Unit 8 – Vocabulary and Equations – Magnetism & Induction

Vocabulary:
previous vocabulary
magnetism, electromagnet, ferromagnetism
permanent magnet, natural magnet, lodestone
magnetic field (B), vector, magnetic field lines
field force, magnetic field strength, domain theory
magnetic North Pole, geographic North Pole
induction, motor, generator
primary coil, secondary coil
magnetic south pole, dipole, geographic north pole
right-hand rule, Tesla (T), Coulomb (C), Amp (A)
Lenz's law, Faraday's law of induction

Symbols:
N, V, B, A, q, v, ε, Δt

Equations & constants:
You get these on test:

Transformer equation: $\frac{N_1}{V_1} = \frac{N_2}{V_2}$

Unit Objectives – Williams

1. I understand all the vocabulary & math of this unit and all demos, videos, equations, and class assignments.
2. I remember objectives & vocabulary from previous units.
3. I understand the relationship between electrical charges and how magnetism is fundamentally produced
4. I understand magnetism fundamentally, know it's a field force, has a dipole and produces repulsive and attractive forces
5. I know what domain theory is and how it explains how permanent magnets are made
6. I can explain three ways to demagnetize a magnetized object: heating, shock, opposing mag. field
7. I can name three ferromagnetic materials and what makes them ferromagnetic on an atomic level
8. I know which pole magnetic field lines enter/exit and the kind of pole near earth's geographic north pole
9. I understand where magnetic field strength is greatest and can make sense of a magnetic field diagram
10. I can explain the theoretical cause of earth's magnetic field and the consequences if we had none
11. I am able to use the right hand rule and alternate right hand rule
12. I know the means of the symbols: arrow, x and dot for the direction of a magnetic field
13. I know how to increase magnetic field strength using multiple coils
14. I understand the relationship between rate of changing magnetic field and induced current and vice-versa
15. With direction of 2 of these: magnetic **force, magnetic field, current: I can find direction of the 3rd**
16. **I can use the magnetic force equations to compute values regarding magnetic fields**
17. I know electromagnetic induction (Faraday) is affected by: number of coils and rate of ΔB
18. I know how generators and electric motors work and can compare/contrast them
19. I know transformers, how AC works with them , and how this makes for long distance energy distribution
20. I understand how induction makes electromagnetic waves (light) possible

08Magnetism/Finals -Calendar ***Bold*** *and* *underlined* *means put in journal notes*

1	**Fr:12/09/16**	• **(08-01)** Magnetism introductory notes • Quest: ~40 pts, 1 short answer,	• H08-01
2-LS	**Mo:12/12/16**	• **(08-02)** Induction, Faraday, right-hand rule • Demos: Faraday (galvanometer), Thompson coil	• H08-02
3	**Tu:12/13/16**	• Catch-up day, Magnetism lab, practice quiz	• Study for quest
4	**We:12/14/16**	• Magnetism quest and Final review (waves, sound)	• Study for final/Moodle
5	**Th:12/15/16**	• Final review 1 (waves, sound, light, mirrors, electricity)	• Study for final/Moodle
6	**Fr:12/16/16**	• Final review 2 (electricity, static electricity, magnetism)	• Study for final/Moodle
F	**Mo:12/19/16**	• Finals: 8AM – 1 PM (1, 4/5, 2)	•
F	**Tu:12/20/16**	• Finals: 8AM – 1 PM (P. 3, 7/8, 9)	•
F-Q2E	**We:12/21/16**	• Finals: 8AM – 9:30 AM (P. 10)	•