

PHYS 115 Exam 1 StudyGuide

1. What is science? (chapter 1)
 - a. Basic of natural science: Hypothesis v.s. theory
 - b. Scientific approach: observation – hypothesis – testing – theory – retesting
 - c. Design experiments to test your hypothesis: experimental parameters.
2. Basic of light (chapter 2 -4)
 - a. What is light. (Different approaches: ray, photon, other.)
 - i. Propagation: rays
 - ii. Application of rays (shadows)
 - iii. What are Intensity, total energy, power?
 - b. Light sources: point source and extended source
 - i. Collimated beams and spherical beams (p137 – p138)
3. Light and photons (part of chapter 8, p122 – p131)
 - a. What are the relationships among the following concepts: Color of light, energy per photon, intensity, brightness, photon numbers?
 - b. Structure of atoms.
 - c. Energy level diagrams.
 - d. Generating of light. (changing of energy levels.)
 - e. Spectrum.