



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) Internal Examination - 2025
COURSE CODE:US03IDPHY01 COURSE NAME: OPTICAL PHYSICS

Date: 25/09/2025

Time: 2:45 - 3:45

Total marks :20

Q-1. Multiple Choice Question

[6]

- 1 Fresnal's biprism 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 Fabryperot 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 _____ has discovered that certain crystal absorbs light selectively
(a) Biot's (c) Brewster's
(b) Nicol's (d) Maxwell's
- 5 In Nicol prism two parts of the crystal are cemented together with _____ layer
(a) Tourmaline (c) Calcite
(b) Quartz (d) Canada balsam
- 6 The ray which obeys Snell's law of refraction is known as _____ ray
(a) extra ordinary (c) simple
(b) ordinary (d) electric

Q-2 Describe Fresnel's biprism. Explain how the wave length of light can be determined with its help. **[7]**

OR

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. **[7]**

Q-3 Explain calcite crystal in detail and distinguish between positive and negative crystal. **[7]**

OR

Q-3 Describe the Nicol prism and explain how it can work as analyzer and polarizer? **[7]**

ALL THE BEST





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Time: 10 Min. Total marks :05

Choose the correct answer from the bracket.

1. In Fraunhofer diffraction the source of light and screen are effectively at _____ distances from the obstacle. (**Infinite,finite**)
2. In biprism when fringes are obtained by using white light, the central white fringe is known as _____ fringe. (**first order, zero order**)
3. In _____ crystal both the refracted rays are extra ordinary rays. (**biaxial, uniaxial**)
4. The intensity of transmitted light through the polarizer is _____ the intensity of incident light(**half, same**).
5. The crystal that exhibit selective absorption are called _____. (**Isotropic, anisotropic**).

