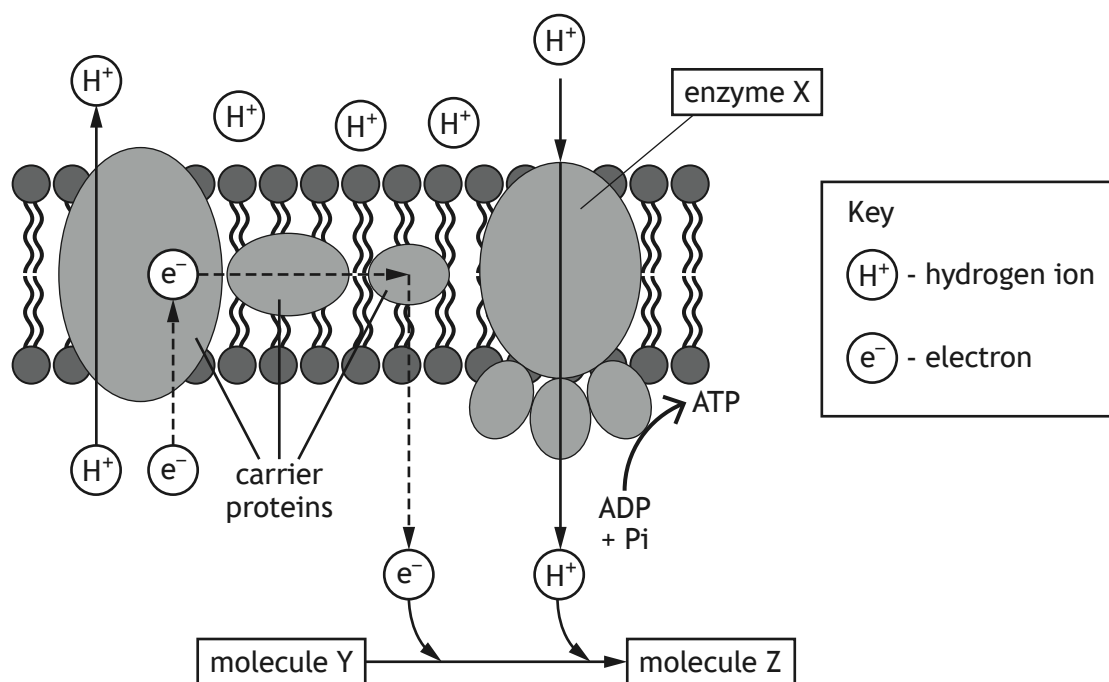


7. The diagram illustrates how ATP is produced in the electron transport chain.

**MARKS** DO NOT WRITE IN THIS MARGIN



- (a) (i) State the exact location of the electron transport chain in eukaryotic cells.

1

- (ii) Name enzyme X.

1

- (iii) Name molecules Y and Z.

2

Y \_\_\_\_\_ Z \_\_\_\_\_

- (b) Describe the role of the co-enzyme NAD.

2

- (c) Mitochondrial disease can be caused by a mutation that alters the structure of the carrier proteins shown in the diagram.

Suggest how the altered structure of these proteins can lead to reduced ATP production in individuals with this mutation.

2



\* X 8 0 7 7 6 0 1 1 3 \*