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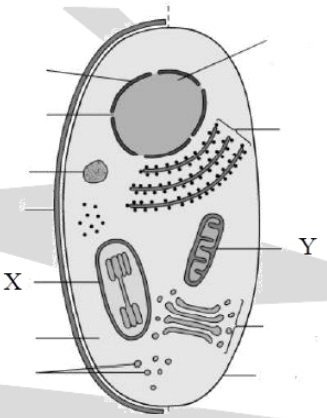
Module 1: Cells as the Basis of Life

Worksheet 1: Cell Structure

Multiple Choice

1. A diagram of a eukaryotic cell is shown.



What is the function of the organelles marked X and Y?

	X	Y
(A)	Protein Synthesis	Aerobic respiration
(B)	Packaging of proteins for secretion	Photosynthesis
(C)	Protein Synthesis	Packaging of proteins for secretion
(D)	Photosynthesis	Aerobic respiration

2. The word equation for photosynthesis is given below.

Water + substance 1 → substance 2 + oxygen

Choose the line below which correctly identifies substances 1 and 2.

	Substance 1	Substance 2
(A)	Glucose	Carbon dioxide
(B)	Chlorophyll	Glucose
(C)	Carbon dioxide	Glucose
(D)	Carbon dioxide	Chlorophyll

3. Which organelles are involved in energy transformations within eukaryotic cells?
   (a) Lysosomes and nucleus.
   (b) Ribosomes and mitochondria.
   (c) Mitochondria and chloroplasts.
   (d) Chloroplasts and Golgi apparatus.

Short Answer Questions

1. What are the three tenets of the cell theory (3 marks)

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2. Compare the cellular structure of eukaryotes and prokaryotes (4 marks)
   Note: Compare means to provide differences and similarities

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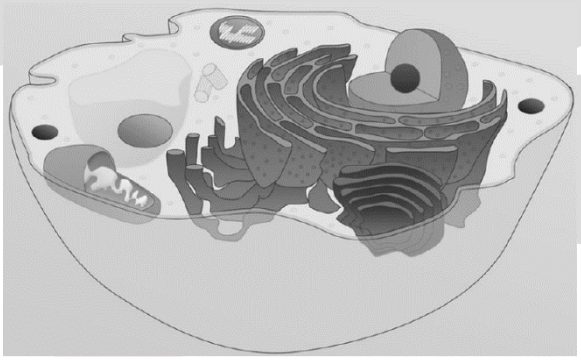
3. The following diagram depicts a eukaryotic cell.



   (a) Label THREE organelles in the diagram (3 mark)
   (b) Choose TWO of the organelles you identified in (a) and outline their function (2 mark)

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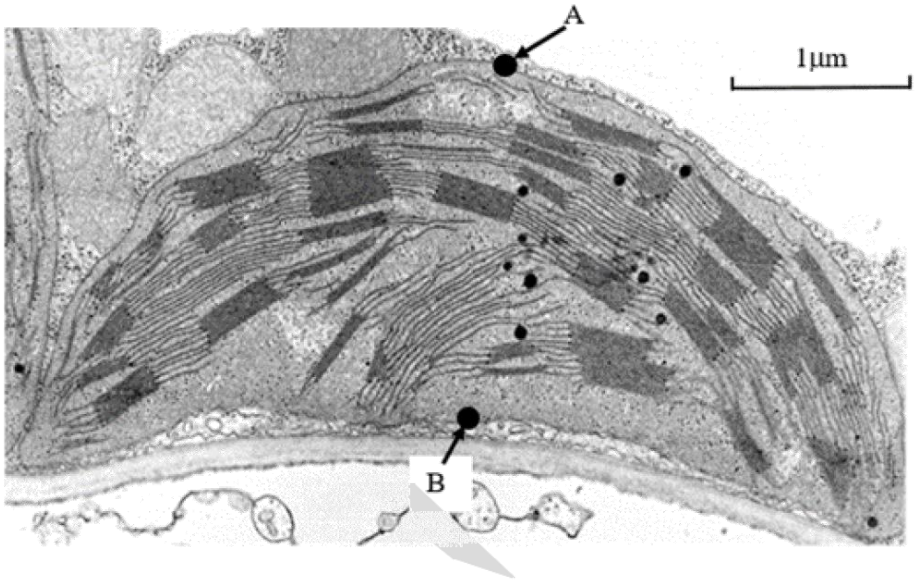
4. The electron micrograph below shows a cell organelle.



(a) Identify the organelle (1 mark)

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(b) Determine its width (The distance between points A and B) (1 mark)

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(c) Describe one characteristic feature of this organelle and explain how it helps it to perform its function (2 mark)

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5. Outline the steps involved in performing a Gram stain (3 marks)

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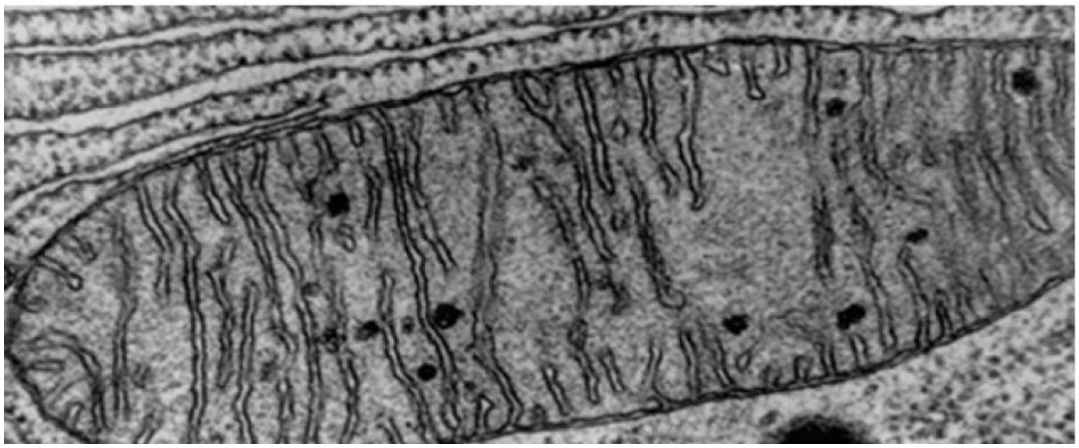
6. The photomicrograph below shows a cell organelle.



(a) Identify the organelle (1 mark)

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(b) Describe the function of this organelle. Include a chemical reaction in your response (2 mark)

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Extended Response

1. Draw a labelled diagram of a typical animal cell (5 marks)