

(b) Explain why there is no build up in the concentration of phosphate ions inside mitochondria as a result of the inward passage of phosphate ions.

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..... [2]

(c) Triose phosphate moves out of chloroplasts by passing through carrier proteins that are part of the chloroplast envelope. These proteins allow an inorganic phosphate ion to pass inwards at the same time as triose phosphate moves outwards.

Suggest why the movement of triose phosphate out of chloroplasts is an example of facilitated diffusion rather than active transport.

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..... [2]

(d) Many biologists believe that both mitochondria and chloroplasts evolved, at an early stage in the history of the earth, from prokaryotic organisms that inhabited the cytoplasm of eukaryotic host cells.

State **two** structural features of mitochondria and chloroplasts that are also present in prokaryotic cells.

1
.....
2
..... [2]

[Total: 10]