

## Lab: AC Problems 2

Name \_\_\_\_\_ Period \_\_\_\_\_

### *Rounding off to one significant digit,*

- a. **Diagram** a series circuit with a 3 henry coil, a 0.00002 farad capacitor, and a 1000 ohm resistor powered by a 150 volt 60 Hz generator.
- b. find the inductive reactance,  $X_L$  . (ans. 1000 ohms )
- c. the capacitive reactance,  $X_C$  . (ans. 100 ohms )
- d. **sketch** the vector diagram and label it with  $X_L$  ,  $X_C$  , and R.
- e. solve for the impedance, Z. (ans. 1300 ohms, round to 1000 ohms)
- f. find the amperage, I. (ans 0.2 a )
- g. find the resonant frequency, f. ( ans. 20 Hz )
- h. find the phase angle, *theta* . ( ans.  $40^\circ$  )
- i. find the power, P. ( ans. 20 watts )

### CRITIQUE: