Checking a Temperature Probe on Reversal

Scoring guide · one credit per question · review written work against each rubric

Checking a Temperature Probe on Reversal

Question 1

Choice (2)

The two readings agree while the bath is held at 30.0 °C. They differ by 3.0 °C during both warming and cooling.

Question 2

During warming the error is 27.0 − 30.0 = −3.0 °C. During cooling it is 33.0 − 30.0 = +3.0 °C.

Question 3

Adding 3.0 °C makes the warming reading 30.0 °C, but it changes the cooling reading to 36.0 °C. The 6.0 °C cooling error exceeds the limit, so the correction fails.

Question 4

Run the same controlled warming and cooling schedule for each cover in the stirred bath. Compare the covered and reference readings at matched times for both covers. Smaller absolute errors show an improvement. For the thin cover to pass the test, every thin-cover reading must differ from its simultaneous reference by at most 1.0 °C. Accept equivalent designs that control the bath conditions and compare simultaneous readings.