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. State the role of the eye lenses in the human eye?
3. Can visible light be scattered by atoms/molecules in the earth's atmosphere?
4. 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?
5. 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?
6. What is the function of the optic nerve in the human eye?
7. Explain why the planets do not twinkle.
8. Why does the sky appear dark instead of blue to an astronaut?
9. State the difference in colours of the sun observed during sunrise/sunset and noon. Give explanation for each.
10. Why is a normal eye not able to see clearly the objects placed closer than 25 cm?
11. What is the role of the ciliary muscles?
12. Name the three common defects of vision. What are their causes? Name the type of lens used to correct each of them.
13. Why do different colours deviate through different angles on passing through a prism?
14. 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
15. List the parts of the human eye that control the amount of light entering into it. Explain how they perform this function?
16. Why are we not able to see things clearly when we come out of a dark room?
17. Why is Tyndall effect shown by colloidal particles? State four instance of observing the Tyndall effect.
18. Why do stars twinkle?
19. Why is a convex lens called a converging lens?
20. What is hypermetropia?