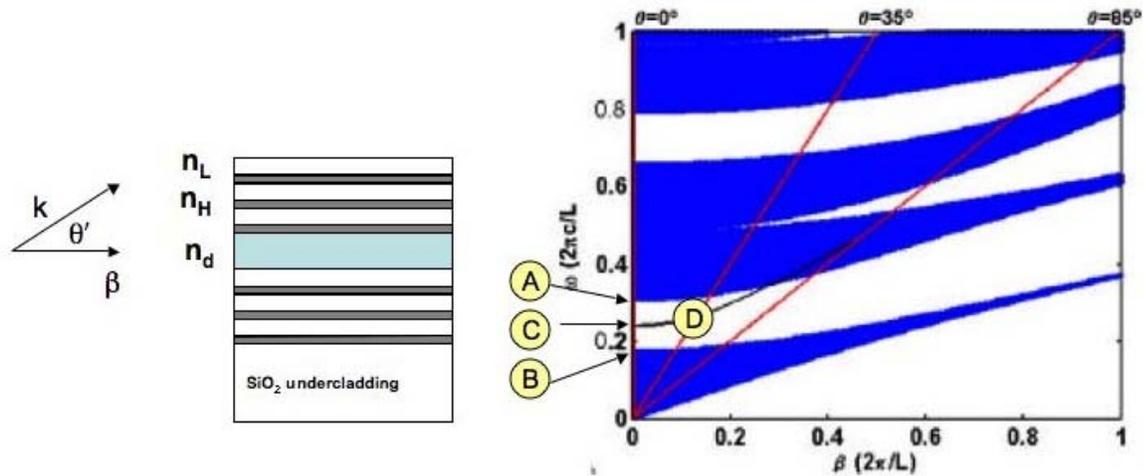


3.46 PHOTONIC MATERIALS AND DEVICES

Quiz 4—March 6, 2006

The Photonic Crystal Waveguide

The picture below shows the photonic band diagram for a 1D photonic crystal with a defect layer. Guided modes of light will propagate with a propagation constant β along the z-direction (the wavevector k will make an angle θ' with z-axis).



- (a) What are the names of the *states* identified in the photonic band diagram at positions A, B and C?
- (b) What is the group velocity at positions A, B, and C?
- (c) In a photonic crystal waveguide, would you prefer a propagating mode at location C or location D? Why?

Name: _____