WORKSHEET 2

CHAPTER 6 – THE HUMAN EYE AND THE COLOURFUL WORLD

A. Tick (✓) the correct option.

1. Bifocal lens is required to correct
   a. myopia b. hypermetropia c. cataract d. dual eye defect.
2. To correct a hypermetropic eye, the person has to use spectacles with a
   a. convex lens b. concave lens c. bifocal lens d. none of these.
3. Far point of a young adult with normal vision is
   a. 25 cm b. infinity c. 50 cm d. none of these.
4. Number of colours, white light is composed of
   a. 7 b. 4 c. 6 d. 5
5. Presbyopia is caused by the weakening of
   a. cornea b. retina c. iris d. ciliary muscles.

B. Fill in the blanks.

1. _____ is the surface which acts as screen and image is formed on it.
2. _____ muscles holds the lens and adjust its thickness.
3. In _____ distant objects are not distinctly visible. It is corrected by using _____ lens.
4. Retina has large number of light sensitive cells called _____ and _____
5. The band of coloured components of a light beam obtained on a white screen, when white light passes through a prism is called _____

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

1. Blue colour of sky is due to scattering of light.
2. Clouds appear red due to Rayleigh scattering.
3. A longsighted person cannot see distant objects.
4. The band of coloured components of light beam obtained on a white screen when white light passes through a prism is called spectrum.
5. A light ray passing through a glass slab is displaced but its direction is not changed.

D. Match the following.

1. Danger signals	blue
2. Smoke coming out of coal fired chimney on a misty day	dark
3. Colour of sky at high altitudes	red
4. Sun at sunrise and sunset	blue
5. Colour of sky from the surface of earth	red

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

Class: X Date: .....

E. Answer the following questions.

Very Short Answer Questions

1. What is the outer part of eye composed of?
2. Define far point of the eye.

Short Answer Questions

1. What is Tyndall effect?
2. Define a rainbow.

Long Answer Questions

1. Explain the formation of a rainbow.
2. Explain why planets do not twinkle.

ANSWERS

WORKSHEET 2

A. Tick (✓) the correct option.

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

B. Fill in the blanks.

1. retina
2. ciliary
3. myopia, concave
4. rods, cones
5. spectrum

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

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

D. Match the following.

1. Danger signals	red
2. Smoke coming out of coal fired chimney on a misty day	blue
3. Colour of sky at high altitudes	dark
4. Sun at sunrise and sunset	red
5. Colour of sky from the surface of earth	blue

E. Answer the following questions.

Very Short Answer Questions

1. The outer part of eye is composed of three layers of tissue namely, sclerotic, choroid and retina.
2. The farthest point upto which the eye can see objects clearly without strain is called the far point of the eye.

Short Answer Questions

1. The size of colloidal particles is large. When a beam of light strikes such particles, they scatter the light falling on them in all the directions making the particles visible. This phenomenon is known a Tyndall effect.
2. A rainbow is a natural spectrum of sunlight in the form of bows appearing in the sky when sun shines on raindrops after a rain shower.

Long Answer Questions

1. A rainbow is formed in the direction opposite to that of the sun.
   - When white light from sun enters a spherical raindrop, the light is refracted and dispersed. The different colours of light are bent through different angles.
   - When different colours of light fall on the inner surface of the raindrop, it reflects them internally.
   - The raindrop finally refracts the different colours again when they come out of it.
   - These different colours of light after leaving the raindrop reach the observer's eye. Thus, we see a rainbow.
2. Planets are very close to the earth as compared to the stars. So, the intensity of light we receive from the planets is very large. Therefore, small variations in their positions and brightness are not noticeable. Thus, the brightness of the planets always remains the same. Hence, planets do not twinkle.