# BASIC ELECTRONICS – FINAL EXAM

**Name.** _____

**Date.** _____

**Instructions.** This is a timed test that must be completed in 15 minutes or less. It is not necessary to answer the bonus question.  For all questions the following values apply:

| | |
|---|---|
| Vin = 12 VDC | All resistors = 10K $\Omega$ |
| All capacitors = 2 $\mu$f | Resistance value of wire of any length = 15.001 $\Omega$ |
| All coils = 2H | All mutual inductance will be 2H aiding |

**Questions.**

**1.** (95 points) Calculate the total impedence for the circuit shown below:  Z = _____

**2.** (Bonus, 10 points) Calculate the resonant frequency of the circuit shown below.  $f$ = _____