Introduction to Optical Communication

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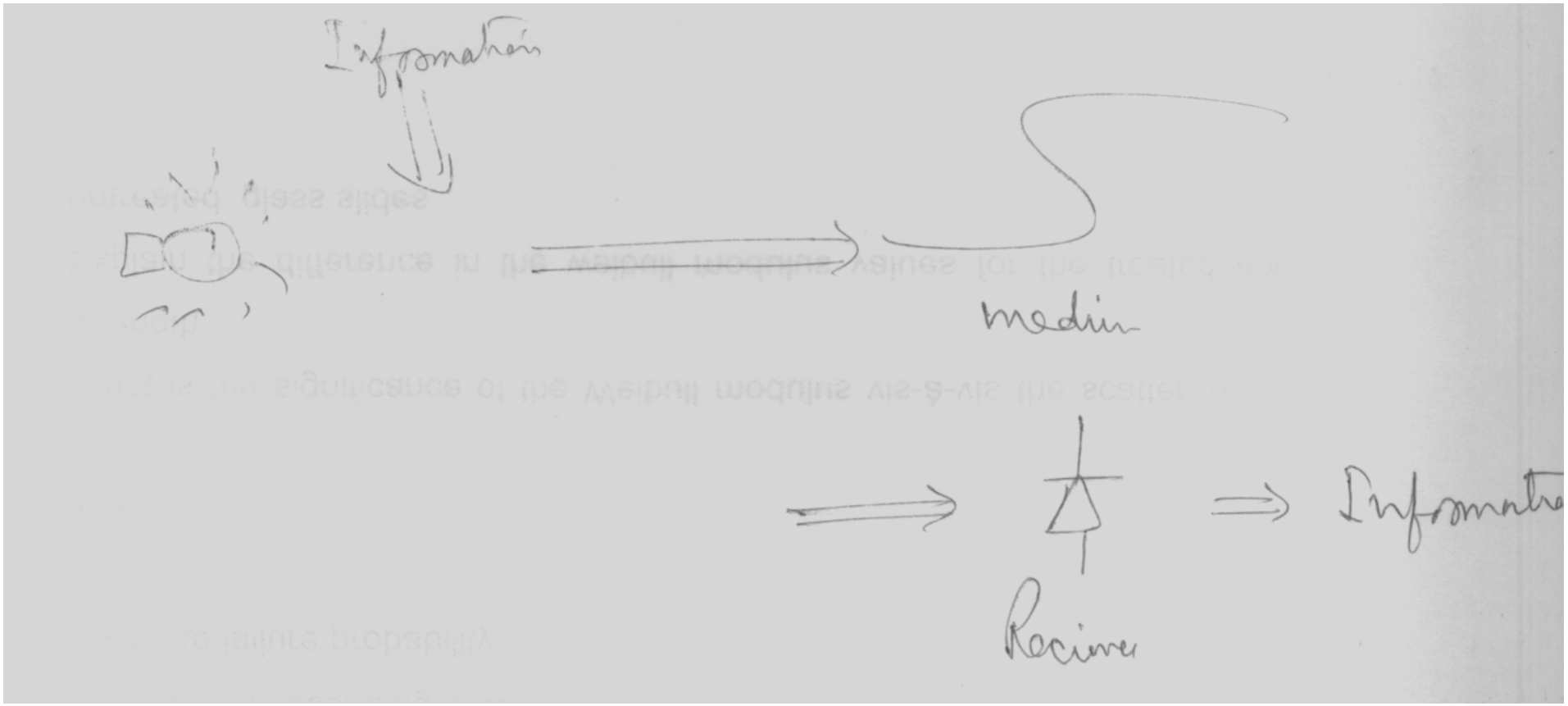
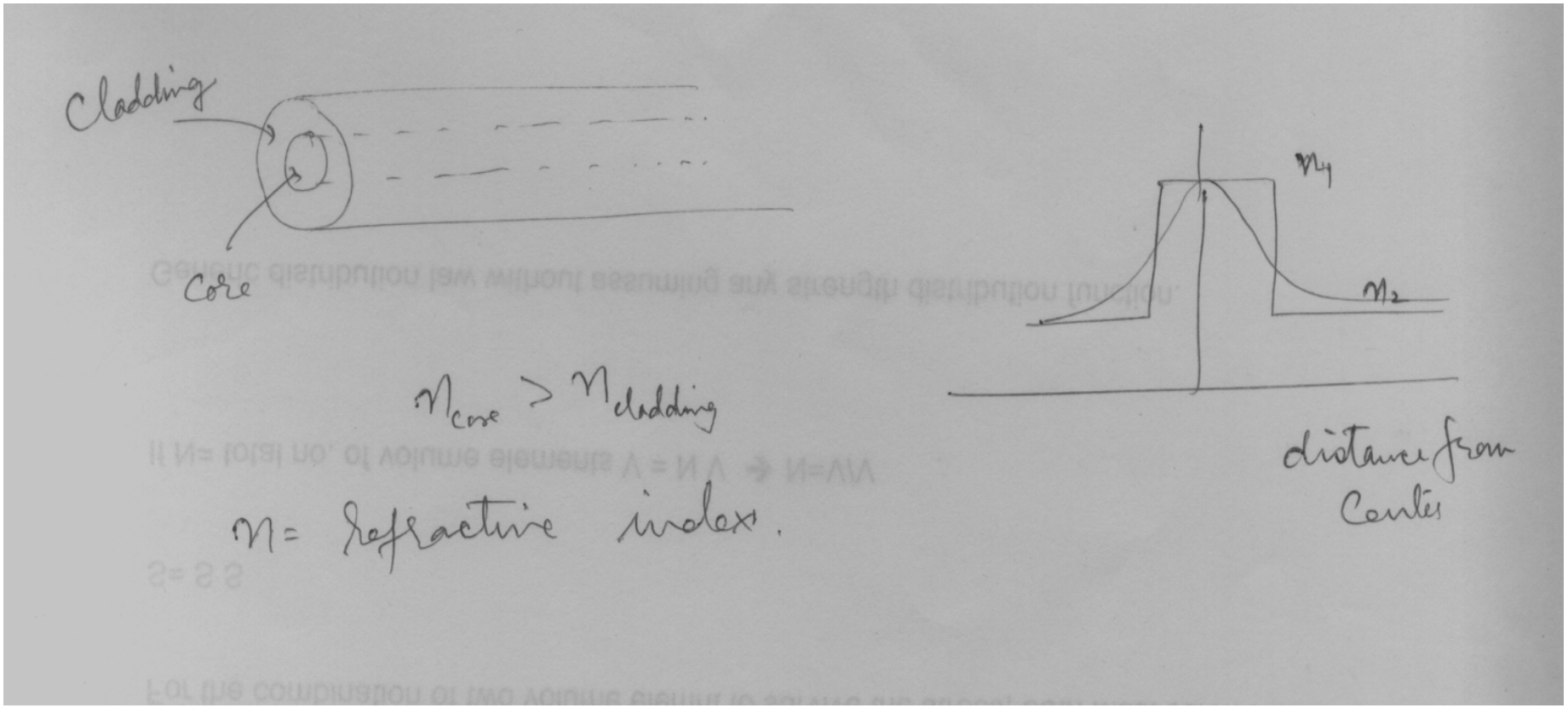
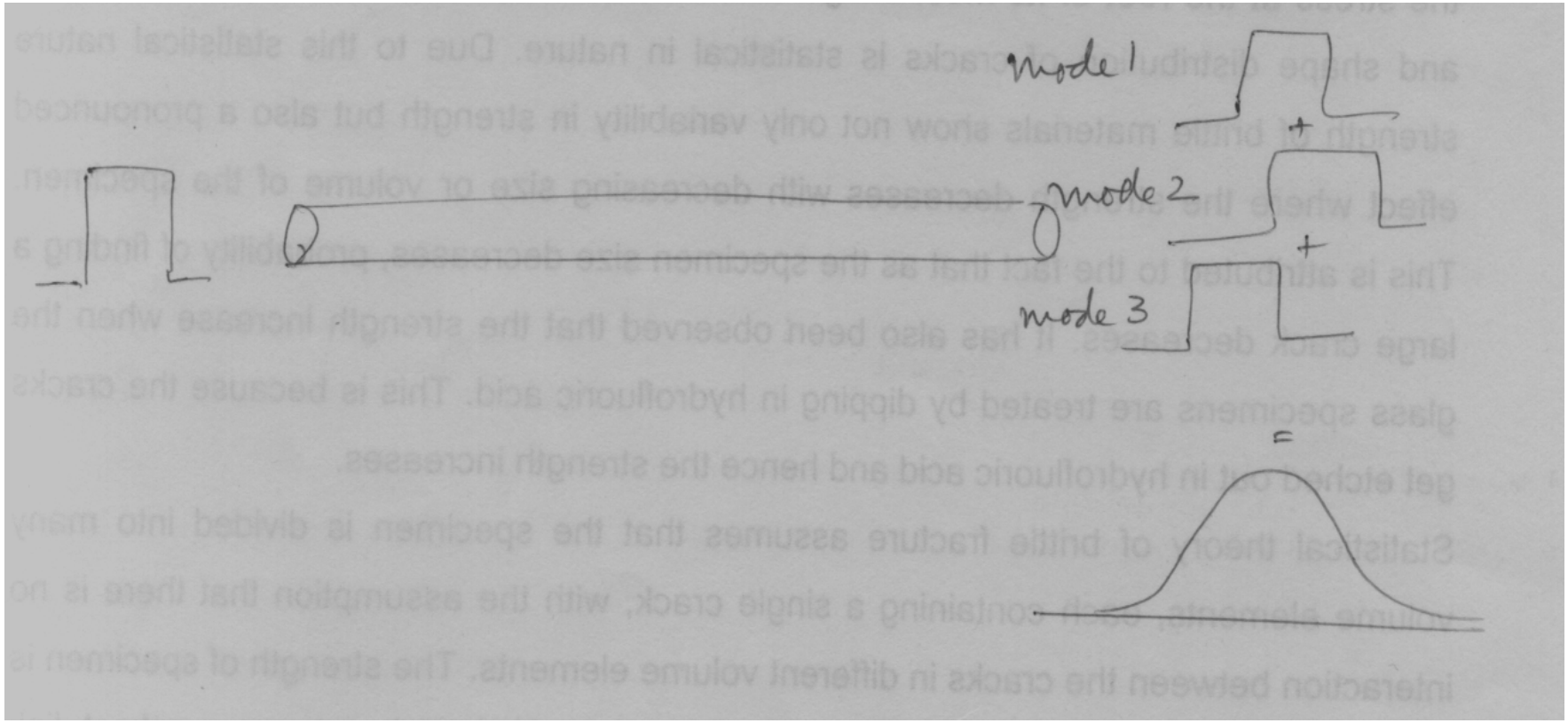
Optical Link



Optical fiber

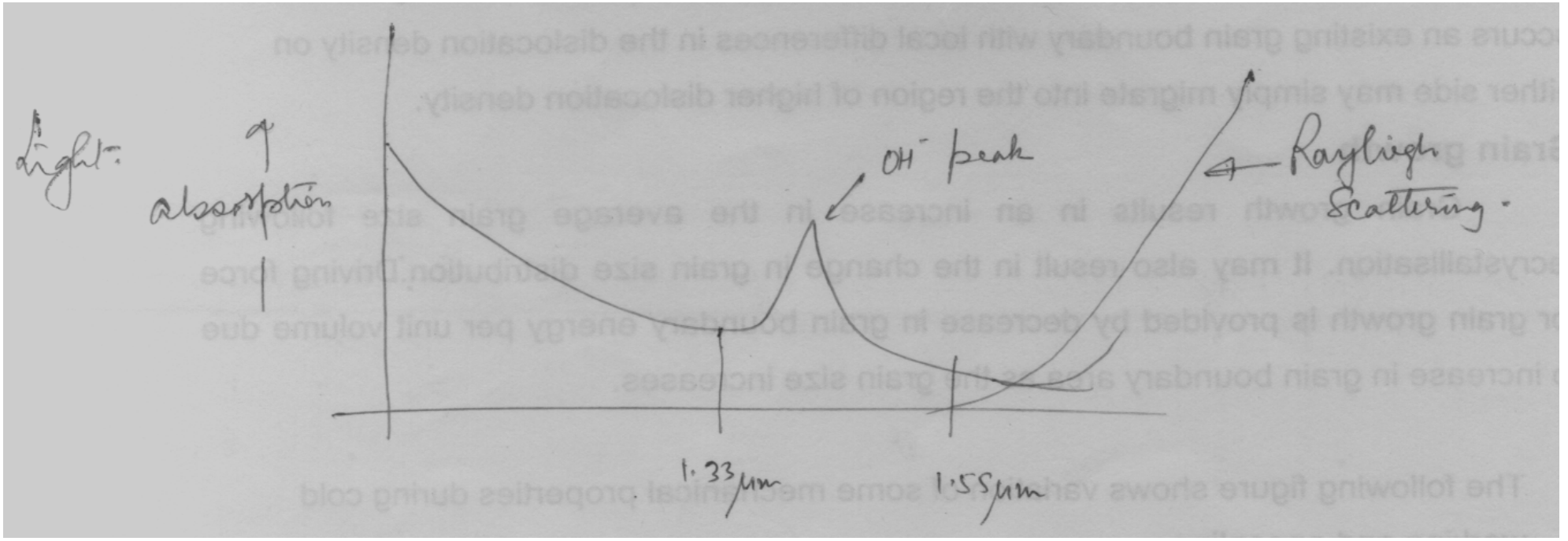


Dispersion

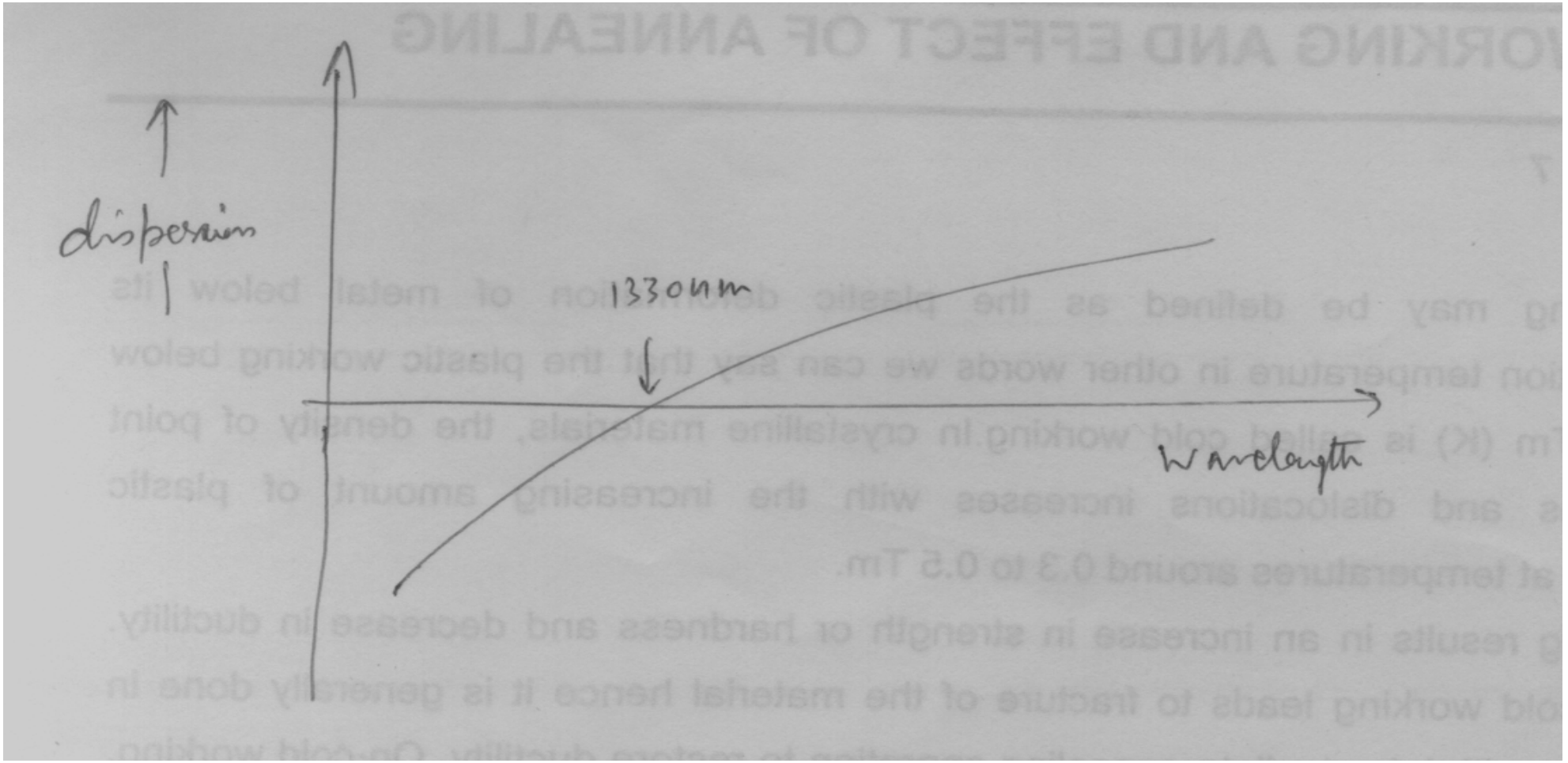


Attenuation

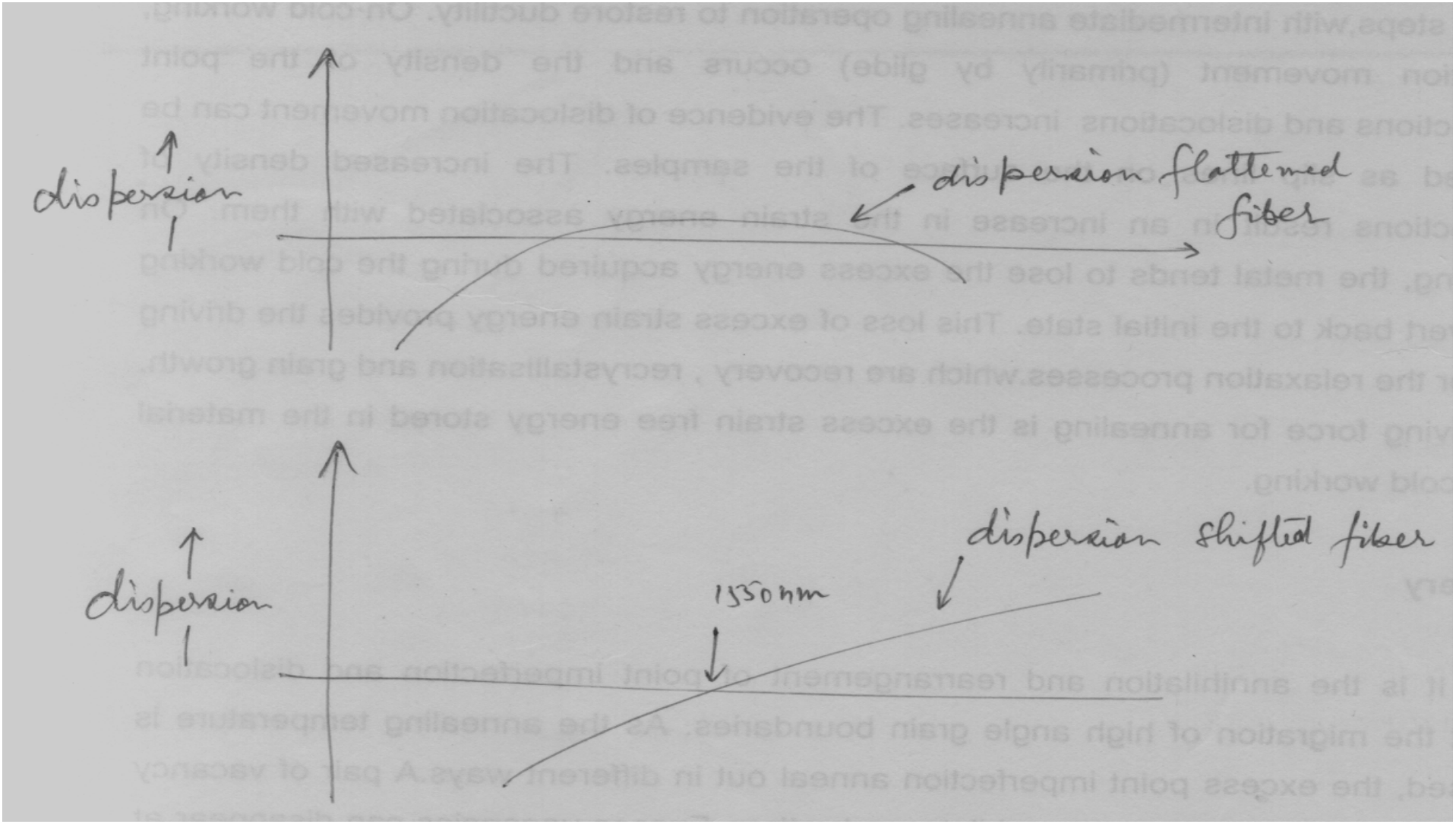
Loss curve for glass



Dispersion characterstics (Normal fiber)



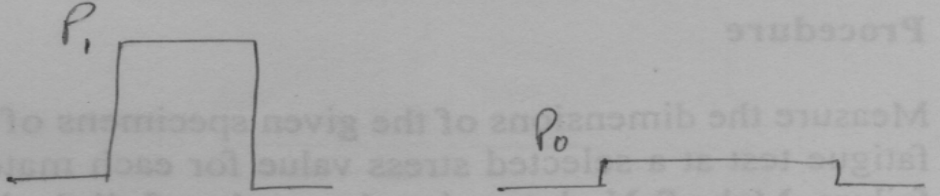
Modified dispersion characterstics



Modulation

Modulation Schemes

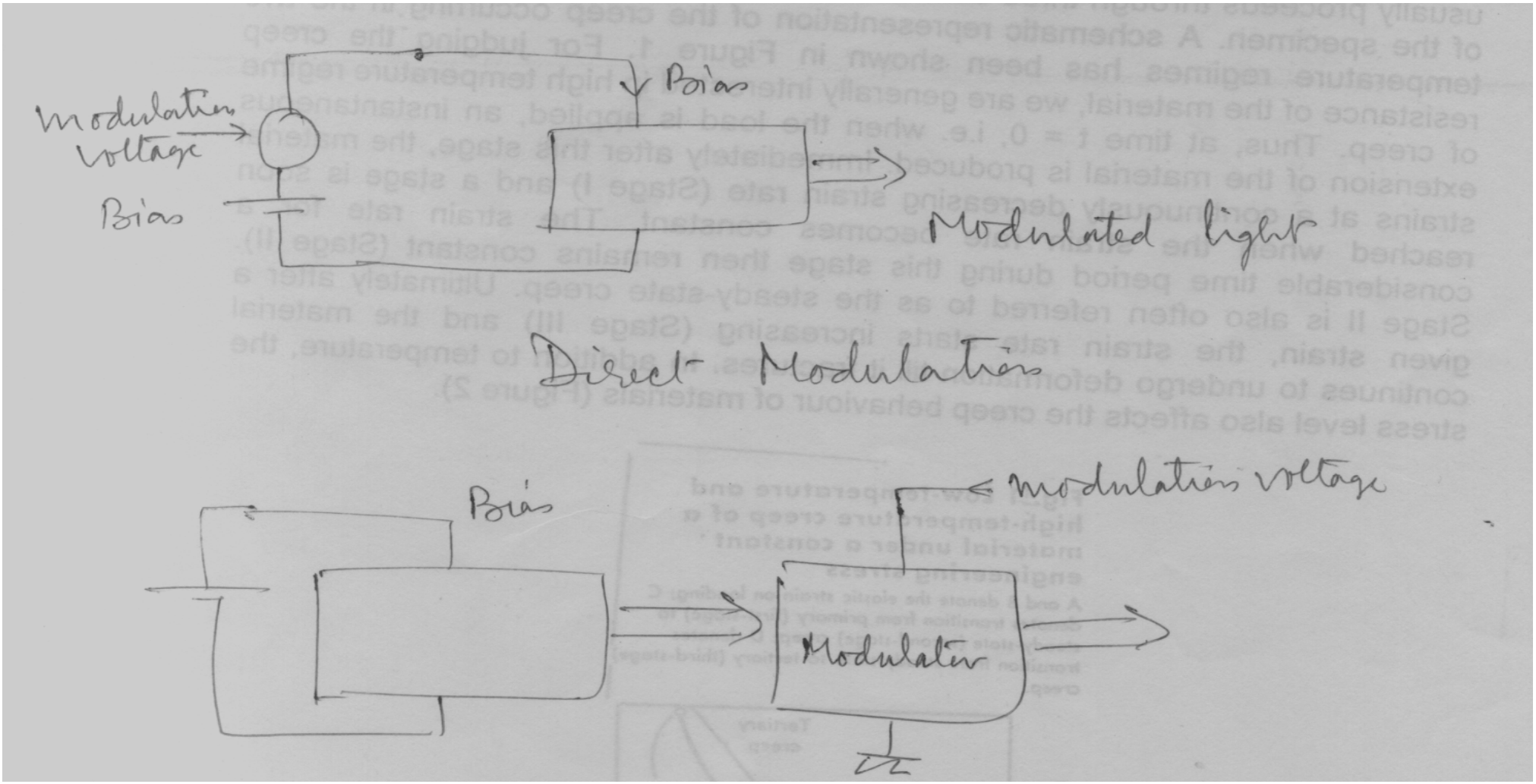
OOK —



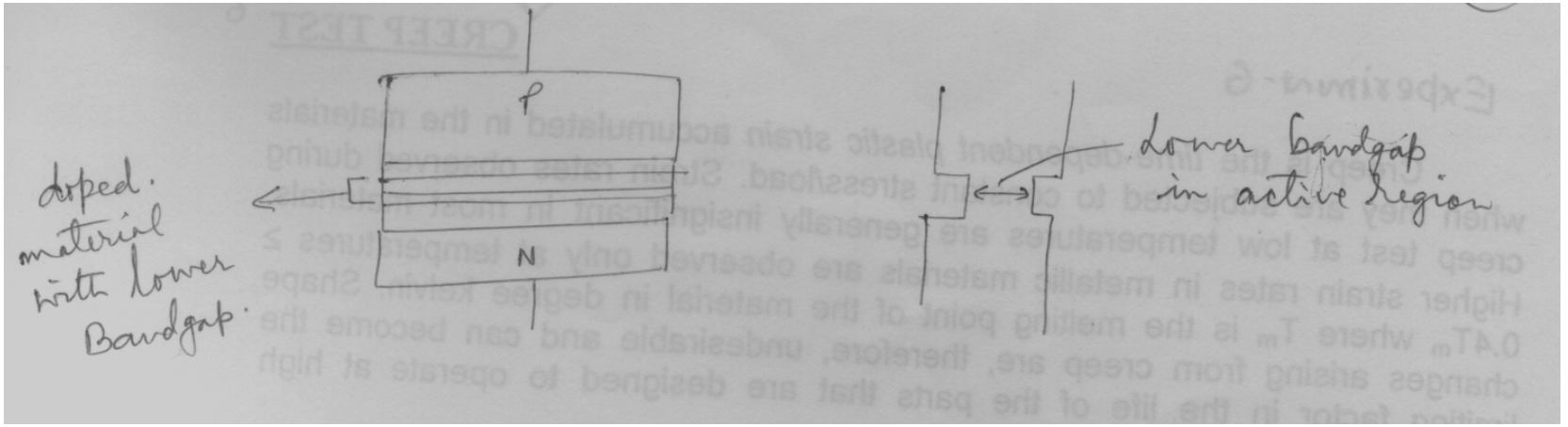
PSK — $A_m \sin(\omega_c t + k m(t))$

FSK — $A_c \sin(\omega_c t + k \int m(t) dt)$

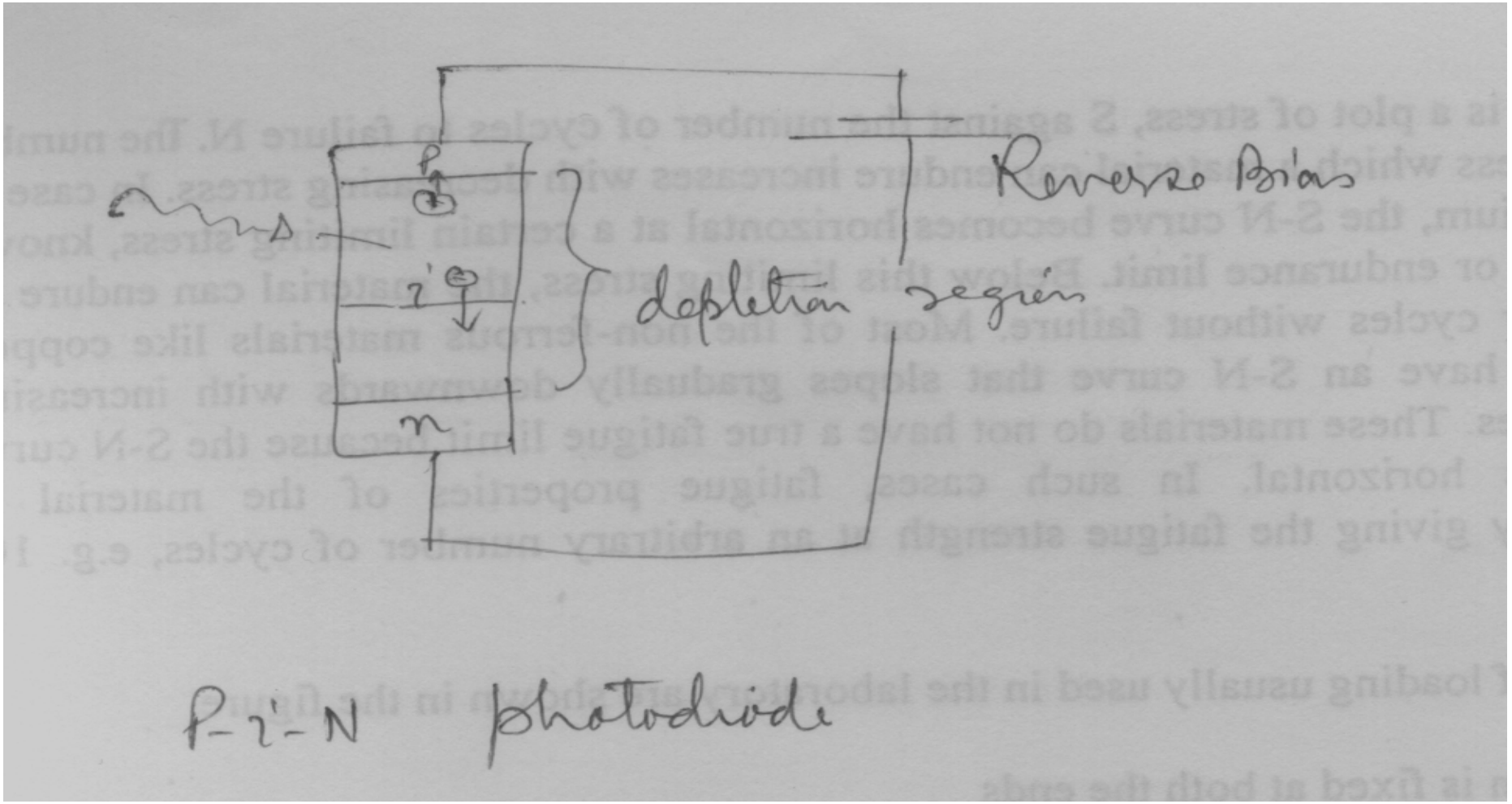
Internal/ External Modulation



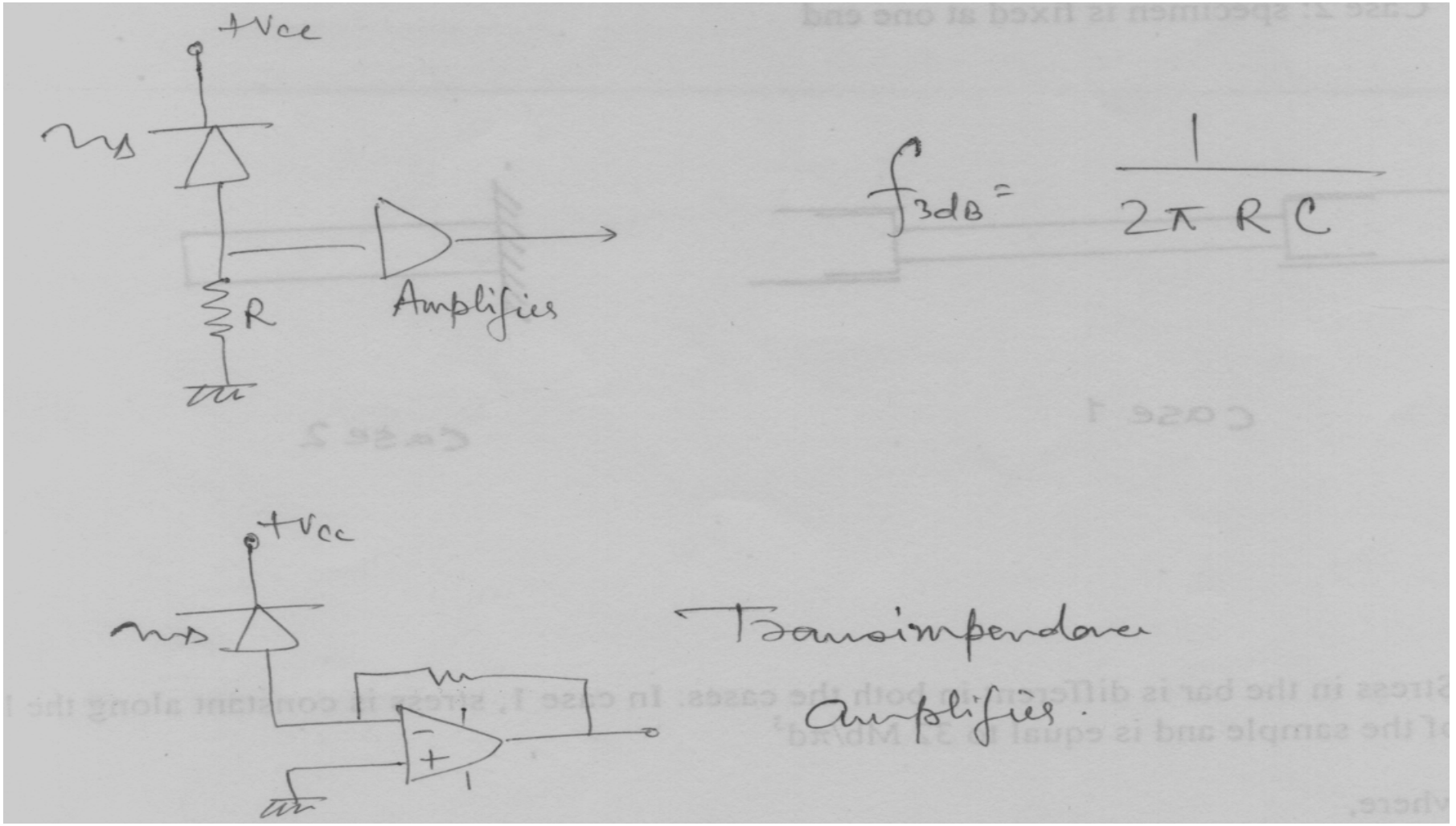
Double heterostructure laser



Photodiode



Receiver preamplifier



Noise in Receiver