**Chapter 11**

 **The Human Eye**

1. The student should carry on survey in and around their house and make list of people who use glasses. Note down the type of lens present in their spectacles.
2. I was taking a walk in bright light I could see everything. After finishing my walk when I went inside a room where the light was dim for some time I could not see and when some time had lapsed I could see clearly. Suggest what could be the reason for this.
3. a) As shutter is to camera;;\_\_\_\_\_\_\_\_\_\_\_ is to eyes.

b) As film is to camera;\_\_\_\_\_\_\_\_\_\_ is to eyes.

1. Fill in the blanks
2. The eye lens is a \_\_\_\_\_\_\_\_\_\_ lens made up of transparent crystalline layer.
3. The \_\_\_\_\_\_\_\_\_\_ help us in colour vision and get activated in bright light conditions.
4. The \_\_\_\_\_\_\_\_\_\_\_ of the eye is insensitive to light.
5. For an adult with normal eye the near point equals to\_\_\_\_\_\_\_\_\_\_.
6. Most visually challenged persons have a better sense of touch,\_\_\_\_\_\_\_\_\_\_ or hearing than the normal person.
7. In hypermetropia the image of nearby objects gets formed\_\_\_\_\_\_\_\_ the retina.
8. The ability of eye lens to adjust its shape and focal length is known as \_\_\_\_\_\_.
9. The \_\_\_\_\_\_\_\_\_\_ cells respond to the amount of \_\_\_\_\_\_\_\_\_\_ light energy.
10. The distance between the near point and far point is called \_\_\_\_\_\_\_\_\_\_\_.
11. State whether the given statements are true/false
12. The image formed on the retina of eye does not fade away instantaneously.
13. In dim light the cones are sensitive but the rods are not.
14. No image gets formed on the blind spot of eye.
15. The iris is responsible for the characteristic colour of the eye of a person.
16. The light- sensitive layer of the eye is cornea.
17. Define the following
18. Myopia
19. Hypermetropia
20. Persistence of vision
21. Power of accommodation
22. Blind spot
23. Multiple choice questions
24. Which of the following is not one of the precautions suggested for proper functioning of the human eye?
25. Have a regular eye check up
26. Never look at the sun or any other powerful light source directly.
27. Do not wash the eyes ever d) Eat balanced diet.
28. When a person is not able to see distant objects clearly he seems to be suffering from
29. Myopia b) Hypermetropia c) accommodation d) none
30. The least distance of distinct vision is
31. 25 cm b) 10cm c) 100cm d) 35 cm
32. We are able to see colours due to
33. Cones b) Rods c) Optic nerve d) none
34. Draw a labelled diagram of eye.
35. What is the function of ciliary muscles?
36. Where are rods and cones present? How are rods different from cones?
37. State 5 precautions should be taken to ensure health and proper functioning of eyes.
38. Give reason for the following
39. No image gets formed at the junction of the optic nerve and the retina.
40. Eye of butterfly are large eyes seem to be made up of thousands of little eyes.
41. The eye is able to see distant as well as nearby objects with almost the same clarity.
42. In old age the eye lens of some people become hazy or even opaque.
43. Some people are not able to distinguish between colour.
44. What do you understand by power of accommodation? How does the lens help in accommodation?
45. Complete the given table

|  |  |  |  |
| --- | --- | --- | --- |
| S.N | Name of defect | Reason for defect | How can be corrected |
|  1 | Myopia |  |  |
|  2 | Hypermetropia |  |  |
|  3 | Cataract |  |  |

1. Draw a diagram to show Myopia.
2. Which people are known as visually challenged persons? What could cause visual problems?
3. Briefly describe the working of eye.
4. What helps us to perceive the object is moving?
5. How do we see colours?
6. What is range of vision? Also define the far point and the near point of the eye.
7. Differentiate between Non-optical and Optical aids.
8. Who was responsible for most effective resource for visually challenged person?
9. State three important characteristics of the tactual aid used by visually impaired to read and write.

  **Chapter 12**

 **Sound**

1. A small boy takes a wooden pipe and blows some air into it a sound is produced. Suggest the reason for production of the sound.
2. The student should note down at least 5 musical instruments they have seen in their house and school and also state which part of the instrument vibrates to produce sound.
3. I am able to see a bell ringing inside a jar but I am not able to hear it, state why I am not able to hear it?
4. Give an activity to show that sound travels fastest in solid.
5. Fill in the blanks
6. The basic cause of all sounds is \_\_\_\_\_\_\_\_\_\_\_.
7. Frogs while croaking puff their \_\_\_\_\_\_\_\_\_\_\_up their throat.
8. The voice box of human beings has two \_\_\_\_\_\_\_\_\_\_\_ stretched across it.
9. Sound propagates much faster through \_\_\_\_\_\_\_\_\_\_\_\_as compared to gases.
10. The number of vibrations produced in one second is \_\_\_\_\_\_\_\_\_\_\_.
11. The \_\_\_\_\_\_\_\_\_\_\_ describes the shrillness or flatness of a sound.
12. The frequency below 20 hertz that cannot be detected by the ear is known as\_\_\_\_\_\_\_\_\_\_ frequency.
13. Noise is due to sounds produced by \_\_\_\_\_\_\_\_\_\_or \_\_\_\_\_\_\_\_\_\_\_ vibrations.
14. \_\_\_\_\_\_\_\_\_\_ of trees along roadsides helps in absorbing sound.
15. State whether given statement are true /false
16. People staying near the highway often bear the brunt of excessive noise.
17. The musical or pleasant sound is created by irregular or non-periodic vibrations.
18. Sound of frequency higher than 20000Hz is known as ultrasonic sound.
19. The male voice in human beings is shriller than female.
20. The SI unit of frequency is \_\_\_\_\_\_\_\_\_\_\_.
21. Define the following
22. Amplitude
23. Frequency
24. Time Period
25. Noise pollution
26. Ultrasounds
27. Give reasons for the following
28. There is difference in the characteristics of sound of man and woman.
29. If a loud explosion takes place on moon it is not heard at nearby points.
30. The thundering sounds are always heard a little after seeing the flash of light.
31. People living near the railway tracks know well in advance about an approaching train.
32. Human beings are not able to hear sound of all frequencies.
33. The noise pollution can lead to deterioration of mental health.
34. Give one word answer for the following
35. Sound having frequency below 20 hertz:
36. Device used by doctors based on multiple reflection of sound:
37. Sound at high pitch:
38. The SI unit of frequency:
39. Sound produced by regular or periodic vibrations:
40. Multiple choice questions
41. The noise is produced due to
42. Regular or periodic vibrations b) irregular or non-periodic vibrations c) no vibrations d) none of the above
43. The frequency below which sound cannot be detected by human beings is
44. 20 Hertz b) 30 Hertz c) 20,000 Hertz d) none
45. In case of human beings the voice of female has \_\_\_\_\_\_\_ frequency than that of male.
46. Higher b) Lower c) Same
47. The SI unit of amplitude is \_\_\_\_\_\_
48. Metre b) Seconds c) hertz d) none
49. Two astronauts are floating close to each other in space, Can they talk to each other in space normally or by using special device. Give reason for the answer.
50. A simple pendulum makes 30 oscillations in 45 seconds. Calculate the time –period and frequency of the oscillations.
51. Suppose I have a sitar and I pluck its string in the middle with force of greater magnitude and then pluck at the same point with the force of smaller magnitude. In which case the sound produced by sitar will be louder and why?
52. Why are we not able to hear explosions taking place in the outer space?
53. List the factors that affect the speed of sound through a medium.
54. Suppose a person strikes a metal plate with a stick in a vacuum.
55. Will the plate vibrate?
56. Will the person be able to hear the sound? Give reason also
57. Which mechanism helps the birds to produce sound?
58. When is the pitch of sound produced by insect higher?
59. Arrange the medium in the increasing order of speed of sound
60. Water, Wooden box, Air
61. Alcohol, Nitrogen gas, Brass plate
62. What is noise pollution? State the causes of noise pollution.
63. What measures should be taken to limit noise pollution?
64. What is hearing impairment? What could be the possible reasons for it?
65. How can noise pollution affect the health of a person?
66. What helps us to get the feeling of continuity while hearing one sound after another?
67. What is speech? How is it produced?
68. Some animals get disturbed before an earthquake, support the given statement with example and reason