

General

1. The exam will cover all material through and including problem set four. Relativity and Photons (photoelectric effect, x-rays, compton).
2. You may bring a 3×5 index card full of formulas.
3. There is a formula sheet on the web site. But you may NOT use this on the exam.
4. There is last years exam on the web site together with solutions. It was too long.
 - The practice exam is a good way to study. But it is not comprehensive. i.e. there is more stuff that we covered which could appear on the exam that is not on the practice exam.

Subject and Problems

1. Understand spacetime diagrams in classical relativity special relativity. PS1, PS2
2. Lorentz Transformations, PS2. Practice Test.
3. Work simple problems involving length contraction and time dilation. Often combined with taylor series – PS1
4. Addition of Velocities: PS2
5. Doppler Shift: PS1-5, Quiz
6. Understand simple taylor, PS1, PS3, Practice test, Quiz
7. Relativistic momentum, energy, kinetic energy. PS3
8. Relativistic collisions and decays of particles. PS3. PS4 (compton process). Practice Test.
9. Lorentz transformation of momenta. PS3.
10. Photo-Electric Effect. Practice Test. PS4. Eisberg Chapter 2.
11. X-ray production. PS4. Eisberg Chapter 2.
12. Compton Effect. PS4. Eisberg Chapter 2.
13. Scales. Practice Test. Quiz. Formula sheet+remember a few numbers