Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science_Particle Model Of Matter (Low Demand Questions)

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Name of the Student:_____

Max. **Marks : 18 Marks**   **Time : 18 Minutes**

Q1.

A student heated water in an electric kettle.

(a)   Water has a high specific heat capacity.

Complete the sentence.

Choose answers from the box.

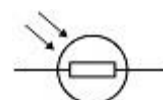| °C	J	kg	s	W

The specific heat capacity of a substance is the energy needed to raise the

temperature of 1 _____ of the substance by 1 _____.

(2)

(b)   The kettle circuit contains a thermistor which is used to switch the kettle off when the water reaches 100 °C.

What is the correct symbol for a thermistor?

Tick (✓) **one** box.

(1)

(c)   The resistance of the heating element in the kettle is 15 Ω.

The current in the heating element is 12 A.

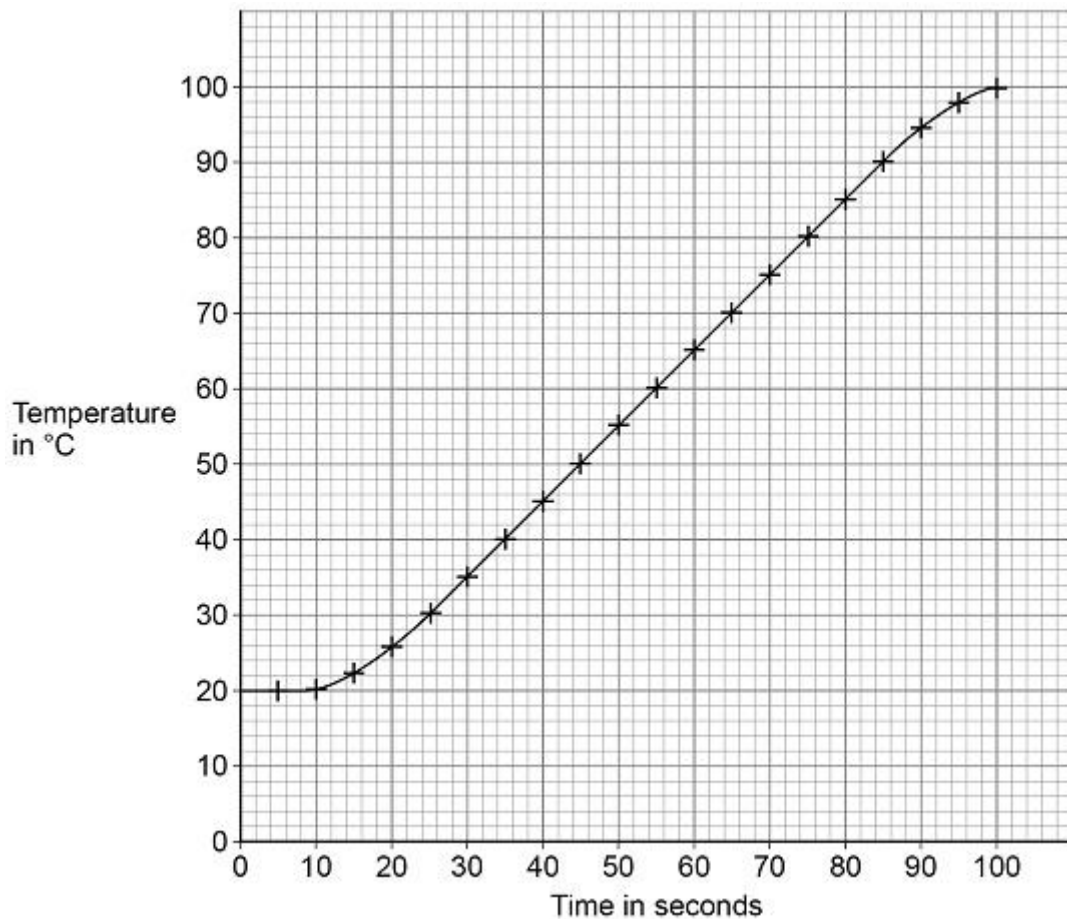Calculate the power of the heating element.

Use the equation:

$$power = (current)^2 \times resistance$$

_____

_____

_____

_____

_____

Power = _____ W

(2)

The student investigated how quickly the kettle could increase the temperature of 0.50 kg of water.

The graph below shows the results of the investigation.

(d)   The temperature of the water did **not** start to increase until 10 seconds after the kettle was switched on.

What is the reason for this?

Tick (✓) **one** box.

Energy is transferred from the surroundings to the kettle. ☐

The charge flows slowly through the kettle circuit. ☐

The heating element in the kettle takes time to heat up. ☐

The power output of the kettle increases slowly. ☐

(1)

(e) Describe a method the student could have used to obtain the results shown in the graph.

_____

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(6)

(f) The mass of water in the kettle was 0.50 kg.

The temperature of the water increased from 20 °C to 100 °C.

specific heat capacity of water = 4200 J/kg/°C

Calculate the energy transferred to the water.

Use the Physics Equations Sheet.

_____

_____

_____

_____

_____

Energy = _____ J

(3)

(g) The water in the kettle boiled for a short time before the kettle switched off.

During this time 5.0 g of water changed to steam.

specific latent heat of vaporisation of water = 2 260 000 J/kg

Calculate the energy transferred to change the water to steam.

Use the Physics Equations Sheet.

_____

_____

_____

_____

_____

Energy = _____ J

(3)
(Total 18 marks)