**Internal energy and energy transfers**

1. Define internal energy.

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1. Which of the following will change the internal energy of a stone? (circle the correct answer
2. Lifting it to the top of a building
3. Heating it
4. Firing it from a catapult
5. Water and the chemical isooctane both boil at 1000C. When the same mass of each substance is placed on a heater, the isooctane boils first. Explain why this happens.

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4. A hot stone is placed into a glass of water containing 200 g of cold water. The stone transfers 25 200 J of energy to the water. How much will the temperature of the water rise?

**specific heat capacity of water = 4200 J/kg oC ΔE = m *c* Δθ**

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5. What is specific latent heat?

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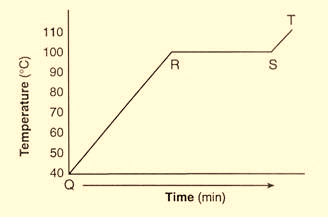
6. Explain the difference between latent heat of fusion and latent heat of vaporisation.

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7. A boiler is being used to heat water. The graph shows the temperature of the water every

5 minutes.



a. What state is the water in between points

Q and R?

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b. At which point does the water begin

to evaporate?

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c. What state is the water in at 110 0C?

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1. Candle wax has a latent heat of fusion of 200 000 J/kg. If the candle is at its melting temperature, how much heat energy is needed to melt a 250 g candle?

**E = m Lf**

Heat energy = \_\_\_\_\_\_\_\_\_\_\_\_\_\_