PHYSICS DEPARTMENT
College of Science
De La Salle University – Manila

CENTRIPETAL FORCE

Guide Questions
40% of the Written Report (Group Report) grade

1. Based on your data in Table 1, what happens to the period of revolution as the radius is increased? If the radius is doubled, by how much should the period of revolution increase or decrease?

2. In Part I of the experiment, the centripetal force is maintained constant as the radius is increased. What is the shape of your plot of $\mathbf{T^2}$ **vs. r** (where T = period and r = radius)? Show how you can compute the centripetal force F_c from the slope of the T^2 vs. r plot.

3. Based on your data in Table 2, what happens to the frequency of revolution as the centripetal force is increased? If centripetal force is doubled, by how much should the frequency of revolution increase or decrease?

4. In Part II of the experiment, the radius of orbit is maintained constant as the centripetal force is increased. What is the shape of your plot of $\mathbf{f^2}$ **vs.** $\mathbf{F_c}$ (where f = frequency and F_c = centripetal force)? Show how you can compute for the mass **m** of the object from the slope of $\mathbf{f^2}$ **vs.** $\mathbf{F_c}$ plot.

5. Discuss possible sources of error in this experiment.