



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF HEALTH AND APPLIED SCIENCES**

**DEPARTMENT OF NATURAL AND APPLIED SCIENCES**

<b>QUALIFICATION:</b> BACHELOR OF SCIENCE	
<b>QUALIFICATION CODE:</b> 07BOSC	<b>LEVEL:</b> 5
<b>COURSE NAME:</b> GENERAL BIOLOGY 1B	<b>COURSE CODE:</b> GNB502S
<b>SESSION:</b> JANUARY 2020	<b>PAPER:</b> THEORY
<b>DURATION:</b> 3 HOURS	<b>MARKS:</b> 100

<b>SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER</b>	DR JEYA KENNEDY
<b>MODERATOR:</b>	DR LAMECH MWAPAGHA

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

**PERMISSIBLE MATERIALS**

None

**THIS QUESTION PAPER CONSISTS OF 5 PAGES**  
(Including this front page)

**QUESTION 1:**

**Multiple choices**

**[3]**

- 1.1 Which of the following is mismatched? (1)
- a) Ligaments - bind muscles to bone
  - b) Cardiac muscle cells - have multiple nuclei
  - c) Chondrocytes - cartilage cells
  - d) Adipose cells - found in loose connective tissue
- 1.2 Which of the following plant cells is dead at maturity? (1)
- a) Epidermal cell
  - b) Companion cell
  - c) Vessel element
  - d) Collenchyma cell
- 1.3 In a college greenhouse, a new employee observes fuzzy mycorrhizae in the roots of all plants. Destroying no part of the plants, she carefully removes the mycorrhizae. The most immediate result of this "cleaning" is that the plants cannot: (1)
- a) carry out photosynthesis
  - b) store carbohydrate in their roots
  - c) transport water up their stems
  - d) extract as much nitrogen from the soil

**QUESTION 2:**

**Fill in the blanks**

**[4]**

- 2.1 Ligaments and tendons are formed of \_\_\_\_\_ tissue. (1)
- 2.2 Name the germ layer that gives rise to the outer covering of the body and the nervous system is the \_\_\_\_\_ . (1)
- 2.3 Epidermis and periderm are \_\_\_\_\_ tissues. (1)
- 2.4 A (an) \_\_\_\_\_ is a symbiotic association between an algae and a fungus. (1)

**QUESTION 3:**

**Define the following terms**

**[3]**

- 3.1 Undulating membrane (1)
- 3.2 Trichocysts (1)
- 3.3 Epinephrine (1)

**QUESTION 4:**

**Distinguish between the pairs of the following terms.**

[6]

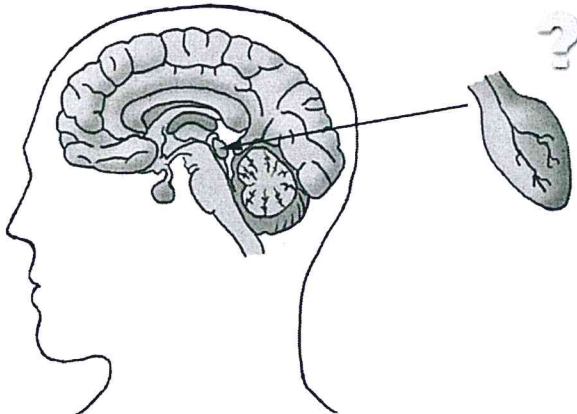
- 4.1 Mouth pore; anal pore (2)
- 4.2 Staphylococcus; streptococcus (2)
- 4.3 Calcitonin; parathyroid hormone (2)

**QUESTION 5:**

**One sentences answers**

[4]

- 5.1 Who was first person to use Latin for scientific naming? (1)
- 5.2 What is the basis of classification of protozoan? (1)
- 5.3 In what part of a plant would you expect to find sclerenchyma cells? (1)
- 5.4 Which hormone(s) is (are) produced by this gland? (1)



**QUESTION 6:**

**Short questions**

[16]

- 6.1 Describe a cladogram? (2)
- 6.2 Give the shape of these viruses. (2)
- a. Bacteriophage
  - b. Polio virus
  - c. Adenovirus
  - d. Ebola virus
- 6.3 What are scouring rushes and why are they named as such? (2)

- 6.4 Distinguish between the three mechanisms by which bacteria can transfer DNA from one bacterial cell to another. (3)
- 6.5 Describe three similarities between modern green algae and plants. (3)
- 6.6 What kinds of meristems are found in monocots and dicots, and where are they located? (4)

**QUESTION 7:**

**Longer questions**

**[24]**

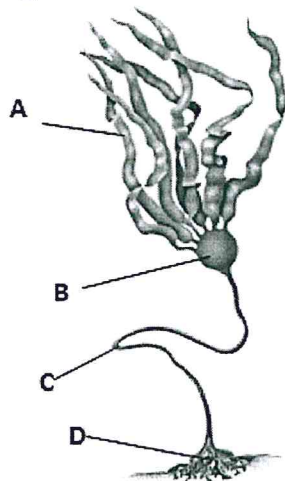
- 7.1 Describe the principal modes by which prokaryotes carry on nutrition and energy capture. (4)
- 7.2 Describe the general characteristics of the three groups of slime mold? (6)
- 7.3 What are the dermal tissues and name the components and function of the dermal tissue system? (6)
- 7.4 What is called as germ layers and name their function? (8)

**QUESTION 8:**

**Structures and functions**

**[10]**

Use the diagram to answer the questions below;



- 8.1 Identify the protist shown in the diagram, and tell whether it is animal-like, fungus-like, or plant-like. (1)
- 8.2 The figure above shows a diagram of an organism. Is it a unicellular or a multicellular organism and state whether it is a heterotroph, an autotroph, or both? (1)

- 8.3 Identify the structures labeled B and D in the diagram and describe their functions. (2)
- 8.4 If the structure labelled B in the above figure were to malfunction, what effect would this likely have on the organism? (1)
- 8.5 Identify the structures labeled A and C in the diagram. (1)
- 8.6 What is the fundamental difference between protozoans and algae? (2)
- 8.7 In what form does the brown algae store its food and mention what the cell wall Composition is made off? (2)

**QUESTION 9:**

**Essay questions**

**[30]**

- 9.1 Describe the different types of epithelial tissues in terms of specific characteristics and functions. (15)
- 9.2 Describe the five phyla of the kingdom fungi. (15)

**THE END**