

Name _____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. (a) What does electrically neutral mean? (b) What is a Faraday ice pail? Please give detailed explanations. (5 pts)

2. (a) How does an electrometer differ from a voltmeter? (b) What is meant by electrical ground? (c) What must you do before each measurement in this experiment, and why? (5pts)

3. Consider two identical conducting spheres placed on identical nonconductive mounts. Initially, both spheres have no net charge. *Sphere #2* is then connected to a +3000 *volt* source, acquiring a positive net charge. *Sphere #1* is placed near *Sphere #2* (without touching it). State the sign of the charge at points *a*, *b*, and *c*. Explain why? (10 pts)

