

- 2 (a) A resistance thermometer and a thermocouple thermometer are both used at the same time to measure the temperature of a water bath.

Explain why, although both thermometers have been calibrated correctly and are at equilibrium, they may record different temperatures.

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[2]

- (b) State

- (i) in what way the absolute scale of temperature differs from other temperature scales,

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[1]

- (ii) what is meant by the absolute zero of temperature.

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[1]

- (c) The temperature of a water bath increases from 50.00 °C to 80.00 °C.  
Determine, in kelvin and to an appropriate number of significant figures,

- (i) the temperature 50.00 °C,

$$\text{temperature} = \dots \text{K} [1]$$

- (ii) the change in temperature of the water bath.

$$\text{temperature change} = \dots \text{K} [1]$$