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Worksheet: The Human Eye and the Colourful World

1. The human eye forms the image of an object at its (a) cornea. (b) iris. (c) pupil. (d) retina.
2. What happens to the image distance in the eye when we increase the distance of an object from the eye?
3. A person with a myopic eye cannot see objects beyond 1.2 m distinctly. What should be the type of the corrective lens used to restore proper vision?
4. The human eye can focus on objects at different distances by adjusting the focal length of the eye lens. This is due to (a) presbyopia. (b) accommodation. (c) near-sightedness. (d) far-sightedness
5. Why are we not able to see things clearly when we come out of a dark room?
6. State the role of the eye lenses in the human eye?
7. List the parts of the human eye that control the amount of light entering into it. Explain how they perform this function?
8. Why do we observe random wavering or flicking of the objects near a fire or on a very hot day?
9. What is a spectrum? How can we recombine the components of white light after a glass prism has separated them?
10. Why does the sky appear dark instead of blue to an astronaut?
11. Why is Tyndall effect shown by colloidal particles? State four instance of observing the Tyndall effect.
12. The far point of a myopic person is 80 cm in front of the eye. What is the nature and power of the lens required to correct the problem?
13. Why do stars twinkle?
14. What is the far point and near point of the human eye with normal vision?
15. A person needs a lens of power –5.5 dioptres for correcting his distant vision. For correcting his near vision he needs a lens of power +1.5 dioptre. What is the focal length of the lens required for correcting (i) distant vision, and (ii) near vision?
16. Can visible light be scattered by atoms/molecules in the earth’s atmosphere?
17. Why is a convex lens called a converging lens?
18. State the difference in colours of the sun observed during sunrise/sunset and noon. Give explanation for each.
19. Why do different colours deviate through different angles on passing through a prism?

20. Why is a normal eye not able to see clearly the objects placed closer than 25 cm?