



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF NATURAL RESOURCE SCIENCES

QUALIFICATION: BACHELOR OF NATURAL RESOURCE MANAGEMENT	
QUALIFICATION CODE: 07BNRS	LEVEL: 7
COURSE CODE: BNS511S	COURSE NAME: BIOLOGY FOR NATURAL SCIENCES
DATE: JULY 2023	
DURATION: 3 HOURS	MARKS: 150

SECOND OPPORTUNITY/SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Mrs. Louise Theron
MODERATOR:	Mrs. Clarence Ntesa

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

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

SECTION A

QUESTION 1

Give the scientific term for each of the following:

[10]

- 1.1 Type of mixture where the particles are blended completely.
- 1.2 Process whereby a gas changes directly into a solid.
- 1.3 Type of change that takes place when a banana ripens.
- 1.4 Elements in group 7 of the Periodic table.
- 1.5 The organelle/structure that cells use to store salts, ions and sugars.
- 1.6 The cell organelles that make proteins.
- 1.7 A deadly virus that brings about rapid lysis of the host cell.
- 1.8 Special, dehydrated cell formed by bacteria when conditions are unfavourable.
- 1.9 The opening where food enters the body of *Paramecium*.
- 1.10 Hyphae that lack cross walls completely.

QUESTION 2

Explain the difference between the following pairs of terms.

[10]

- 2.1 Antheridium and Archegonium
- 2.2 Phenetic classification and phylogenetic classification
- 2.3 Rough ER and Smooth ER
- 2.4 Monokaryotic hyphae and Dikaryotic hyphae
- 2.5 Lysosomes and Vacuoles

QUESTION 3

State whether each of the following statements is True OR False. If the statement is false – then state False – AND also – re-write the statement to correct it.

[10]

- 3.1 Solids have more intermolecular force than liquids.
- 3.2 The horizontal above-ground hyphae found in some fungi is known as a stolon.
- 3.3 Yeast cells belong to the phylum Deuteromycota and are used in the production of beer.
- 3.4 The tsetse fly is the causal agent for African Sleeping sickness.
- 3.5 Mycota have chitin in their cell walls.
- 3.6 Foraminifera is responsible for Red Tide in Namibia.
- 3.7 Members of the phylum Apicomplexa have an infectious stage known as sporozoite.

SUB – TOTAL (30)

SECTION B

QUESTION 4

- 4.1 Which is smaller – an electron or a Helium atom? (1)
- 4.2 What is the name of the protein found in the human body that helps to transport Oxygen? (1)
- 4.3 Explain the difference between the Atomic number and the Mass number of an atom. (2)

- 4.4 Explain the difference between Locomotion and Movement and provide a good example for each. (4)
- 4.5 Explain the difference between Classification and Nomenclature. (2)
- [10]

QUESTION 5

- 5.1 For each statement – indicates whether it describes the Lytic OR the Lysogenic cycle of viral reproduction. (4)
- (a) Viral genes are expressed immediately after the virus infects the host cell.
- (b) Many new viruses are assembled.
- (c) Viral DNA is integrated into the host cell's chromosomes.
- (d) Viruses are released from the host cell by lysis.
- 5.2 Provide the correct term for each of the following statements: (3)
- (a) The stage in viral reproduction where the host cell actively produces viral genomes.
- (b) Structures used by viruses to attach themselves to their hosts.
- (c) The stage in viral reproduction where viral genomes and proteins are being put together to form new viruses.
- 5.3 Name **FOUR (4)** ways in which we as humans benefit from bacteria. (4)
- 5.4 Explain the difference between saprophytic and parasitic bacteria. (2)
- 5.5 Bacteria cannot survive in an environment with less than 15-20% moisture. Explain how we can use this to our advantage. (2)
- [15]

QUESTION 6

- 6.1 Name the **FOUR (4)** Protozoan Phyla discussed in class and provide **TWO (2)** unique/identifying characteristics for each. (12)
- 6.2 Explain (in detail) how, and on what, *Paramecium* feeds. Make use of FULL sentences! (8)
- [20]

QUESTION 7

- 7.1 In your own words – explain what happens during Red tide along the Namibian coast. Begin by stating which organisms are responsible for Red Tide. (8)
- 7.2 Although diatoms primarily make use of asexual reproduction, every now and then they have to go through a cycle of sexual reproduction. Explain why this is necessary. (2)
- [10]

QUESTION 8

- 8.1 Explain the difference between "Alternation of Isomorphic generations" and "Alternation of Heteromorphic generations" as found in the life-cycles of seaweed. Also provide an algal example (**Genus names** only) for each. (4)
- 8.2 Red algae are harvested for two commercially important products. Name these two products, explain where in the algal bodies the products are found and provide **ONE (1)** use that we have for these products. (4)

- 8.3 Explain the ecological importance of kelp forests (Phaeophyta). (3)
8.4 Write short notes on the ecological and economic importance of green algae. (4)
[15]

QUESTION 9

- 9.1 Compare the fruiting bodies of the Ascomycota and the Basidiomycota. (6)
9.2 In your OWN WORDS – explain the difference between Plasmogamy and Karyogamy.
(Also indicates which process occurs first). (5)
9.3 Explain the difference between dikaryotic and monokaryotic hyphae. (2)
9.4 Write a report on the economic importance of the Deuteromycota. (10)
9.5 Name and compare the different morphological types of lichens found in Namibia. (12)
[35]

QUESTION 10

- 10.1 Define diffusion. (3)
10.2 Where do the carbon fixation reactions take place during photosynthesis? (1)
10.3 List the products and waste products produced during the light dependent phase of photosynthesis. (3)
10.4 Explain how each of the following influence the rate of transpiration: (8)
(a) number of leaves
(b) number of stomata
(c) thickness of the cuticle
(d) relative humidity
[15]

SUB – TOTAL (120)

TOTAL [150]