

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

22UPHCT3006 - Optics and Spectroscopy

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

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

1. Illustrate the differences between Ramsden eyepiece and Huygens Eyepiece.
2. Explain the theory of interference fringes.
3. Describe about the limit of resolution of the eye.
4. Sketch and illustrate on construction of Laurent's half shade polarimeter.
5. Examine on the selection rules and distribution of intensity of spectral lines.
6. Compute how the production of dispersion without deviation is achieved in a prism.
7. Interpret on the production and detection of circularly polarized light.
8. Describe the Rayleigh's criterion for the limit of resolution.

Section C

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

9. Compute on the various types of spherical aberration in a lens. Explain how they are caused.
10. Evaluate on the production of colours in thin films by reflected light and transmitted light.
11. Illustrate the theory behind the plane transmission grating.
12. Contrast on the various types of polarized light.
13. Illustrate on the instrumentation of a spectrophotometer and state how it can be used for analysis of functional group.
