WORKSHEET 1

CHAPTER 6 – THE HUMAN EYE AND THE COLOURFUL WORLD

A. Tick (✓) the correct option.

1. Which of these is a tissue present in the outer part of eye?
   a. Retina b. Optic nerve c. Cornea d. Blind spot.
2. The minimum distance at which objects can be seen clearly without any strain is
   a. 10 cm b. 25 cm c. 100 cm d. 50 cm.
3. Which colour deviates the most?
   a. Red b. Orange c. Blue d. Violet.
4. Which scientist discovered that light is composed of seven colours?
   a. Newton b. Oersted c. Ramanujan d. None of these.
5. Which colour is used to denote a danger signal?
   a. Red b. Yellow c. Violet d. Blue.

B. Fill in the blanks.

1. The _____ controls the amount of light entering the eye by adjusting the size of pupil.
2. Crystalline lens is a transparent _____ situated just behind the iris.
3. The distance between _____ and _____ of the eye is called the range of vision.
4. To correct a myopic eye, the person has to use spectacles with a _____
5. White is composed of _____ different colours.

C. State whether the given statements are true or false.

1. The phenomenon of splitting of white light into its component colours on passing through a glass prism is called dispersion of light.
2. Sky appears blue to passengers flying at high altitudes.
3. Smoke coming out of coal-fired chimney appears red on a misty day.
4. Due to atmospheric refraction we can observe two minutes before the actual sunrise.
5. Weakening of ciliary muscles causes myopia.

D. Match the following.

1. Myopia	both myopia and hypermetropia
2. Presbyopia	increase in size of eye lens
3. Dual eye defect	clouding of eye lens
4. Hypermetropia	weakening of ciliary muscles
5. Cataract	decrease in size of eye lens

Name: ..... Teacher's signature: .....

Class: X Date: .....

E. Answer the following questions.

Very Short Answer Questions

1. Define retina.
2. What is the near point of a young adult with normal vision?

Short Answer Questions

1. What is power of accommodation?
2. Define atmospheric refraction.

Long Answer Questions

1. Why do the stars twinkle?
2. What are the causes of myopia?

ANSWERS

WORKSHEET 1

A. Tick (✓) the correct option.

1. c
2. b
3. d
4. a
5. a

B. Fill in the blanks.

1. iris
2. double convex lens
3. near point, far point
4. concave lens
5. seven

C. State whether the given statements are true or false.

1. T
2. F
3. F
4. T
5. F

D. Match the following.

1. Myopia	increase in size of eye lens
2. Presbyopia	weakening of ciliary muscles
3. Dual eye defect	both myopia and hypermetropia
4. Hypermetropia	decrease in size of eye lens
5. Cataract	clouding of eye lens

E. Answer the following questions.

Very Short Answer Questions

1. Retina is the innermost delicate membrane having a large number of light sensitive cells called 'rods' or 'cones'. The image of an object is formed on the retina.
2. 25 cm

Short Answer Questions

1. The ability of the eye lens to adjust its focal length so as to see the objects located anywhere is called power of accomodation.
2. When light rays pass through the atmosphere having layers of different densities and refractive indices, then refraction of light takes place. This is called atmospheric refraction.

Long Answer Questions

1. The twinkling of stars is due to atmospheric refraction of the light rays coming from them. Light ray from a star travels through the space unhindered. When it enters the earth's atmosphere, it undergoes refraction due to varying optical densities of air. The continuously changing atmosphere refracts the light from the stars by varying amounts and in different directions. Thus, the stars appear to twinkle.
2. The two possible causes of myopia or near sightedness are:
   - **Excessive curvature of eye:** This leads to thickening of the eye lens. This decreases the focal length of the eye lens. In such a case, the image of object is formed behind the retina.
   - **Elongation or increase in size of the eye lens:** This leads to increase in the distance of retina from the eye lens. In such a case, the image of a distant object is formed in front of the retina.