Etosha National Park. You are presenting a course to prospective game rangers. Briefly discuss the following topics with them:

3.1 How can they identify an animal that died of or is suffering from Anthrax? (6)

3.2 Humans can also get Anthrax. Discuss the various ways by which humans can become infected and explain how they can reduce their chances of becoming sick while working infected animals. (6)

[12]

QUESTION 4

Give a short description of the disease Babesiosis. Explain what it is, how animals get it, immunity and resistance in cattle and how it can be treated. NO clinical signs required! **[10]**

QUESTION 5

Foot and Mouth disease (FMD) is a notifiable disease in Namibia. Write a report on the importance of the disease. Explain why it is a notifiable disease, how animals get it and how it can spread. (Do not comment on the clinical signs). Write full sentences! **[10]**

QUESTION 6

6.1 Briefly comment on the direct as well as the indirect implications of plant poisoning for a farmer. (7)

6.2 *Ricinus communis* is one of the most poisonous plants in the world, yet it is often put to good use. Provide 2 uses for this plant. (2)

6.3 Discuss 4 possible negative effects of pesticides. (4)

[13]

QUESTION 7

7.1 Provide 6 post-mortem lesions that can be found in an animal that died because of capture myopathy. (6)

7.2 What possible reasons can there be that an animal does not "go down" as expected after being darted by the game capture vet (takes longer than expected)? (4)

[10]

SUB-TOTAL [75]

SECTION B
DESERT ADAPTATIONS

QUESTION 8

Briefly explain how the following animals make use of behavioural thermoregulation to cope with extreme desert temperatures.

8.1 Onymacris plana (3)

8.2 Ocymyrmex robustior (3)

8.3 Suricates (5)

8.4 Golden mole (2)

[13]

QUESTION 9

Make use of suitable examples to explain how desert animals avoid and/or tolerate dehydration. Note: do not provide methods of water gain! **[12]**

QUESTION 10

10.1 "Shade creation is one method used by desert birds to cope with extreme temperatures." Discuss this statement. (5)

10.2 Apart for the mole-rats – report on five other methods that animals living in the arid and semi-arid regions of Namibia (like Kunene) use to cope with the problem of unpredictable and poor quality food supplies. (5)

[10]

SUB-TOTAL [35]

SECTION C
ENDEMISM IN NAMIBIA

QUESTION 11

11.1 Clearly differentiate between a true endemic and a near-endemic species (2)

11.2 a) Using Namibia's barking geckoes as an example, explain what **speciation** is. (1)

b) Briefly discuss the original speciation of Namibia's barking geckoes, name both endemic species and say where and why they speciated. (4)

c) Based on the recent research by Francois Becker in the Namib, discuss the continued speciation of *Ptenopus carpi* and the evidence that he has found to support this. (5)

11.3 Give the scientific name of the Damara Tern and explain why it is considered to be a breeding endemic. (2)

11.4 Give the scientific name of the nocturnal Namib Dune gecko, and say why they glow under ultra-violet light. (2)

11.5 Give both the common and scientific names of the Namibian endemic **ground squirrel**, and give two characteristics you as a tour guide in Etosha National Park can use to distinguished it from the similar-looking South African ground squirrel, that also occurs in Etosha. (4)

[20]

QUESTION 12

Choose **either** A **or** B

A Some years ago, the Namib Sandsea became Namibia's second World Heritage Site, and for its unique plants and animals as well as its outstanding natural beauty, and the interesting geomorphological processes that shaped it. Write a paragraph on each of the following **three** unique animals found only there: Namibia's **only** truly endemic **bird, one** endemic **reptile** and **one** endemic **mammal**, found only in the Namib Sand Sea.

Give both the common (½) and scientific (1) names of each and describe what each looks like (1). Say if it is a true endemic or a near-endemic (½), give its distribution and its preferred habitat (1). Discuss how it is adapted to surviving in dunes. You may add other interesting facts too (1).
Mark allocation: Title (1), Introduction (2), Discussion (5 marks per animal) and Conclusion (2). **[20]**

OR **Option B on next page!**

B The north-western escarpment area of Namibia forms an ecotone between the savannah and Namib desert biomes, and together with the woodlands alongside the large ephemeral rivers that cross it provides a variety of habitats, creating niches for a wide variety of species to evolve. Tourists are drawn to the wide variety of endemic and near-endemic birds found there.

Choose **three,** near-endemic, bird species that occur there and prepare a short pamphlet to guide tourists visiting the Palmwag concession area. Include a paragraph on each of the three bird you choose, giving its common (1) and scientific (1) name, its main distinguishing features (1), its preferred habitat (1) and where it nests (1).

Mark allocation: Title (1), Introduction (2), Discussion (5 marks per bird) and Conclusion (2). **[20]**

SUB-TOTAL [40]

TOTAL [150]