For Examiner's Use

**2** **(a)** A student uses the apparatus shown in Fig. 2.1 to determine the specific heat capacity of a liquid.

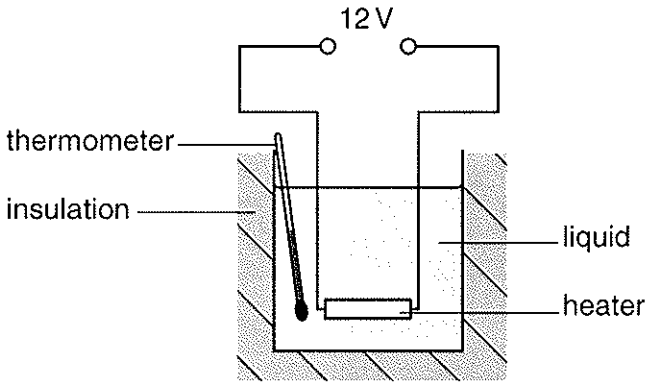


**Fig. 2.1**

A power supply of potential difference 12 V is connected to a heater of resistance 2.4 Ω. The mass of liquid is 140 g. The temperature of the liquid changes from 25 °C to 45 °C in 210 s.

Calculate

**(i)** the power of the heater,

power = ..... W [2]

**(ii)** the student's value for the specific heat capacity of the liquid.

specific heat capacity = ..... $J kg^{-1} K^{-1}$ [3]

**(b)** The accepted value for the specific heat capacity of this liquid is 4200 $J kg^{-1} K^{-1}$. The uncertainties in the measurements in **(a)** cannot account for the difference. Suggest a cause for this difference.

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.....[1]