

BLITZ: Ch 21, 22, 24, Electricity**Form T-Z**

Name _____ Period _____

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:**You MUST HAND WRITE THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!**

- Diagram and explain how the Microwave Oven works.
- What is the Domain Theory of Magnetism? Give 10 evidences supporting it.
- Define these terms: farad, henry, volt, coulomb, ampere, watt.
- Explain how the solid state diode rectifier works.
- Tell about inductive and capacitive reactances, impedance, and power factor.
- Diagram and explain how the three phase generator works and how it synchronizes with the three phase motor.
- Rounding off to one significant digit, **a.** diagram a series circuit with a 1 henry coil, a 0.00003 farad capacitor, and a 800 ohm resistor powered by a 120 volt 60 Hz generator. **b.** Find the inductive reactance, X_L , **c.** the capacitive reactance, X_C , **d.** sketch the vector diagram and label it with X_L , X_C , and R, **e.** solve for the impedance, Z, **f.** find the amperage, I, **g.** find the resonant frequency, **h.** find the phase angle. **i.** find the power.
- A step-up transformer is used on a 250v line to give 24000v. If the primary has 75 turns, find the number of turns on the secondary.
- Diagram and explain the Edison Hookup for home electricity
- Discuss why power is transmitted at high voltage in terms of the equations of resistance, heat loss, and power.
- Diagram a Cathode Ray Tube, label the parts, and tell how it draws a picture on the screen.
- Diagram a TV Receiving tube, label the parts.
- Diagram a TV Color Camera, label the parts.
- Diagram a Transistor Amplifier and compare it to a Vacuum Tube Amplifier.
- Diagram an Electron Microscope and label its parts.

FORMULAS:

$$X_L = 2\pi fL \quad X_C = \frac{1}{2\pi fC} \quad X = X_L - X_C \quad Z = \sqrt{R^2 + X^2} \quad V = IZ \quad P = VI\cos\theta \quad I = \frac{V}{Z}$$

$$\text{at resonance } X_L = X_C \quad f = \frac{1}{2\pi\sqrt{LC}} \quad \text{phase angle} = \text{invtan} \frac{X}{R} \quad \frac{N_s}{N_p} = \frac{V_s}{V_p}$$

When finished, please STAPLE this exam onto your papers and turn in on due date.