Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - 29-Nov-2023

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.   Derive thick lens formula.
                              Or
     Derive prism formula. Obtain the expression for deviation produced by thin prism.

SHORT ESSAYS (Question No. 5 choice)   **5 x 5 = 25 Marks**

2.   Explain i) Principle of reversibility ii) Total internal reflection.

3.   What are direct vision prisms? Deduce the expression for dispersion without deviation.

4.   What are the laws of reflection and refraction? Explain with diagram.

5.   Explain the construction and working of compound microscope. Obtain an expression for its magnification.
                         Or
     Deduce Gauss formula for spherical surfaces.

6.   Obtain the expression for lateral shift.

SHORT ANSWER (Question No. 10 choice)   **5 x 3 = 15 Marks**

7.   Write an expression for normal shift. Explain the terms.

8.   Draw the ray diagram of image formation in a concave lens.

9.   Explain coma aberration.

10. Draw the ray diagram showing the entrance and exit pupils of a convex lens with a stop in front of it. What is the purpose of a stop?
                  Or
     Write the applications of spherical mirror.

11. What are the significance of velocity of light?

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