Q4. A typical relative refractive index difference for an optical fiber is 1%. Estimated the numerical aperture and the critical angle at the core cladding interface if the core refractive index is 1.46.

**Given:-**=0.01; µ1=1.46

**Formula:-**=N.A.= µ1

**Solution:-** N.A.=1.46(2 x 0.01)1/2 = 0.2064

= 1-

= 1- = 0.99

=sin-10.99 = 81.89o

**Ans:- The N.A. is 0.2064 and the critical angle is 81.89o.**