

UNIT: 2 - OPTICS**I. Answer the following briefly.**

1. What is refractive index?
2. State First law of Refraction.
3. State Snell's law.
4. List out the significance of Refractive index.
5. What do you mean by scattering of light?
6. What are the two types of scattering based on initial and final energy of scattering light?
7. How will you classify scattering based on the type of scatterer?
8. What is Rayleigh scattering?
9. State Rayleigh scattering law.
10. Why sky appears blue in colour?
11. Why sky appears red in colour during sunrise and sun set?
12. What is Mie scattering? List out the substances producing mie scattering.
13. What do you mean by Tyndall effect?
14. What are the two major classification of lenses? How do they vary?
15. Draw diagram to illustrate the image formed by a Concave lens when the object is placed between anywhere on the principle axis at a finite distance.
16. Write down the applications of convex lens.
17. Write down the applications of concave lens.
18. Define Magnification of lens.
19. Define Power of lens with unit.
20. What is power of accommodation of eye?
21. What is persistence of vision?
22. What are the uses of Simple Microscope?
23. Classify the telescopes based on optical property.
24. What are the advantages & disadvantages of telescopes?

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II. Answer in Detail

1. Write down the properties of light
2. Define (i) Raman scattering (ii) Raman Lines and its classification (iii) Rayleigh lines
3. Illustrate with fine diagram the rules governing image formation by refraction in (i) convex lens and (ii) concave lens.
4. Complete the following table in respect of image formed by convex lens.

Position of the Object	Position of Image	Nature of image
At infinity		
Beyond C or 2F		
At C		
Between F and C		
At F		
Between F and O		

5. List out the steps involved in Cartesian sign convention.
6. Write down the difference between concave and convex lens.
7. Draw neat diagram of Human Eye and explain its working.
8. Differentiate the eye defects: Myopia and Hypermetropia.
9. Differentiate the eye defects: Presbyopia and Astigmatism.
10. Explain the construction and working of a compound microscope.