**MCQs Human Eye and Colourful World**

Human Eye Class 10 MCQ Question 1.  
The muscular diaphragm that controls the size of the pupil is  
(a) cornea  
(b) ciliary muscles  
(c) iris  
(d) retina

**Answer/Explanation**

Answer: c  
Explanation:  
(c) Iris control the size of pupil.

2. Having two eyes facilitates in  
A : Increasing the field of view  
B : Bringing three-dimensional view  
C : Developing the concept of distance/ size  
Then the correct option is/are  
(a) A only  
(b) A and B only  
(c) B only  
(d) A, B and C

**Answer**

Human Eye And Colourful World Class 10 MCQ With Answer:  
d

3. The black opening between the aqueous humour and the lens is called  
(a) retina  
(b) iris  
(c) cornea  
(d) pupil

**Answer/Explanation**

Answer: d  
Explanation:  
(d) The black opening between the aqueous humour and the eye lens is called pupil.

4. Near and far points of a young person normal eye respectively are  
(a) 0 and infinity  
(b) 0 and 25 cm  
(c) 25 cm and infinity  
(d) 25 cm and 150 cm.

**Answer/Explanation**

Answer: c  
Explanation:  
(c) Near point = 25 cm while far point = infinity.

5. The defect of vision in which the person is able to see distant object distinctly but cannot see nearby objects clearly is called  
(a) Long-sightedness  
(b) Far-sightedness  
(c) Hypermetropia  
(d) All above

**Answer/Explanation**

Answer: d  
Explanation:  
(d) Hypermetropia is also called long-sightedness or far-sightedness.

Human Eye And Colourful World Class 10 MCQ Question 6. The ability of eye lens to adjust its focal length to form a sharp image of the object at varying distances on the retina is called  
(a) Power of observation of the eye  
(b) Power of adjustment of the eye  
(c) Power of accommodation of the eye  
(d) Power of enabling of the eye

**Answer/Explanation**

Answer: c  
Explanation:  
(c) It is called power of accommodation of the eye.

7. Myopia and hypermetropia can be corrected by  
(a) Concave and plano-convex lens  
(b) Concave and convex lens  
(c) Convex and concave lens  
(d) Plano-concave lens for both defects.

**Answer/Explanation**

Answer: b  
Explanation:  
(b) Myopia is corrected by using of suitable power of concave lens while hypermetropia is corrected by convex lens.

8. Bi-focal lens are required to correct  
(a) astigmatism  
(b) coma  
(c) myopia  
(d) presbyopia

**Answer/Explanation**

Answer: d  
Explanation:  
(d) Bifocal lens are required to correct the presbyopia. Upper point of bifocal lens consists of concave lens used for distant vision while lower point consists of convex lens facilitate near vision.

MCQ On Human Eye With Answers Pdf Question 9. The defective eye of a person has near point 0.5 m and point 3 m. The power far corrective lens required for  
(i) reading purpose and  
(ii) seeing distant objects, respectively are:  
(a) 0.5 D and +3D  
(b) +2D and – \(\frac{1}{3}\) D  
(c) – 2D and + \(\frac{1}{3}\)D  
(d) 0.5 D and-3.0 D

**Answer/Explanation**

Answer: b  
Explanation:  
(b) For reading purpose

10. The image formed on the retina of the human eye is  
(a) virtual and inverted  
(b) real and inverted  
(c) real and erect  
(d) virtual and erect

**Answer/Explanation**

Answer: b  
Explanation:  
(b) Eye lens is convex in nature. So, image formed by it on the retina is real and inverted.

11. When white light enters a prism, it gets split into its constituent colours. This is due to  
(a) different refractive index for different wavelength of each colour  
(b) each colours has same velocity in the prism.  
(c) prism material have high density.  
(d) Scattering of light

**Answer/Explanation**

Answer: a  
Explanation:  
(a) Dispersion takes place because refractive index of the material of prism is different for different wavelength.

Human Eye And Colourful World MCQ Question 12.  
The air layer of atmosphere whose temperature is less then the hot layer behave as optically  
(a) denser medium  
(b) rarer medium  
(c) inactive medium  
(d) either denser or rarer medium

**Answer/Explanation**

Answer: a  
Explanation:  
(a) The cold air layer of the atmosphere acts as a optically denser medium than hot air because the molecules are closely packed together.

13. Refraction of light by the earth’s atmosphere due to variation in air density is called  
(a) atmospheric reflection  
(b) atmospheric dispersion  
(c) atmospheric scattering  
(d) atmospheric refraction

**Answer/Explanation**

Answer: d  
Explanation:  
(d) This phenomena is called atmospheric refraction.

14. The deflection of light by minute particles and molecules of the atmosphere in all direction is called \_\_\_\_\_\_\_\_\_\_\_\_ of light.  
(a) dispersion  
(b) scattering  
(c) interference  
(d) tyndell effect

**Answer/Explanation**

Answer: b  
Explanation:  
(b) The said phenomenon is called scattering of light.

15. One cannot see through the fog, because  
(a) refractive index of the fog is very high  
(b) light suffers total reflection at droplets  
(c) fog absorbs light  
(d) light is scattered by the droplets

**Answer/Explanation**

Answer: d  
Explanation:  
(d) Objects are not visible through the fog because droplets scatter the light rays.

Multiple Choice Questions And Answers On Human Eye Question 16.  
A person cannot see distinctly objects kept beyond 2 m. This defect can be corrected by using a lens of power [NCERT Exemplar Problems]  
(a) + 0.5 D  
(b) – 0.5 D  
(c) + 0.2 D  
(d) – 0.2 D

**Answer/Explanation**

MCQ On Human Eye With Answer: b  
Explanation:  
(b) Person cannot see distant objects clearly. So he is suffering from myopia. The defect is corrected by using concave lens of power  
P = \(\frac{1}{f}=\frac{1}{-2 m}\) =-0.5

MCQ Questions On Human Eye And Colourful World Pdf 17.  
A prism ABC (with BC as base) is placed in different orientations. A narrow beam of white light is incident on the prism as shown in figure. In which of the following cases, after dispersion, the third colour from the top corresponds to the colour of the sky? [NCERT Exemplar Problems]

**Answer/Explanation**

Answer: b  
Explanation:  
(b) In figure (a) base BC of the prism is at the bottom, then violet colour lies at the bottom but in figure (b), the base BC is at the top, then violet would be at the top after dispersion, and third colour would be blue.

18. At noon the sun appears white as [NCERT Exemplar Problems]  
(a) light is least scattered  
(b) all the colours of the white light are scattered away  
(c) blue colour is scattered the most  
(d) red colour is scattered the most

**Answer/Explanation**

Answer: a  
Explanation:  
(a) At noon, the sun is at top and the light rays coming from the sun have to travel lens distance hence, all colours get scattered very less even blue and violet.

19. Twinkling of stars is due to atmospheric [NCERT Exemplar Problems]  
(a) dispersion of light by water droplets  
(b) refraction of light by different layers of varying refractive indices  
(c) scattering of light by dust particles  
(d) internal reflection of light by clouds.

**Answer/Explanation**

Answer: b  
Explanation:  
(b) Twinkling of star is due to atmospheric refraction of starlight caused by the gradual change in refractive index of different air layers at different height, the apparent position of star keeps on changing.

MCQs On Human Eye And Colourful World Question 20.  
The clear sky appears blue because [NCERT Exemplar Problems]  
(a) blue light gets absorbed in the atmosphere.  
(b) ultraviolet radiations are absorbed in the atmosphere.  
(c) violet and blue lights get scattered more than lights of all other colours by the atmosphere.  
(d) light of all other colours is scattered more than the violet and blue colour lights by the atmosphere.

**Answer/Explanation**

Answer: c  
Explanation:  
(c) Violet and blue colour have shorter wavelength. So, they scattered more than lights of other colour by the molecules present in the atmosphere.

21. The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light [NCERT Exemplar Problems]  
(a) is scattered the most by smoke or fog  
(b) is scattered the least by smoke or fog  
(b) is absorbed the most by smoke or fog  
(c) moves fastest in air

**Answer/Explanation**

Answer: b  
Explanation:  
(b) Red colour has longer wavelength so least scattered by smoke or fog.

22. The bluish colour of water in deep sea is due to [NCERT Exemplar Problems]  
(a) the presence of algae and other plants found in water  
(b) reflection of sky in water  
(c) scattering of light  
(d) absorption of light by the sea

**Answer/Explanation**

Answer: c  
Explanation:  
(c) The fine water molecules mainly scatter blue light due to its shorter wavelength.

23. When light rays enter the eye, most of the refraction occurs at the [NCERT Exemplar Problems]  
(a) crystalline lens  
(b) outer surface of the cornea  
(c) iris  
(d) pupil

**Answer/Explanation**

Answer: b  
Explanation:  
(b) Most of the refraction for light rays entering the eye occurs at the outer surface of cornea which acts a primary lens converging in nature.

24. The focal length of the eye lens increases when eye muscles [NCERT Exemplar Problems]  
(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

**Answer/Explanation**

Answer: a  
Explanation:  
(a) Ciliary muscles modify the curvature of eye lens. When eye muscles are relaxed, eye lens becomes thinner thereby are relaxed, eye lens becomes thinner thereby increase in the focal length of eye lens.

MCQ On Human Eye Class 10 Direction (Q25 to Q30):  
In the following Questions, the Assertion and Reason have been put forward. Read the statements carefully and choose the correct alternative from the following:  
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.  
(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.  
(c) Assertion is true but the Reason is false.  
(d) The statement of the Assertion is false but the Reason is true.  
25. Assertion: Blind spot is a small area of the retina which is insensitive to light where the optic nerve leaves the eye.  
Reason: There are no rods or cones present at the junction of optic nerve and retina in the eye.

**Answer/Explanation**

Answer: a  
Explanation:  
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

26. Assertion: The near-point of a hypermetropic eye is more than 25 cm away.  
Reason: Hypermetropia is corrected using spectacles containing concave lenses.

**Answer/Explanation**

Answer: c  
Explanation:  
(c) Assertion is true but the Reason is false.

27. Assertion: Myopia is the defect of vision in which a person cannot see the distant objects clearly.  
Reason: This due to eye-ball being too short.

**Answer/Explanation**

Answer: c  
Explanation:  
(c) Assertion is true but the Reason is false.

28. Assertion: Concave mirrors are used as reflectors in torches, vehicle head-lights and in search lights.  
Reason: When an object is placed beyond the centre of curvature of a concave mirror, the image formed is real and inverted.

**Answer/Explanation**

Answer: b  
Explanation:  
(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

29. Assertion: The light emerges from a parallel-sided glass slab in a direction perpendicular with that in which enters the glass slab.  
Reason: The perpendicular distance between the original path of incident ray and emergent ray coming out of glass slab is called lateral displacement of the emergent ray of light.

**Answer/Explanation**

Answer: d  
Explanation:  
(d) The statement of the Assertion is false but the Reason is true.

30. Assertion: When a pencil is partly immersed in water and held obliquely to the surface, the pencil appears to bend at the water surface.  
Reason: The apparent bending of the pencil is due to the refraction of light when it passes from water to air.

**Answer/Explanation**

Answer: a  
Explanation:  
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

31. The least distance of distinct vision for a nor¬mal eye is  
(a) infinity  
(b) 25 cm  
(c) 2.5 cm  
(d) 25 m

**Answer**

Answer: b

32. A person cannot see distinctly objects kept beyond 2 m. This defect can be corrected by using a lens of power  
(a) +0.5 D  
(b) -0.5 D  
(c) +0.2 D  
(d) -0.2 D

**Answer**

Answer: b

33. The defect of vision in which a person cannot see the distant objects clearly but can see nearby objects clearly is called  
(a) myopia  
(b) hypermetropia  
(c) presbyopia  
(d) bifocal eye

**Answer**

Answer: a

34. The splitting of white light into different colours on passing through a prism is called  
(a) reflection  
(b) refraction  
(c) dispersion  
(d) deviation

**Answer**

Answer: c

35. At noon, the Sun appears white as  
(a) blue colour is scattered the most  
(b) red colour is scattered the most  
(c) light is least scattered  
(d) all the colours of the white light are scattered away

**Answer**

Answer: c

36. Twinkling of stars is due to  
(a) reflection of light by clouds  
(b) scattering of light by dust particles  
(c) dispersion of light by water drops  
(d) atmospheric refraction of starlight

**Answer**

Answer: d

37. When white light enters a glass prism from air, the angle of deviation is least for  
(a) blue light  
(b) yellow light  
(c) violet light  
(d) red light

**Answer**

Answer: d

38. When white light enters a glass prism from air, the angle of deviation is maximum for  
(a) blue light  
(b) yellow light  
(c) red light  
(d) violet light

**Answer**

Answer: c

39. The amount of light entering the eye can be controlled by the  
(a) iris  
(b) pupil  
(c) cornea  
(d) ciliary muscles

**Answer**

Answer: b

40. What type of image is formed by the eye lens on the retina?  
(a) Real and erect  
(b) Virtual and inverted  
(c) Real and inverted  
(d) Virtual and erect

**Answer**

Answer: c

41. The medical condition in which the lens of the eye of a person becomes progressively cloudy resulting in blurred vision is called  
(a) myopia  
(b) hypermetropia  
(c) presbyopia  
(d) cataract

**Answer**

Answer: d

42. The defect of the eye in which the eyeball becomes too long is  
(a) myopia  
(b) hypermetropia  
(c) presbyopia  
(d) cataract

**Answer**

Answer: a

43. The defect of vision in which the image of nearby objects is formed behind the retina, is  
(a) myopia  
(b) short-sightedness  
(c) hypermetropia  
(d) presbyopia

**Answer**

Answer: c

44. Which of the following is a natural phenomenon which is caused by the dispersion of sunlight in the sky?  
(a) Twinkling of stars  
(b) Stars seem higher than they actually are  
(c) Advanced sunrise and delayed sunset  
(d) Rainbow

**Answer**

Answer: d

Objectives Questions On Human Eye And The Colourful World 45.  
Name the scientist who was the first to use a glass prism to obtain the spectrum of sunlight.  
(a) Isaac Newton  
(b) Einstein  
(c) Kepler  
(d) Hans Christian Oersted

**Answer**

Answer: a

46. Very fine particles scatter more of \_\_\_\_\_\_\_\_\_\_\_\_ colour.

**Answer/Explanation**

Answer: c  
Explanation: blue

Human Eye Class 10 MCQ Question 47.  
Red light is used for signals as it is \_\_\_\_\_\_\_\_\_\_\_\_ scattered.

**Answer/Explanation**

Answer: c  
Explanation: less

48. Bi-focal lens is used to correct \_\_\_\_\_\_\_\_\_\_\_\_ refractive error.

**Answer/Explanation**

Answer: c  
Explanation: presbyopic

49. Hypermetropic eye is corrected by using \_\_\_\_\_\_\_\_\_\_\_\_ lens.

**Answer/Explanation**

Answer: c  
Explanation: convex

50. When light falls at critical angle on the surface of a rarer medium while coming from a denser medium, the refracting angle is \_\_\_\_\_\_\_\_\_\_\_\_ .

**Answer/Explanation**

Answer: c  
Explanation: 90°

51. The dispersion of white light occurs because colours of white light at different \_\_\_\_\_\_\_\_\_\_\_\_ through the glass prism.

**Answer/Explanation**

MCQ Of Human Eye And Colourful World Answer: c  
Explanation: speed

52. 28 frames are projected per second in motion picture. [True/False]

**Answer/Explanation**

Answer: c  
Explanation: False

53. Myopia is caused due to excessive curvature in cornea. [True/False]

**Answer/Explanation**

Human Eye MCQ Answer: c

Explanation: True

54. A lens of higher focal length has less power. [True/False]

**Answer/Explanation**

Answer: c  
Explanation: True

55. Power of accommodation for a normal eye is 4 dioptre. [True/False]

**Answer/Explanation**

Answer: c  
Explanation: True

56. The optical nerves carry signals to the brain. [True/False]

**Answer/Explanation**

Answer: c  
Explanation: True

MCQ Questions On Human Eye And Colourful World Direction:  
Match Column I with Column II.  
57.

|  |  |
| --- | --- |
| Column I | Column II |
| (i) Twinkling stars | (A) Suspended water drops |
| (ii) Blue sky | (B) Group of colours |
| (iii) Rainbow | (C) Scattering |
| (iv) Spectrum | (D) Changing atmosphere |

**Answer/Explanation**

Answer: c  
Explanation:  
(i) → (D)  
(ii) → (C)  
(iii) → (A)  
(iv) → (B)

58. In a human eye, name the following parts:  
(a) a thin membrane which allows light to enter the eye.  
(b) the muscles which help in changing the focal length of eye lens.

**Answer/Explanation**

Answer: c  
Explanation:  
(a) Cornea  
(b) Ciliary muscles

59. Name the part of our eyes that helps us to focus near and distant objects in quick succession.

**Answer/Explanation**

Answer: c  
Explanation:  
Ciliary muscles help in changing the focal length of the eye lens.

60. In which direction, the near point of hypermetropic eye is shifted from the normal near point?

**Answer/Explanation**

Answer: c  
Explanation:  
The near point of hypermetropic eye is shifted farther away from the normal near point.

61. Name the part responsible for the power of accommodation of the human eye.  
Or  
Name the component of eye that is responsible for the adjustment of eye lens? [DoE]

**Answer/Explanation**

Answer: c  
Explanation: Ciliary muscles

62. A person suffering from an eye defect uses lenses of power ID. Name the defect he is suffering from and the nature of lens used.

**Answer/Explanation**

Answer: c  
Explanation: Hypermetropia; convex lens.

63. What is the nature of eye lens of human eye and that of the image formed at the retina of the eye by it?

**Answer/Explanation**

Answer: c  
Explanation:  
The nature of eye lens in human eye is convex nature of the image formed on the retina by it is real, inverted and diminished.

64. Mention the role of optic nerve in the human eye.

**Answer/Explanation**

Answer: c  
Explanation:  
Role of optic nerve in human eye: It transmits the visual information in the form of electrical signal generated at retina to the brain.

65. What is the other name of old hypermetropia?

**Answer/Explanation**

Answer: c  
Explanation: Presbyopia.

Fill in the Blanks

1. The ability of the eye to focus both near and distant objects, by adjusting its focal length, is called the ……….. of the eye.  
2. ……….. of light causes the blue colour of sky and reddening of the Sun at sunrise and sunset.  
3. Most of the refraction of light rays entering the eye occurs at the outer surface of the ……….. .  
4. Due to the greater converging power of the eye lens in a myopic eye, the image of distant object is formed ……….. the retina.  
5. A person suffering from both myopia and hypermetropia uses ……….. leases.

Answers

1. accommodation  
2. Scattering  
3. cornea  
4. in front of  
5. bifocal