

PHYS 201

Pre-Lab 04

High-Temperature Superconductivity

Name: _____ **Sec./Group:** _____ **Date:** _____

1. a) A typical indoor temperature is 21°C . A typical outdoor temperature for Fairbanks, Alaska in January is -2°F . What are these temperatures in the Kelvin scale ?

b) Liquid nitrogen boils at 77 K . What is this temperature in degrees Fahrenheit?

2. In the DC Resistance part of this Experiment (See page 2 of Lab Writeup), we use a 15 ohm resistor to protect the equipment. What would happen if we ran the experiment without the resistor? (Don't do this!)

3. Look up and express in your own words what is the difference between a paramagnetic and diamagnetic material. (Your book does not discuss magnetic properties extensively but you can use physics resources on the Internet as well).