BLITZ: Ch 21, 22, 24, AC Electronics, Magnetism, Induction

Form A-C

Name _____ **Period** _____

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

1. Rounding off to one significant digit, **a.** diagram a series circuit with a 2 henry coil, a 0.00002 farad capacitor, and a 1000 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.

2. Tell about inductive and capacitive reactances, impedance, and power factor.

3. Diagram a replusion-induction electric motor and tell how it works.

4. Diagram and explain the three phase generator connected to the three phase motor and is synchronized.

5. Diagram and explain the solid state diode (rectifier).

6. Diagram and explain how the Microwave Oven works.

7. Diagram a power supply with a full wave rectifier and filter circuit and tell how it smoothes out AC ripple.

8. What is the Domain Theory of Magnitism? Give 10 evidances supporting it.

9. A step-up transformer is used on a 115v line to give 2400v.   If the primary has 75 turns, find the number of turns on the secondary.

10. Discuss why power is transmitted at high voltage in terms of the equations of resistance, heat loss, and power.

11. Diagram a Cathode Ray Tube, label the parts, and tell how it draws a picture on the screen.

12. Diagram a TV Receiving tube, label the parts.

13. Diagram a TV Color Camera, label the parts.

14. Diagram a Transistor Amplifier and compare it to a Vacuum Tube Amplifier.

15. Diagram an Electron Microscope and label its parts.

FORMULAS:

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

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

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