

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - 05-Jun-2024

Time: Three Hours

Max. Marks: 100

PHYSICAL OPTICS 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. Deduce the prism formula and expression for the deviation produced by a thin prism

OR

Obtain the expression for equivalent focal length of two lenses kept

- a) In contact
- b) Without contact

SHORT ESSAYS (Question No. 5 choice)

5 x 5 = 25 Marks

2. What is dispersive power of a prism? Obtain the condition for combination of two thin prism to produce dispersion without deviation
3. Derive lens maker formula of thin lens
4. Derive refraction matrix for a lens
5. Explain briefly about GRIN systems

OR

A critical angle for glass is $41^\circ 48'$ and for water is $48^\circ 36'$. Calculate the critical angle for glass-water interface

6. Derive mirror equation

SHORT ANSWER (Question No. 10 choice)

5 x 3 = 15 Marks

7. Draw a neat diagram to represent the working of compound microscope
8. Write about pincushion distortion
9. State the Cartesian sign convention
10. Mention the uses of spherical mirror

OR

State conditions for total internal reflection

11. State laws of refraction
