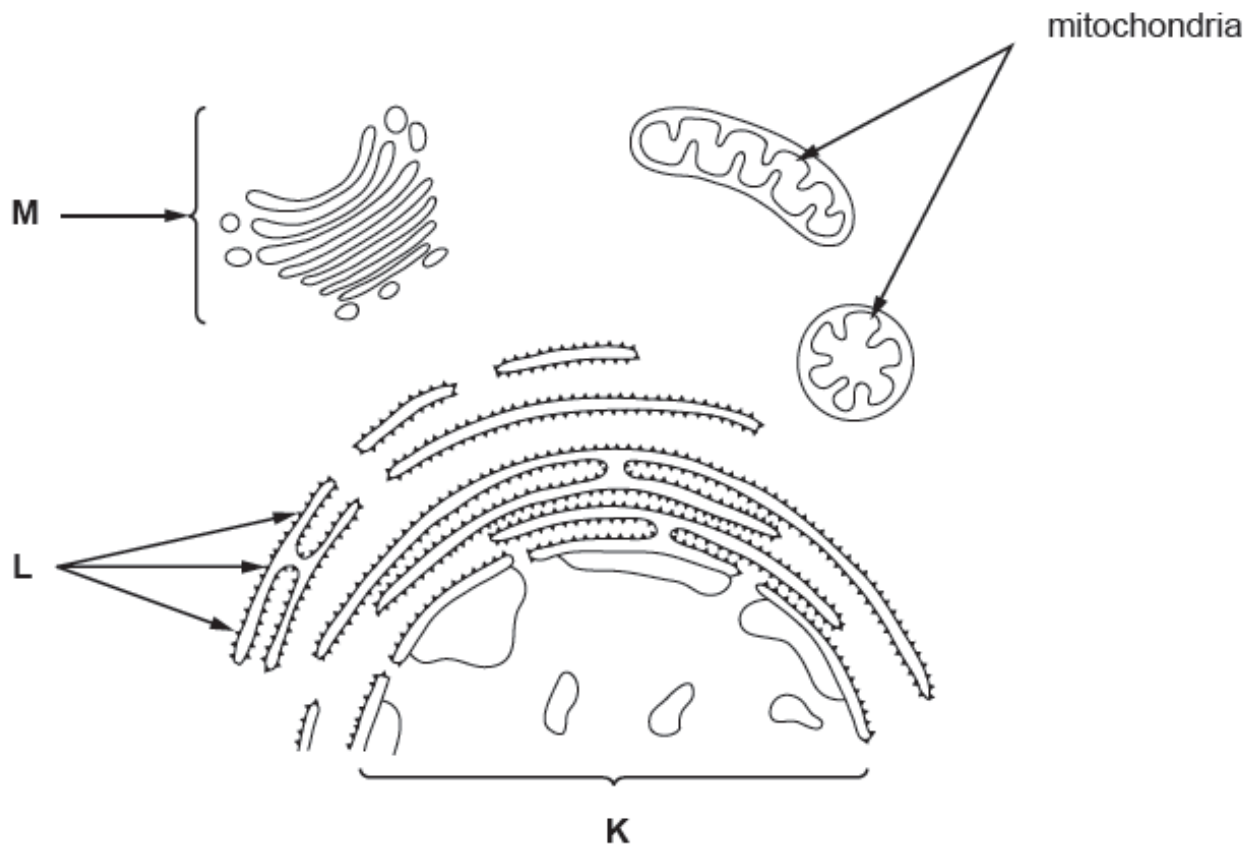


My Question Paper

1. The diagram below shows part of a generalised animal cell.



(a) Complete the table below.

[6]

Organelle	Name	Function
K		
L		
M		

(b) (i) Explain why the mitochondria labelled in the diagram above appear different from one another.

[1]

(ii) Nearly all eukaryotic cells possess mitochondria. Mitochondria are similar in size to prokaryotic cells and have features in common with them. This led to the biologist, Lynn Margulis, proposing that mitochondria evolved from ancient prokaryotes. The theory of endosymbiosis proposes that these ancient prokaryotes were engulfed by other bacterial cells and both benefited from the relationship - this led to the evolution of eukaryotic cells.

Using your knowledge, state which **two** structures found in prokaryotic cells are also found in mitochondria.

[2]

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(iii) Describe **two** differences between mitochondria and prokaryotic cells such as bacteria.

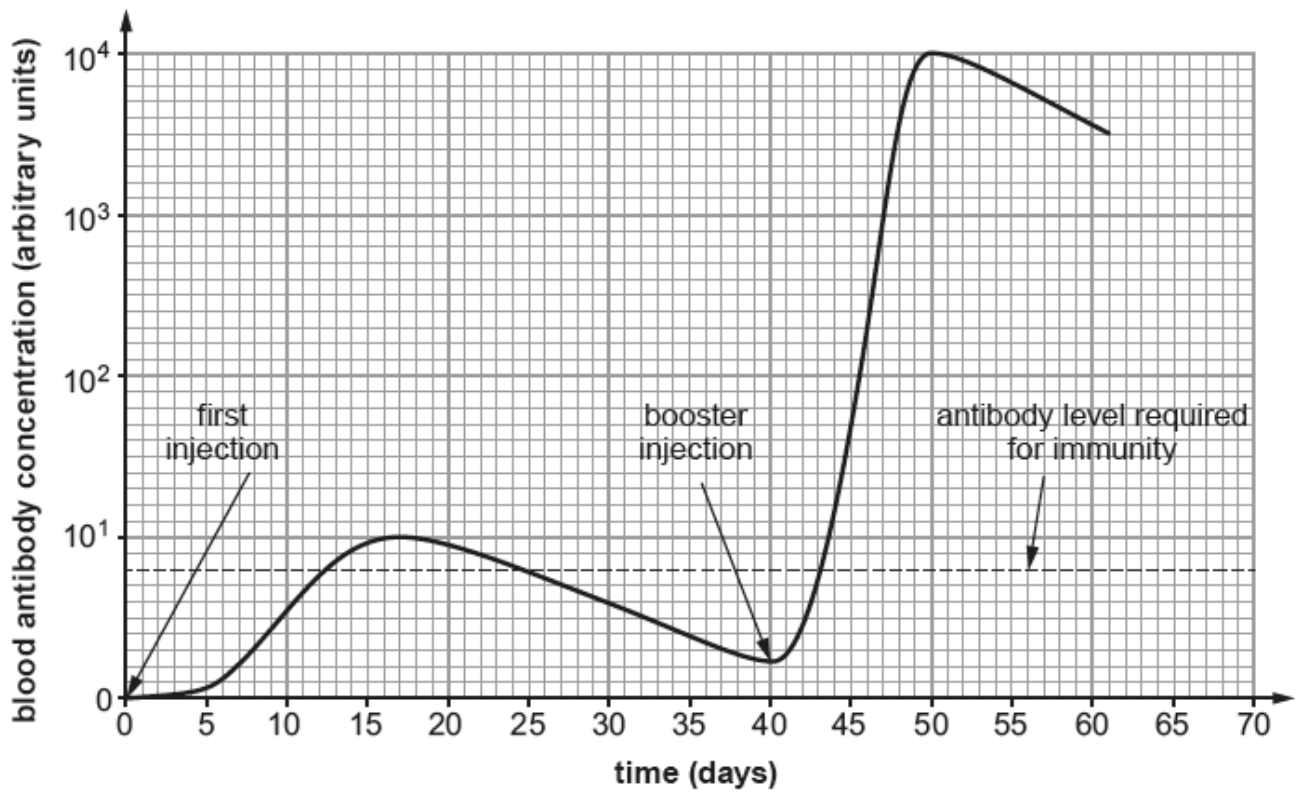
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2. The graph shows how blood antibody concentration against Rubella changed in a 12 month old child following an injection with Rubella antigen at day 0 followed by a booster injection at day 40.



(a) (i) State the time taken to produce the antibody level required for immunity following the first injection with Rubella antigen.

[1]

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(ii) Explain why the time taken to produce the antibody level required for immunity was much shorter following the booster injection.

[2]

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(b) The child, who had not been exposed to measles previously, was given a separate immunisation against the measles virus at Day 40 - the same day that she received the booster injection against *Rubella*.

(i) On the graph opposite, draw a line to show how the blood antibody concentration against **measles** changes from the immunisation at **day 40** to **day 60**.

[3]

(ii) Explain why the blood antibody concentration against measles would change in this way.

[2]

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3. (a) Name the following:

(i) A device containing an enzyme that can be used to detect a specific compound in a fluid.

[1]

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(ii) An aggregation of similar cells carrying out the same function.

[1]

.....

(b) Give one structural difference between each of the following:

(i) prokaryotic and eukaryotic cells;

[1]

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(ii) chloroplasts and mitochondria.

[1]

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