First Year B.Sc Optometry Degree Supplementary Examinations
May 2023
Paper III – Physical & Geometrical Optics

(2016 Scheme)

Time: 3 hrs   **Max marks: 80**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers*
- *Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers • Draw table/diagrams/flow charts wherever necessary*

Essay: **(2x15=30)**

1. Explain Fermat's principle. Derive laws of reflection using Fermat's principle.
2. Telescope and its types

Short notes   **(5x5=25)**

3. Reflection in plane mirrors
4. Refraction at a spherical surface
5. Thin Lens
6. Explain Chromatic aberration
7. Microscope

Answer briefly   **(10x2=20)**

8. Definition of Aperture Stop
9. Prism placement in convex and concave lenses
10. Define Dispersion
11. Define Prentice's Rule
12. Define Polarization
13. Draw Airy's disc
14. Rayleigh's Criterion
15. Einstein's theory of light-matter interaction
16. Define Aphakia
17. Lens 1: +2.00/+0.75 X 45; Simple transposition and find out the spherical equivalent

Fill in the blanks   **(5x1=5)**

18. _____ is the aperture that controls the field of view by limiting the solid angle formed by chief rays
19. _____ is the image of the field stop formed by all optical elements following it
20. _____ is the science of measurement of electromagnetic radiation
21. Fringe width of Young's double slit experiment -----— with increasing
22. -----------------is the unit of radiant energy.

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