NAME:..... ID:..... TG:.....

LUSAKA APEX
MEDICAL UNIVERSITY

FACULTY OF PRE-MEDICAL SCIENCES

DEPARTMENT OF BIOLOGY

CELLS AND BIOMOLECULES (BS1001)

TEST 1

AUGUST 2023

EXAMINERS: MS K. MALISA & DR. G. CHAKOLWA

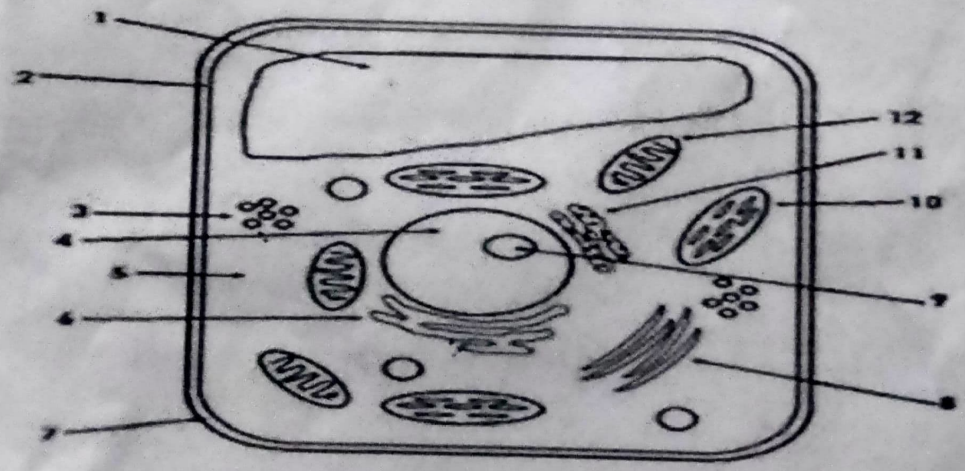
DURATION: 1 HR

INSTRUCTION: ANSWER ALL THE QUESTIONS IN THIS PAPER IN THE SPACES PROVIDED

SECTION A-50 Marks

A1. Below is a diagram of a cell. Answer the following questions.

(a) Complete the diagram by filling in the blank spaces that are numbered below the diagram.
[12 Marks]



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

(b)Identify the **type** of cell shown above_____. [2 Marks]

(c) List one function of structure number 10_____ [2 Marks]

(d) The structure responsible for transportation of nutrients is number_____ [2 Marks]

(e) Solar energy is used to manufacture ATP in structure in number_____ [2 Marks]

A2. Identify the following microorganisms [6 Marks]

a) Unicellular non-nucleated microorganisms_____

b) Infectious agent that possess no genome_____

c) Microorganisms incapable of possessing both RNA and DNA at the same time_____

d) Non-photosynthetic disease causing cell walled eukaryotic organisms_____

e) Two examples of groups of organisms capable of functioning as normal flora are

i. _____

ii. _____

A3.Under classification of micro-organisms answer the following questions. [6 Marks]

a) Highest level of classification of cellular organisms_____

b) Number of kingdoms available_____

c) Kingdom that was used as a catchall for all organisms that could not fit in kingdom Animalia and Plantae_____

d) Between cellular and acellular microorganisms. Which organisms have scientific names that obey binomial nomenclature rules? _____

e) Give two reasons why classification of microorganisms is important

i. _____

_____

ii. _____

_____

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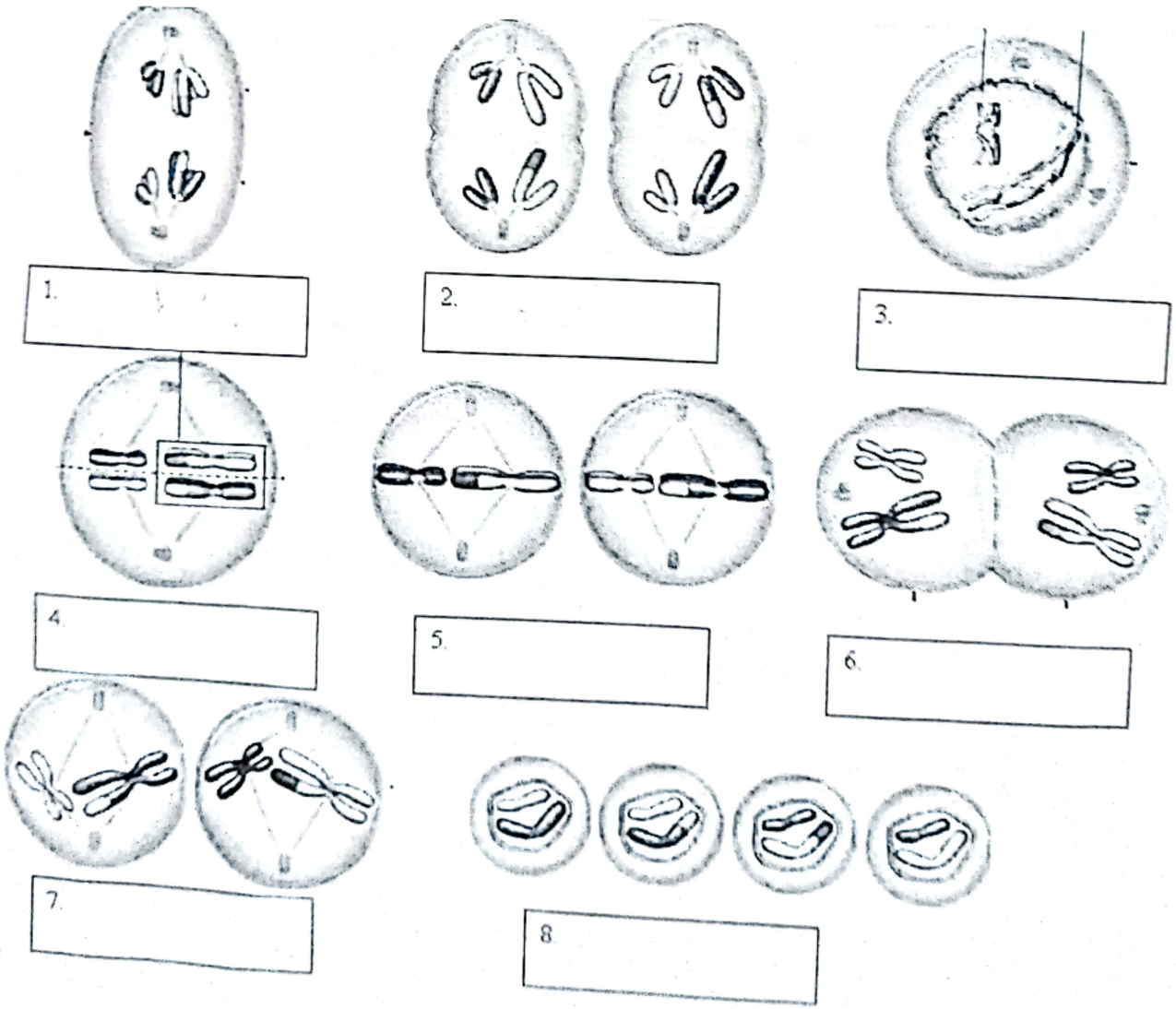
A4. State three major differences between the process of binary fission and mitosis. [3 Marks]

A5. Below is a diagram showing different stages of meiosis. Name each stage in the space provided. [8 Marks]



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(b) What would likely happen if a cell failed to undergo cytokinesis? [2 Marks]

(c) State 5 major differences between mitosis and meiosis. [5 Marks]

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SECTION B: QUIZ [10 Marks]

Write T for True and F for False in the space provided next to each of the statements;

_____ 1. Asexual reproduction always involves two parents.

_____ 2. Meiosis starts with one cell and ends with four.

_____ 3. "Crossing-over" can occur in meiosis I but not meiosis II.

_____ 4. Prokaryotes go through meiosis I and eukaryotes go through meiosis II.

_____ 5. A zygote is the first cell of a new organism.

_____ 6. Meiosis I and mitosis are very similar.

_____ 7. In humans, a gamete will have 23 chromosomes.

_____ 8. In binary fission, parent and offspring are identical.

_____ 9. In sexual reproduction, parents and offspring are never identical.

_____ 10. Gametes are diploid, a zygote is haploid.