12 This question is about an electric fan.

(a) A battery supplies a voltage of 12 V and a current of 0.25 A to the fan.

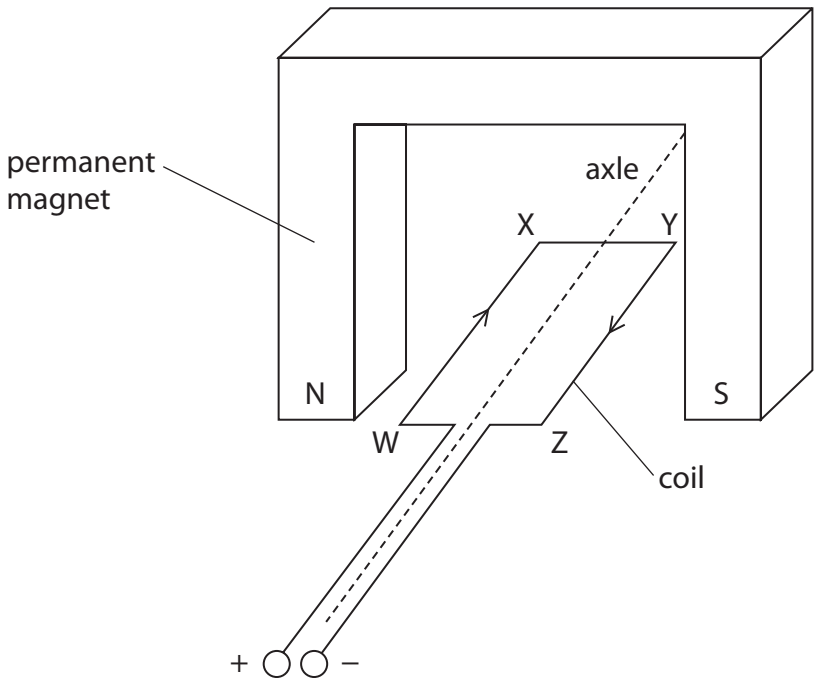
The fan is switched on for 12 seconds and the fan gains 25 J in its kinetic energy store.

Calculate the efficiency of this energy transfer.

(4)

efficiency = ... %

(b) The diagram shows part of the electric motor inside the fan.



(i) Explain why the coil starts to rotate when there is a current in the coil.

(4)

(ii) Which side of the coil moves vertically upwards?

(1)

- ☒ **A** WX
- ☒ **B** XY
- ☒ **C** YZ
- ☒ **D** ZW

(Total for Question 12 = 9 marks)

TOTAL FOR PAPER = 110 MARKS

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