

BIOLOGY DEPARTMENT 2024

SENIOR FIVE BIOLOGY TEST ONE

CHAPTER: CELL BIOLOGY

Name..... Class

Instructions. Attempt all questions in section A and any 3 in section B

Section A (40 marks)

1. Explain the meaning of the following terms with examples. (04 marks)

i) Cell.

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ii) Cell organelle.

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iii) Protoplasm.

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iv) Cytoplasmic inclusion.

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2. In the space below, describe the structure of a **Prokaryotic** cell. (04 marks).

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3. Outline the similarities between *Prokaryotic* and *eukaryotic* cells. (04 marks).

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4. Explain the factors that affect the upper limit of cell size (04 marks).

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5. Explain the origin of eukaryotic cells according to the endosymbiotic theory (04 marks).

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6. Describe the structure of chloroplasts (Diagram not required). (04 marks)

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7. How is the chloroplast suited for its functions (04 marks)?

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8. Explain the significance of having membrane bound organelles in **eukaryotic** cells (04 marks).

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9. Explain the factors that affect membrane fluidity of the cell surface membrane. (04 marks).

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10. Explain the **evolutionary significance** of cell walls in bacterial and plant cells. (04 marks).

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SECTION B (60 marks)

11. (a) Describe the structure and functions of the Golgi apparatus in cells (10 marks)

(b) Describe how the Golgi apparatus functions inside living cells (10 marks)

12. (a) Outline the structural and functional comparisons between the chloroplast and the mitochondria (15 marks)

(b) Discuss evidences that support the Endosymbiotic theory for origin of Eukaryotic cells (05marks)

13. Discuss the theories of cell surface membrane structure in living organisms (20 marks)

14. Compare and contrast ***Prokaryotic*** and **Eukaryotic** cells (20 marks)

15. (a) Discuss the role of various **plastids** in plant and animal cells (10 marks)

(b) How are chloroplasts suited for their functions in plants (10 marks)

Practice until you can't get it wrong

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