

Rajiv Gandhi University of Health Sciences, Karnataka
I Year B.Sc. Optometry Degree Examination - 19-Dec-2022

Time: Three Hours

Max. Marks: 100 Marks

PHYSICAL AND PRINCIPLES OF LIGHTING, GEOMETRIC OPTICS
SECTION B – GEOMETRIC OPTICS (50 MARKS)
(REVISED SCHEME – 4)

Q.P. CODE: 3345

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

(Note : Both QP Codes 3344 and 3345 are to be answered within total duration of 3 hours)

LONG ESSAYS (First Question Choice)

1 x 10 = 10 Marks

1. Obtain Gauss formula for refraction at a single spherical surface, and hence the lens maker's formula.

Or

State the laws of photo electric emission. Deduce Einstein's photo electric equation.

SHORT ESSAYS (Question No. 5 choice)

5 x 5 = 25 Marks

2. Explain construction and working of Ruby Laser
3. Explain about the Cartesian Sign convention with the diagram.
4. In an optical fiber, the core and cladding materials have refractive indices 1.6 and 1.4. What is the value of the critical angle? Also calculate the acceptance angle.
5. What are laws of refraction? What is lateral shift? Obtain an expression for the same.

Or

Explain about the mono-chromatic aberration.

6. Obtain the condition for two small angle prisms to produce the deviation without dispersion.

SHORT ANSWER (Question No. 10 choice)

5 x 3 = 15 Marks

7. Explain the uses of spherical mirrors.
8. State the conditions of total internal reflection.
9. What are GRIN lenses? Write the uses of it.
10. The critical angle of glass is 42 degree, calculate the polarizing angle.

Or

What are entrance pupil and exit pupil of a lens.

11. Define power of lens. Mention the unit.
