CLASS X – SCIENCE – CHAPTER 10

HUMAN EYE AND THE COLOURFUL WORLD

Name: Date:

CHOOSE THE CORRECT OPTION FROM QUES 1 TO 5

Q01. When a person is myopic, he/ she can clearly see

(a) both nearby and for off objects (b) Only nearby objects

(c) only far off objects (d) Neither nearby nor for off objects

Q02. The defect of myopia can be corrected by using

(a) Concave lens (b) Convex lens

(c) Either concave or convex (d) A complicated combination of lenses.

Q03. The colour that is scattered the least by the tiny particles and the atoms/molecules of the atmosphere is

(a) Violet (b) Green

(c) yellow (d) Red

Q04. Which of the following phenomenon contributes significantly to the reddish appearance of the sun at sunrise or sunset?

(a) Dispersion of light (b) Scattering of light

(c) Total internal Reflection (d) Reflection of light from the earth

Q05. The focal length of the eye lens increases when eye muscles.

(a) are relaxed and lens becomes thinner (b) contract and lens becomes thicker

(c) are relaxed and lens becomes thicker (d) Contract and lens becomes thinner.

Q01. The far point of a myopic person is 80cm in front of the eye. What is the nature and power of the lens required to correct the problem?

Q02. Draw a diagram to show the dispersion of white light by a glass prism.

Q03. Name the phenomenon responsible for the observed twinkling of stars. Will this twinkling be observed by an observer on the moon?

Q04. Define power of accommodation?

Q05. Which part of the human eye provides most of the refraction for the light rays entering the eye?

Q06. What happens to the image distance in the eye when we increase the distance of an object from the eye?

Q07. What happens to the pupil of the eye when the light is very bright?

Q08. Which part of the human eye conveys the electrical signals generated by the light sensitive cells of the retina, on the brain?

Q09. Name the part of the eye that

(a) determines the colour of a person's eye

(b) Controls the amount of light entering the eye

Q10. What is the role of the ciliary muscles?

Q11. What convex lens is called as converging lens?

Q12. State the sole of eye lens in the human eye?

Q13. What is presbyopia? State the causes of this defect? How is presbyopia of a person corrected?

Q14. The rainbow is a natural spectrum appearing in the sky after a rain shower

(a) Is it correct to say that a rainbow is always formed in a direction opposite to sun?

(b) It cannot be seen on a sunny day.

(c) Arrange the sequence in correct sequential order Refraction, Internal Reflection, Refraction and Dispersion

Q15. (a) What is hypermetropia?

(b) What are the two causes of this defect of vision?

Q16. (a) What is scattering of light?

(b) Astronauts observe the sky as dark instead of blue why?

(c) Draw the diagram to show how this defect can be corrected.

Q17. (a) Write two causes of hypermetropia?

(b) Show diagram to show the correctness of hypermetropia?

Q18. A reporter records the following observations of an astronaut from his space ship.

(a) The length of the day is same as observed on the earth.

(b) Sky appears black in colour.

(c) The star appears to twinkle while the planets do not do so as they do on the earth. Justify each statement.

Q19. A person is known to use a lens of power

(i) (–5.5) D for his distant vision (ii) +1.5 D for his near vision

Calculate the focal length of the lens used for correcting his

(a) Distant vision and (b) Near vision problems.

Q20. A 14-year-old student is not able to see clearly the questions written of the black board placed at a distance of 5m from him.

(a) Name the defect of vision he is suffering from?

(b) Draw the diagram to show this defect?

(c) Name the type of lens used to correct this defect?

(d) Name two possible cause of this defect.