Optical Communications Laboratory (ICT-3204)

Exp-1. For Step Index Fibers:

a) Calculate the Numerical aperture(NA), Propagation constant(β), V number and Cutoff wavelength(λ_c).
b) Observe the graphical representation of Propagation constant vs V number.
c) Observe the graphical representation of Wavelength (λ) vs V number.

Exp-2. For Graded Index Fibers:

a. Calculate the Numerical aperture(NA), Propagation constant(β), V number and Cutoff wavelength(λ_c).
b. Observe the graphical representation of Propagation constant vs V number.
c. Observe the graphical representation of Wavelength (λ) vs V number.

Exp-3. For Step Index Fibers:

a) Calculate the Acceptance angle(θ_a).
b) Calculate the waveguide dispersion at given wavelength and plot of waveguide dispersion vs wavelength(λ).

Exp-4. For Graded Index Fibers:

a) Calculate the Acceptance angle (θ_a).
b) Calculate the waveguide dispersion at given wavelength and plot of waveguide dispersion vs wavelength(λ).

Exp-5. For Graded Index Fibers:

a. Observe the graphical representation of acceptance angle(θ_a) w.r.t radius of core for different profile parameters.
b. Observe the graphical representation of core refractive index(n_1) w.r.t. radius of core for different profile parameters.

Exp-6. For Pure Silica Fibers:

a. Observe the graphical representation of refractive index(n) vs wavelength(λ).
b. Observe the graphical representation of material dispersion vs wavelength(λ).

Exp-7. For Silica Fibers, calculate the total loss and plot a graph for loss vs wavelength(λ).