

PROCEDURE

Make and calibrate the three kinds of thermocouples as per instruction. Note that calibration is very important for the actual emf - temperature relationship depends on the quality of hot and cold junctions and particularly on the impurities in them.

You have to measure two temperatures of the same order. The first temperature is rapidly changing and you need to measure an instantaneous temperature as accurately as possible. The life time of the thermocouples is not important. The second temperature is more or less constant but your thermocouple is supposed to be used during the longest period possible.

60 DATA

Single Junction Thermocouple Instantaneous EMF Values

Instantaneous Temperature ($^{\circ}\text{C}$)	EMF (mV) (on heating)	EMF (mV) (on cooling)
0	0	0.0
30	0.8	0.8
40	1.2	0.9
50	1.5	1.4
60	2.1	1.9
70	2.4	2.3
80	2.9	2.7
90	3.4	3.2
95	3.5	3.5

21 $^{\circ}\text{C}$ as Room Temperature