IB Physics - cut 1 day

Magnetism and Induction

Chapter 20, 21 Syllabus

|  |  |  |
| --- | --- | --- |
| Block | Class  | Due on this class |
| 1Dec 16 | -Intro to Magnetism-Magnetic Field lines/Domains/Currents-Force on current-carrying wires: Magnitude and direction | **Read:** 20.1-3, 5 |
| 2Dec 18 | **-PreQuiz 20.1 – Vector Cross Products**-Force on charged particles – motion in B fields-The Hall Effect | **Read:** 20.4**Check #1:** 20: 1, 2(1.1 N), 3, 5 |
| 3Jan 5 | -Crossed field problems: Eq = qvB-Hysteresis - a demo I probably shouldn't do... -Galvanometers and Speakers-DC Motors**-Skill Set 20.1** | **Read:** 20.7, 8, 10, 11, 12**Check #2:** 20:9, 10(1.05E-13 N North), 11, 12(v, x, >) |
| 4**Jan 7** | -Lenz's discovery and magnetic flux-Electromagnetic induction-Lenz's law | **Read:** 21.1-2**Check #3:** 20: 13, 14(1.6 m), 15, 16(2.5E6 m/s, 4.1 mm) E.C.#19 (hint: T = 2πr/v) |
| 5**Jan 9** | **-PreQuiz 20.2 – Calculating force, trajectory, magnetic field.** -Tests Back!!-More induction – review direction-Induced EMF in moving conductors-My friend eddy | **Read:** 21.3, 4, 6**Check #4:** 21:1, 2(acw), 3, 5, 6(.048 V), 8(acw, cw), 9 |
| 6**Jan 13** | -Alternators-Solving voltages, currents and power in transformers (S: 21.7)-Transmission of electrical power**-Skill Set 20.2** | **Read:** 21.5, 7**Check #5:**21: 10(acw), 11, 12(.0144 V, .120 V/m down ), 13 |
| 7**Jan 15** | **-PreQuiz 21.1 –Direction of induced current**-Magnet lab Intro/Brainstorm/Design criteria recap-Magnetic field patterns for Solenoids, Wires, and Flat circular coils-MagnaProbe Lab **(directions at station)**-Choose variables for Magnet lab, review Des for IA | **Read:** 21.8**Check #6:** 21: 15,30(13,700 turns) 31, 32(.21) |
| **Jan 15** | **Research Symposium 6-9 Lecture Hall** |  |
| 8**Jan 20** | **-Skill Set 21.1**-Work on Magnet lab | **Check #7:** 21: 33, 34(5.6 V step down), 35, 36(487 V, 60.9 A) |
| **Finals** | **SkillSet Final!!!!** |  |
| 9**Jan 28** | **-PreQuiz 21.2 – Calculating emf, current, transformers (handout)**-Work on Magnet lab | **Check #8:** 21: 37 |
| 10**Jan 30** | **-Skill Set 21.2**-Work on Magnet lab |  |
| 11**Feb 3** | -Work on Magnet lab |  |
| 12**Feb 5** | -**Test on Ch 20-21 (normal test)** | **Turn In:** **Homework:** 8 stamps**Turn In:** Magaprobe Lab**Turn In:** Magnet Design Lab |
| Assignments* 2 Labs:
	+ MagnaProbe Lab – Station exploration of magnetic fields
	+ Magnet Lab – student designed lab – no handout
* 4 PreQuizzes/Skillsets
	+ 20.1 – Vector cross product
	+ 20.2 – Force trajectory and magnetic field
	+ 21.1 – Direction of induced current
	+ 21.2 – Calculating emf, current, transformers
* Homework from 8 days
* A big test on the two chapters – You will need to study for this so look at the review site – there are some word answers
 | Handouts* PreQuiz20.1
* PreQuiz20.2
* PreQuiz21.1
* PreQuiz21.2
* This Syllabus
 |