

AQA, OCR, Edexcel

A Level

A Level Biology

Cell Structure Questions

Name:

M M E

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Total Marks: /33

Cell Structure

1. a) Figure 1 below shows a eukaryotic cell taken from an animal.
 - i. Label A and B. (2 marks)

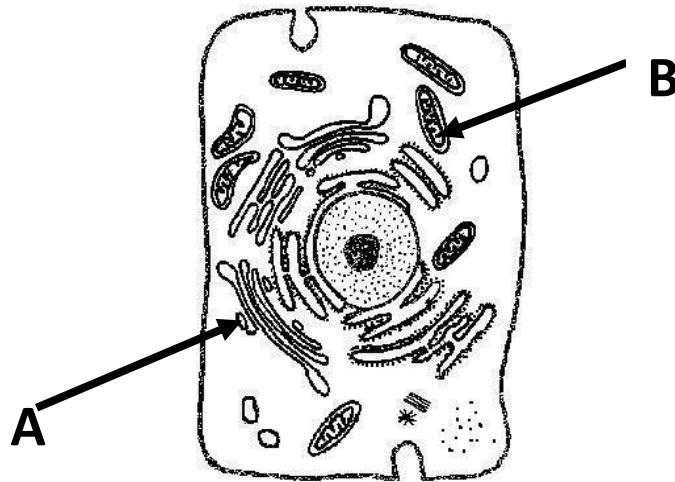


Fig. 1

- ii. Organelle B is found in high concentration in muscle. Explain why? (3 marks)
 - b) Suggest two ways in which a prokaryotic cell would look different to that shown in figure 1? (2 marks)
 - c) Identify 3 differences between plant and animal cells. (3 marks)
2. Prokaryotic cells and Eukaryotic cells have a number of distinct differences in their structure. However one theory suggests that Eukaryotic cells have evolved from endosymbiosis with prokaryotic cells, where smaller prokaryotic cells would live in the larger prokaryotic cell and eventually form the chloroplasts and mitochondria over many years of evolution that give us today's eukaryotic cells.
 - a) By comparing and contrasting prokaryotic and eukaryotic cells, evaluate this theory? (3 marks)

- b) A lysosome is found in eukaryotic cells.
- i. Describe the structure of the lysosome? (2 Marks)
- ii. What is the function of the lysosome? (1 mark)
3. DNA is the carrier of inheritable genetic information present in almost every living organism.
- a) How is chromosomal DNA stored in prokaryotic cells? (1 mark)
- b) What is a plasmid and what cell type is it found in? (3 marks)
- c) Describe the structure of the eukaryotic nucleus. (3 marks)
4. Years of evolution led to the emergence of multicellular organisms, which are comprised of specialised cells that are adapted to carry out a particular function.
- a) How have plant cells adapted so that they do not burst under hypotonic conditions? (1 mark)
- b) Cells lining the trachea have evolved in such a way that they have cilia on their surface. What is the purpose of these cilia and why are they advantageous to the organism? (2marks)
- c) Identify two ways in which a cell from the duodenum may be different from a cell from a quadriceps muscle and how these adaptations allow it to carry out its functions. (4 marks)
- d) What is the definition of a tissue? (2 marks)

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e) The heart is an organ, organs are made up of tissues.

i) Identify two tissues that make up the heart (2 marks)