



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE
(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester - 3) External Examination - 2025
COURSE CODE: US03IDPHY01 COURSE NAME: OPTICAL PHYSICS

Date: 08/10/2025

Time: 2:00 pm - 3:30 pm

Total marks :25

Q-1. Multiple Choice Question

[5]

- 1 Newton's ring is based on splitting of _____.
(a) Wavefront (c) Inclination
(b) Amplitude (d) Thickness
- 2 Newton's rings are an example of fringes of equal _____.
(a) Inclination (c) Same phase
(b) Thickness (d) Amplitude
- 3 The Fabry Perot interferometer is a _____ instrument, which make use for the fringes of equal inclination.
(a) High resolving power (c) High energy
(b) High magnifying power (d) High intensity
- 4 In Nicol prism two parts of the crystal are cemented together with _____ layer.
(a) Tourmaline (c) Calcite
(b) Quartz (d) Canada balsam
- 5 The ray which obeys Snell's law of refraction is known as _____ ray.
(a) Extra ordinary (c) Mechanical
(b) Ordinary (d) Electric

Q-2 Explain the theory of Newton's ring. Discuss how the Newton's ring experiment is helpful to determine the wavelength of given light. **[10]**

OR

Q-2 What is diffraction? Discuss Fresnel and Fraunhofer diffraction. **[10]**

Q-3 State and prove Brewster's law and show that reflected and refracted rays are at right angles to each other. **[10]**

OR

Q-3 Describe the Nicol prism and explain how it can work as analyser and polarizer? **[10]**

ALL THE BEST

