PHYS 212 S2012 Study Guide for Test #4     Chapters 27,28,29&30

Test will consist regular questions, derivations, and problems.

1. Chapter Reading.

2. Practice WileyPlus assignments.

Chap 27: 

Ohm’s law: v = iR Power:   



Analyzing circuits using loop rule.

Understanding the behavior of RC circuits.

Chap 28:

Electric force on a charge: $ \vec{F}=q\vec{E}$

Magnetic force on a moving charge: 

Net force on a moving charge in electric and magnetic fields: $\vec{F}=q\vec{E}+q\vec{v}×\vec{B}$

A Charged Particle Circulating in a Magnetic Field:

**Magnetic Force on a Current-Carrying Wire** A straight wire carrying a current *i* in a uniform magnetic field experiences a sideways force

|  |
| --- |
| http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif |
| http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c28/math159.gif |  |

|  |
| --- |
| **Chap 29: Magnetic Field of a Long Straight Wire:**  |
| http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c29/math011.gif  |    |
| http://edugen.wiley.com/edugen/courses/crs1650/art/common/pixel.gif |



Finding magnetic field using Ampere’s law and Biot-Savart law.

**Chap 30: Faraday’s law of induction and Lenz’s law.**