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

Form S

Name _____ Period ____

EXPLAIN IN COMPLETE SENTENCES AND GIVE EXAMPLES:

You MUST HAND WRITE THIS EXAM!! NO TYPED PAPERS WILL BE ACCEPTED!

1. A step-up transformer is used on a 230v line to give 12000v. If the primary has 100 turns, find the number of turns on the secondary.
2. Rounding off to one significant digit, **a.** diagram a series circuit with a 3 henry coil, a 0.00001 farad capacitor, and a 600 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.
3. Diagram and explain how three phase power is produced and how the three phase motor is synchronized.
4. Diagram a power supply, full wave rectifier, filter circuit and tell how they produce pure, smoooth DC.
5. Show how the commutator converts AC from the generator's armature into pulsating DC.
6. What is the Domain Theory of Magnitism? Give 10 evidances supporting it.
7. Diagram and explain the Edison Hookup for home electricty.
8. Tell about inductive and capacitive reactances, impedance, and power factor.
9. Diagram and explain the solid state diode rectifier.
10. Diagram and explain how the Microwave Oven works.
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:

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

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

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