

Rajiv Gandhi University of Health Sciences, Karnataka
I Year B.Sc. Optometry Degree Examination - 25-Nov-2024

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. What is refraction of light? State and explain Snell's law. Illustrate the graphical construction for the refraction of light.

Or

Deduce obtain prism formula. Hence derive the expression for deviation produced by thin prism.

SHORT ESSAYS (Question No. 5 choice)

5 x 5 = 25 Marks

2. Obtain Gauss formula for spherical surfaces.
3. Explain critical angle. Illustrate total internal reflection with diagram.
4. Explain the cardinal points.
5. Briefly explain the function of the eye.

Or

A 45° Flint glass prism has a refractive index of 1.67 for sodium yellow light and is adjusted for minimum deviation. Find i) Angle of minimum deviation ii) The angle of incidence

6. Illustrate spherical aberration of a lens. Explain how it can be minimized.

SHORT ANSWER (Question No. 10 choice)

5 x 3 = 15 Marks

7. What are the significance of velocity of light?
8. Explain conjugate points.
9. Draw ray diagram showing image formation in a convex lens.
10. Write applications of spherical mirrors.

Or

Draw the ray diagram showing the image formation in a compound microscope.

11. Define dispersive power of a prism.
