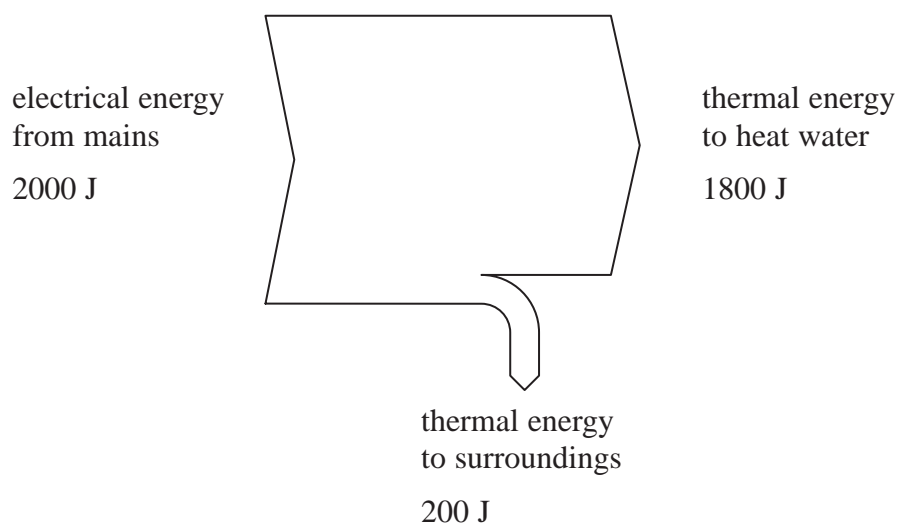


7 This question is about an electric kettle.



(a) The Sankey diagram represents the energy transfers taking place when the kettle heats some water.



What is the efficiency of the kettle?

(1)

- ☐ A 0.1
- ☐ B 0.9
- ☐ C 200
- ☐ D 1800



- (b) Why does the heating element in the kettle get hot when its electrical supply is switched on?

(2)

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- (c) The power of the heating element in the kettle is 2000 W when it is connected to a 230 V mains supply.

- (i) State the equation linking power, current and voltage.

(1)

- (ii) Show that the current in the heating element is approximately 9 A.

(2)

Current = A

- (iii) The plug of the kettle has a fuse.

Fuses are available in values of

1 A 3 A 7 A 13 A

Identify the fuse that is the most suitable for this kettle, and explain why.

(2)

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(Total for Question 7 = 8 marks)

