

Optics

(PhD entrance exam topics)

1. Geometrical (ray) optics
2. Wave motion, wave equation, electromagnetic waves
3. Wave interference and its applications
4. Diffraction and its applications
5. Light absorption, scattering and dispersion
6. Polarisation of light
7. Fundamentals of laser operation
8. The dual nature of light
9. Photodetectors

Suggested readings:

R. Guenther: Modern Optics, John Wiley & Sons, 1990
E. Hecht, A. Zajac: Optics, Addison-Wesley, 1980