



## V P & R P T P SCIENCE COLLEGE- VALLABH VIDYANAGAR

Internal test: 2017-18  
B.Sc. SEMESTER - III  
PHYSICS (US03CPHY01)

Date: 04 /10/2017

Time: 03:00 pm to 04:30pm

[Max marks: 25]

Instructions: i. all the questions are compulsory.

ii. Figures on the right hand side indicate full mark of that question.

### Q-1 Write appropriate answer from given options:

[3]

- 1 The aberration that occurs due to dispersion of light are called \_\_\_\_\_ aberration  
(a) chromatic (b) monochromatic  
(c) coma (d) distortion
- 2 In Newton's ring experiment the \_\_\_\_\_ lens is used.  
(a) Convex (b) biconvex  
(c) plano convex (d) concave
- 3 A Nicol prism is made from \_\_\_\_\_ crystal.  
(a) cobalt (b) quartz  
(c) Ruby (d) calcite

### Q-2 Short questions (Attempt any two)

[4]

- [i] Write the types of monochromatic aberration.
- [ii] What is diffraction? Define Fraunhofer diffraction.
- [iii] Compare positive and negative crystals.

Q-3. Give the construction and working of a Ramsden eyepiece? Mention its merits and demerits.

..... [6]

OR

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

[6]

Q-4. Describe Fresnel's biprism. Narrate the experiment to determine the wave length of monochromatic light.

[6]

OR

Q-4 Write a note on - Diffraction due to a narrow wire. Draw the geometric shadow for narrow wire and a thick wire.

[6]

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

[6]

OR

Q-5 Discuss the construction and working of LCD.

[6]

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