

P530/1

BIOLOGY

Paper 1

1 Hour 30 Minutes



CLEVERLAND HIGH SCHOOL-MAYA

END OF TERM I EXAMS-2025

SENIOR FIVE

BIOLOGY

Paper One

INSTRUCTIONS:

- **Answer all items**

Item1

There is a debate among botanists about whether plant cells have lysosomes, as these structures are normally associated with animal cells, as some vacuoles in plant cells have hydrolytic enzymes and perform liposomal activities. Some botanists think that plant cells have lysosomes. This view is not universally accepted, as the lysosomes in plants do not carry out all the usual activities of the lysosomes found in animal cells.

- a) What are the usual activities carried out by lysosomes?
- b) As a student of Cleverland high school who has studied the ultrastructure of plant and animal cells, other than lysosomes what other cellular features are found in animal cells but not in plant cells.

Item2

Microscopy, the science of using microscopes to examine small objects, has diverse applications in fields like biology, medicine and forensics and materials science, enabling the study of cells, tissues, microorganisms, and materials at a microscopic level. As a student who has studied microscopy, you have been approached by a colleague for assistance who has been presented with a forensic report with unfamiliar terms. Use the knowledge of microscopy to explain to him the unknown terms

- a) Magnification and resolution
- b) Gram positive and gram negative
- c) Light microscope and Electron microscope.
- d) Artifacts and organelles.

SECTION B

Item3

During a senior five biology class, a teacher taught students that; in 1977, American microbiologist Carl Richard Woese and his co-workers discovered the third domain of life called Achaea (Kingdom-Arhaebacteria) based on distinctive 16S RNA signature sequences which had long been categorized as prokaryotic organisms. This became widely accepted as the third domain in 1990. Archaeobacteria are known to be the oldest living organisms on earth. They are completely distinct from prokaryotes. They can easily survive under very harsh conditions such as the bottoms of the sea the volcanic vents. However one of the students further requested for more information about their types and importance during study. With the knowledge that you have acquired about Arhaebacteria;

- a) Name any two types of Arhaebacteria
- b) How can the knowledge of Arhaebacteria be used to benefit society and the environment.

Item 4

Cleveland high school and Maya farmers Sacco under the parish development model entered into a partnership to grow tomatoes from a piece of land they had hired from the school, which would also later act as a demonstration garden to students. One day on a sunny day students found out that the farmers had transplanted their tomato seedlings to the main garden but to their surprise almost all the plants were weak and could not support themselves upright.

- a) What physiological processes could have been affected during the seedling transplantation?
- b) How would the problem be mitigated?

END

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