

# VP&RPTP SCIENCE COLLEGE- VALLABH VIDYANAGAR

Internal test: 2016-17

B.Sc. SEMESTER - III

US03CPHY01

PHYSICS

Date: 30/09/2016

(OPTICS)

Time: 03:00 pm to 04:30pm

Max marks: 25

*Instructions: (i). All the questions are compulsory.*

*(ii). Figure on right hand side indicates full marks of that question.*

## Q-1. CHOOSE CORRECT ANSWER FROM GIVEN OPTIONS: [3]

- The aberration that occurs due to dispersion of light are called .....aberration.
  - distortion
  - coma
  - Chromatic
  - Monochromatic
- In Newton's ring experiment the .....lens is used.
  - biconvex
  - Plano convex
  - concave
  - biconcave
- In positive crystal, the refractive index for extraordinary ray is.....then the ordinary ray.
  - equal
  - greater
  - less
  - half

## Q-2. Answer any two short questions from followings: [4]

- Define coma. What is the difference between coma and astigmatism?
- Give the comparison between the fringes produced by biprism and Lloyd's mirror.
- Compare positive and negative crystals.

Q-3. Discuss spherical aberration of a lens? What is longitudinal and lateral spherical aberration? Also mention the methods of removing them. [6]

OR

Q-3. Give the construction and working of a Ramsden eyepiece? Mention its merits and demerit. [6]

Q-4. Describe Fresnel's biprism. Explain how the wave length of light can be determined with the help of biprism. [6]

OR

Q-4. Explain the theory of Newton's ring. Discuss how the Newton's ring experiment is helpful to determine the wavelength of given light. [6]

Q-5. Discuss the phenomenon of polarization by refraction and scattering. [6]

OR

Q-5. Discuss the construction and working of LCD. [6]

XXXXXXXXXX

