

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.

B.Sc.(Physics) END SEMESTER EXAMINATIONS NOVEMBER -2023

SEMESTER - III

20UPHCT3006 - Optics and Spectroscopy

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain Chromatic aberration in lenses.
2. What are the conditions for interference?
3. Distinguish between Fresnel's and Fraunhofer diffraction.
4. Describe Half wave plate.
5. Discuss about characterization of electromagnetic radiation.
6. Explain how to determine the thickness of a thin wire using air wedge method.
7. Discuss the overlapping of spectral lines in grating diffraction pattern.
8. Explain about the basic elements of practical spectroscopy.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Describe the condition for the combination of two thin prisms to produce deviation without dispersion.
10. Describe the construction of Michelson's interferometer and explain its working.
11. Discuss about Rayleigh's criterion for resolution and its limits in human eye.
12. Discuss the production and detection of plane, elliptically and circularly polarized light.
13. Explain in detail about the different types of molecular spectra and give the applications of spectroscopy.
