

Mastermind Career Institute

(Class-11 & 12 / IIT-JEE / NEET)



Chapter Notes

Class - 10

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Class X: Science
Chapter 11: The Human Eye and the Colorful World

Points to remember

Key Learnings:

1. Human eye is a valuable sense organ. Its various parts and the respective functions include:

Eye part	Eye function
Cornea	Protective layer of eye
Eye lens	Refracts the light so as to form the image on retina
Retina	Behaves as the screen on which the image is formed
Pupil	Controls the intensity of light entering the eye
Ciliary's muscles	Adjust the thickness of the lens

2. The farthest point up to which the eye can see clearly is called the far point of the eye.

3. The distance of the closest point from the eye that can be seen clearly without accommodation is known as least distance of distinct vision.

4. The ability of the eye to observe distinctly the objects situated at widely different distances from the eye is called power of accommodation.

5. The smallest distance, at which the eye can see objects clearly without strain, is called the near point of the eye or the least distance of distinct vision. For a young adult with normal vision, it is about 25 cm.

6. In myopia distant objects are not clearly visible. It is corrected by using concave lens.

7. In hypermetropia nearby objects are not clearly visible. It is corrected by using convex lens.

8. Presbyopia arises due to weakening of ciliary muscles in old age. It can be corrected by using bi-focal lenses.
9. The phenomenon of splitting of white light into its constituent seven colors on passing through a glass prism is called dispersion of light.
10. Different colors undergo different deviations on passing through prism.
11. If a second identical prism is placed in an inverted position with respect to the first prism, all the seven colors recombine to form white light.
12. Atmospheric refraction is the phenomenon of bending of light on passing through earth's atmosphere.
13. As we move above the surface of earth, density of air goes on decreasing.
14. Light traveling from rarer to denser layers always bends towards the normal.
15. Stars twinkle on account of atmospheric refraction.
16. Sun appears to rise 2 minutes earlier and set 2 minutes later due to atmospheric refraction.
17. The phenomenon in which a part of the light incident on a particle is redirected in different directions is called scattering of light.
18. Very small particles scatter lights of shorter wavelengths better than longer wavelengths.

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19. The scattering of longer wavelengths of light increases as the size of the particles increases.

20. Larger particles scatter lights of all wavelengths equally well.