Class – X **Physics** **Human Eye and the Colourful World**

Q1. What is meant by power of accommodation of the eye?
Ans. The ability of the eye to focus the distant objects as well as the nearby objects on the retina by changing the focal length of the eye lens is called power of accommodation.

Q2. A person with a myopic eye cannot see objects beyond 1.2 m distincti What should be the type of the corrective lens used to restore proper vision?
Ans. A person with a myopic eye can use concave lens to restore proper vision.

Q3. What is the far point and near point of the human eye with normal vision?
Ans. The far point is infinity and the near point is 25 cm of the human eye with normal vision.

Q4. A student has difficulty reading the blackboard while sitting in the It row. What could be the defect the child is suffering from? How can it be corrected?
Ans. A student is suffering with the eye defect named myopia, in this defect person can see nearby objects clearly but cannot see far off objects distinctly. It can be corrected by using concave lens.

Q5. The human eye can focus 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
Ans. (b) accommodation

Q6. The human eye forms the image of an object at its
(a) cornea. (b) iris.
(c) pupil. (d) retina.
Ans. (d) retina.

Q7. The least distance of distinct vision for a young adult with normal vision is about
(a) 25 m. (b) 2.5 cm.
(c) 25 cm. (d) 2.5 m.
Ans. (a) 25 cm

Q8. The change in focal length of an eye tens is caused by the action of the
(a) pupil. (b) retina.
(c) ciliary muscles. (d) iris.
Ans. (c) ciliary muscles.

Q 9 Why i a normal eye not able to see clearly the objects placed closer than 25 cm?
Ans. Ciliary muscles can contract the lens of human eye to a certain limit because of which a person with normal vision can see the nearby objects clearly only if placed at 25 cm but if the object is placed closer to the eye than it cannot see the objects clearly

Q10. What happens to the image distance in the eye when we increase the distance of an object from the eye?
Ans. The image distance in the eye remains the same. On increasing the distance of an object from the eye, the focal length of the eyes changes due to ciliary muscles which helps an eye to focus the object image on retina.

Q11. Why do stars twinkle?
Ans. Stars twinkle due to atmospheric refraction of light from the stars and changing density of air around the earth.

Q12. Explain why the planets do not twinkle.
Ans. Planets are much closer to earth and behave like extended source.

Q13. Why does the sun appear reddish early in the morning?
Ans. When the sun rises early in the morning (or set in the evening), the light from sun travels through the thicker layer of air and larger distance of the atmosphere surrounding the earth. PIence the blue light scatters the most but red light does not scatters and reaches our eyes.

Q14. Why does the sky appear dark instead of blue to an astronaut?
Ans. In space there are no particles, air, gases, water droplets etc., present to scatter the light. So when the astronauts look at the sky in the space, there is no light entering our eyes, hence it appears dark.

MULTIPLE CHPOICE QUESTIONS

1. The image formed by retina of human eye is
   a. Virtual and erect
   b. Real and inverted
   c. Virtual and inverted
   d. Real and erect
2. The change in the focal length of human eye is caused due to
   a. Ciliary muscles
   b. Pupil
   c. Cornea
   d. Iris
3. The least distance of distinct vision for a young adult with normal vision is
   a. 25 m
   b. 20 m
   c. 25 cm
   d. 20 cm
4. The persistence of vision for human eye is
   a. 1/10th of a second
   b. 1/16th of a second
   c. 1/6th of the second
   d. 1/18th of a second
5. The light sensitive cell present on retina and is sensitive to the intensity of light is:
   a. Cones
   b. Rods
   c. Both rods and cones
   d. None of these

6. The phenomena of light responsible for the working of the human eye is
   a. Reflection
   b. Refraction
   c. Power of accommodation
   d. Persistence of vision

7. Which of the following colors is least scattered by fog, dust of smoke?
   a. Violet
   b. Blue
   c. Red
   d. Yellow

8. The colored light that refracts most while passing through a prism is
   a. Yellow
   b. Violet
   c. Blue
   d. Red

9. The amount of light entering the human eye is controlled by
   a. Ciliary muscles
   b. Pupil
   c. Cornea
   d. Iris

10. The part of the eyes refracts light entering the eye from external objects?
   a. Lens
   b. Cornea
   c. Iris
   d. Pupil

ANSWERS

1. B
2. A
3. C
4. B
5. B
6. B
7. C
8. B
9. B
10. B