

Final Review: (You may bring 1 sheet filled on both sides to the exam.)

Chapter 27

- Magnetic force
 - On a particle $\vec{F} = q_{test} \vec{v} \times \vec{B}$ (1, 3, 19, Quiz#5)
 - On a current carrying wire $\vec{F} = I_{test} \vec{L} \times \vec{B}$ (33, 39, 63, 72, 77)
- Kinematics:
 - Circular motion when acceleration constant, i.e. \vec{B} is a “uniform field.” (22, 24)
 - Linear motion when acceleration is zero like in velocity selector (28)
- Gauss’ Law of Magnetism (15)

Chapter 28

- Magnetic field from
 - A particle or a short segment of wire: Biot-Savart Law (1, 3, 9, 13)
 - Long straight wire (15, 20, 25, 53, 56, 63)
 - Loop of wire
 - Solenoid (41)
- Superposition of Magnetic Fields:
 - Magnetic fields add as vectors (13, 21, 23, Quiz #6)
 - Use integration to sum the magnetic field vectors when the current is continuous. (31, 66)
- Ampere’s Law (35)

Chapter 29

- Faraday’s Law for numerical values of *emf*. (1, 5, 10, 33)
- Lenz’s Law for direction of $B_{induced}$ and $I_{induced}$ (15, 17, 26)
- The original B-field causes a force on $I_{induced}$. Also, $emf = I_{induced}R$. (26, 65)