

3.46 PHOTONIC MATERIALS AND DEVICES

Quiz 3—February 27, 2006

1. The amplitude of a light wave is a vector. The state of polarization can be described as a superposition of \mathbf{E}_x and \mathbf{E}_y electric field vectors. What is the phase difference (in terms of π) between E_x and E_y for the following:

(a) plane (linearly) polarized light?

(b) right circularly polarized light?

(c) left circularly polarized light?

2. Jones Vectors

(a) What is the Jones vector for plane polarized light (along the \hat{x} -axis)?

(b) What is the Jones vector for right circular polarized light?

(c) What is the Jones vector for left circular polarized light?

Name: _____