



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

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QUALIFICATION : BACHELOR OF SCIENCE	
QUALIFICATION CODE: 07BASC	LEVEL: 5
COURSE: GENERAL BIOLOGY 1B	COURSE CODE: GNB502S
DATE: JANUARY 2024	SESSION: 1
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY: EXAMINATION QUESTION PAPER

EXAMINER: DR JEYA KENNEDY

MODERATOR: PROF LAMECH MWAPAGHA

INSTRUCTIONS:

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:

1. Non-Programmable Calculator

ATTACHEMENTS

None

This paper consists of 5 pages including this front page

QUESTION 1: MULTIPLE CHOICE QUESTIONS

[10]

Evaluate the statements in each numbered section and select the most appropriate answer or phrase from the given possibilities. Fill in the appropriate letter next to the number of the correct statement/phrase on your ANSWER SHEET.

- 1.1 The main criterion used in Linnaeus's system of classification is an organism's;
(a) evolutionary history
(b) morphology
(c) where they lived
(d) hierarchy
- 1.2 HIV, the virus that causes AIDS, only infects certain cells within the immune system. This is because _____.
(a) the virus binds to specific receptors that are only present on certain immune cells
(b) the virus is not very mobile within the body and only comes into contact with a limited number of immune cells
(c) the virus gets into all cells, but the viral RNA is immediately destroyed in all but a small number of immune system cells
(d) infection requires the presence of a specific DNA sequence that is only present in the genome of certain immune system cells
- 1.3 Bacteria can be identified by the following characteristics EXCEPT;
(a) their shapes
(b) the presence of a nucleus
(c) how they move
(d) the composition of their cell walls
- 1.4 Which structure in this paramecium contains copies of the cell's genome for controlling functions?
(a) endoplasm
(b) micronucleus
(c) macronucleus
(d) ectoplasm
- 1.5 Fungi that consist of a continuous mass containing hundreds or thousands of nuclei are known as _____.
(a) dikaryotic
(b) septate
(c) coenocytic
(d) imperfect fungi

- 1.6 The plant group that possess spores and embryo but lacks vascular tissues and seeds are;
(a) pteridophyte
(b) rhodophyte
(c) bryophyte
(d) phaeophyte
- 1.7 Asexual method of reproduction used by some fungi in which a septate hypha dries, shatters, and releases reproductive cells;
(a) spores
(b) budding
(c) fission
(d) fragmentation
- 1.8 Which of these does not pertain to a protostome?
(a) spiral cleavage
(b) blastopore is associated with the anus
(c) coelom, splitting of mesoderm
(d) annelids, arthropods and molluscs
- 1.9 Ligaments connect bones together and withstand a lot of stress. What type of connective tissue should you expect ligaments to contain?
(a) areolar tissue
(b) adipose tissue
(c) dense regular connective tissue
(d) dense irregular connective tissue
- 1.10 A flexible, rubbery protein in connective tissue is called _____, whereas a more fibrous, less flexible glycoprotein is called _____.
(a) adipose; cartilage
(b) endocrine; exocrine
(c) sweat; hormones
(d) elastin; collagen

QUESTION 2: DISTINGUISH BETWEEN THE PAIRS OF THE FOLLOWING TERMS

[4]

Each answer carries two marks.

2.1 Transformation and transduction

2.2 Archenteron and blastopore

QUESTION 3: ONE-SENTENCE ANSWERS**[5]**

Each answer carries one mark

- 3.1 Define what it means to be an absorptive heterotrophic.
- 3.2 What suffix do genus names for viruses end with?
- 3.3 What type of cleavage is present in protostomes?
- 3.4 Define the term bacteriophage.
- 3.5 What type of symmetry do Echinodermata have?

SECTION B: SHORT/LONG ANSWER QUESTIONS**[46 MARKS]****QUESTION 4: SHORT QUESTIONS****[19]**

The number of marks is given in brackets () at the end of each question.

- 4.1 Name the algae which are multicellular. (1.5)
- 4.2 Name the subdivisions of bryophytes. (1.5)
- 4.3 A wart is caused by a virus that may lie dormant for years before any symptoms appear. Does this resemble a lytic or lysogenic infection? Explain. (2)
- 4.4 What are two roles prokaryotes play in the cycling of elements in an ecosystem? (2)
- 4.5 Explain the relationship between shingles and chickenpox. (2)
- 4.6 What are the 6 major types of connective tissue in vertebrates? (3)
- 4.7 Write a short note on retroviruses and give one example. (3)
- 4.8 Identify the phyla that have the following characteristics: (a) radial symmetry (b) acoelomate (c) pseudocoelomate (d) coelom (4)

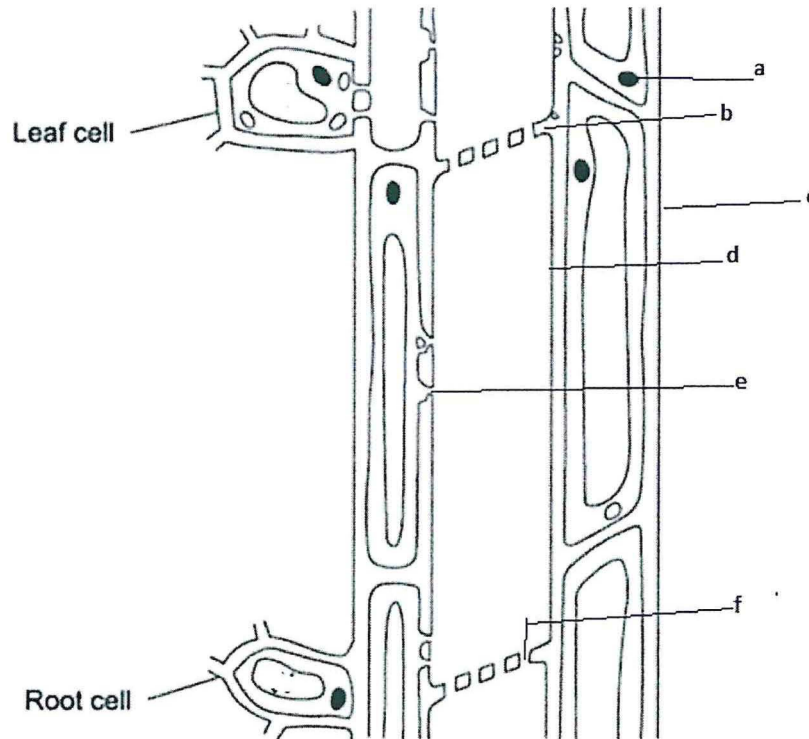
QUESTION 5: LONGER QUESTIONS**[27]**

- 5.1 In a tabular form differentiates between parenchyma and collenchyma tissues. Draw a well labelled diagram. (5)
- 5.2 What are the similarities and differences between slime molds and fungi? (6)
- 5.3 Describe the principal modes by which prokaryotes carry out nutrition and energy capture and compare their requirements for oxygen. (6)
- 5.4 Briefly describe the structure of unicellular Euglena with a diagram. (10)

QUESTION 6:

Use the diagram to answer the questions below.

[7]



- 6.1 The figure above shows a diagram of a tissue, is it a simple or complex permanent tissue and is it a living, dead or both? (1)
- 6.2 Identify the structures labelled b, c, d and e in the diagram. (4)
- 6.3 Mention the four components of the above diagram. (2)

QUESTION 7: ESSAY QUESTIONS

[28]

- 7.1 Draw a phylogenetic tree with a flow chart diagram that represents our current understanding of the evolutionary relationships of plant kingdom ancestors. Label each branch point of the phylogeny with at least one derived character unique to the clade descended from the common ancestor represented by the branch point. (13)
- 7.2 Describe the major divisions of fungi and the primary characteristics that distinguish them with example. (15)

END OF EXAMINATION QUESTION PAPER