PHYS 212 Study Guide for Test #2     Chapters 21,22, 23 & 24

Format will be similar to Test #1, consists of questions, derivations, and problems.

 1. Chapter Reading and Wiley Plus assignments.

 2. Understanding and using Coulomb’s law in problem solving. 
 3. Understanding and using Gauss’ law in problem solving.
$$ε\_{0}∮\_{}^{}\vec{E}∙\vec{dA}=q\_{enc}$$

4. Defining electric field and deriving the following expression for the magnitude of electric field at a distance r from a point charge, q: 

5. Determining potential due to point charges and continuous charge distributions.
$ V=k\frac{q}{r}$  

6. Determining the electric field from the potential.
 $\vec{E}=-\frac{dV}{dz}$ 

7. Determining strength and polarity of electric charges from electric field lines.

8. Determining the net electric field due to multiple point charges.

9. Determining the electric field due to continuous charge distributions.

10. Understanding vectors and how to find their sum.

11. Calculating electric flux using the vector dot product.

12. Drawing free-body diagrams and solving equilibrium problems.

13. Solving circular motion problems. 

14. Explaining the following to a lay person: Coulomb’s law, Oil-Drop experiment, and Gauss’s law.

15. <https://www.youtube.com/watch?v=L1n2EUvayfw> watch this video.