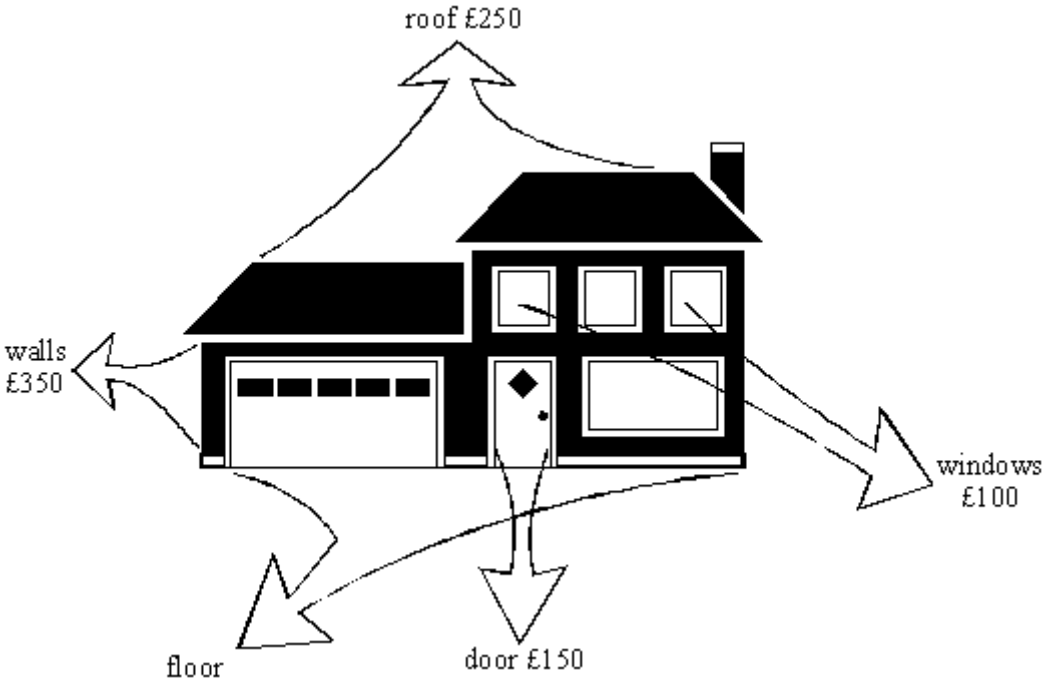
Name of the Student:_____

Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

The diagram below shows a house which has **not** been insulated. The cost of the energy lost from different parts of the house during one year is shown on the diagram.



(a) The total cost of the energy lost during one year is £1000.

(i) What is the cost of the energy lost through the floor?

_____

(2)

(ii) Suggest one way of reducing this loss.

_____

(1)

(b) The table below shows how some parts of the house may be insulated to reduce energy losses. The cost of each method of insulation is also given.

WHERE LOST	COST OF ENERGY LOST PER YEAR (£)	METOD OF INSULATION	COST OF INSULATION (£)
roof	250	fibre-glass in loft	300

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walls	350	foam filled cavity	800
windows	100	double glazing	4500
doors	150	draught proofing	5

(i) Which method of insulation would you install first? Explain why.

_____

_____

_____

_____

(3)

(ii) Which method of insulation would you install last? Explain why.

_____

_____

_____

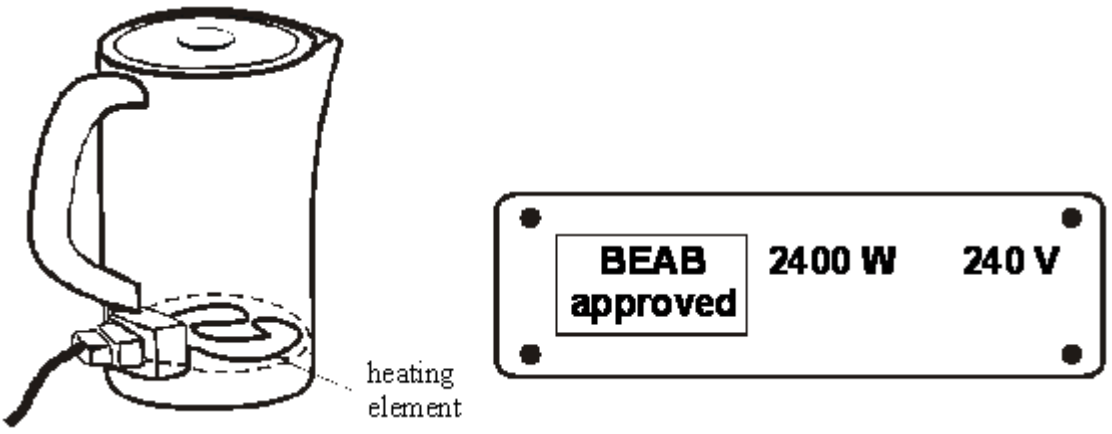
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(3)

(Total 9 marks)

Q2.

The diagram below shows an electric kettle and the label on the bottom of the kettle.



The water at the bottom of the kettle will heat up first.
This is because the heating element is near the bottom of the kettle.
Convection currents will then cause the rest of the water in the kettle to be heated.

(i) What are convection currents?

_____

(1)

(ii) Explain how convection currents are produced.
(Your answer should refer to **density** and **temperature**.)

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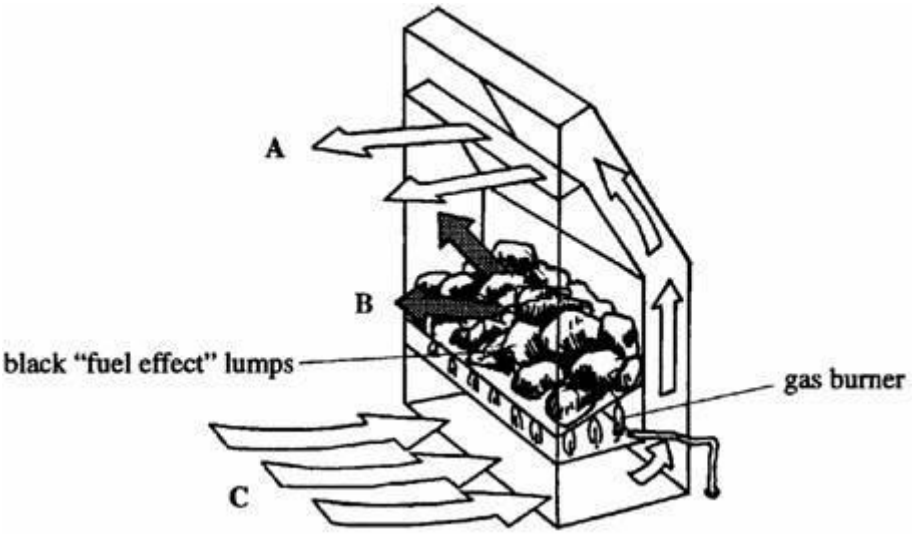
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(4)

(Total 5 marks)

Q3.

The diagram comes from a leaflet about a "coal effect" gas fire.
It shows how air circulates through the fire.



(a) Explain in detail why the air travels from **C** to **A**.

_____

_____

_____

_____

_____

_____

(4)

(b) The black "fuel effect" lumps become very hot.

(i) Name the process by which the lumps transfer thermal energy to the room as shown at **B**.

_____

(1)

(ii) Suggest **one** feature of the black "fuel effect" lumps which make them efficient at transferring energy.

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_____

_____

(1)
(Total 6 marks)

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