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Time	Subjects
4:00 - 4:45	Science
4:45 - 5:30	Mathematics/Reasoning
5:30 - 6:15	Social Science (History, Civics & Geography)
6:15 - 7:00	English (Subjective and Objective)
7:00 - 7:30	Hindi



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Chapter - 11
Chapter The Human Eye and the
Colourful World (MCQs)

Part - I

Question 1. The muscular diaphragm that controls the size of the pupil is

- (a) cornea
- (b) ciliary muscles
- (c) iris
- (d) retina

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: d

3. The black opening between the aqueous humour and the lens is called

- (a) retina
- (b) iris
- (c) cornea



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(d) pupil

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: 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: d

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

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



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(d) Power of enabling of the eye

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: 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: 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.

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:



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- (a) 0.5 D and +3D
- (b) +2D and - D
- (c) - 2D and + D
- (d) 0.5 D and -3.0 D

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: 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: a

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

12. The air layer of atmosphere whose temperature is less than the hot layer behave as optically



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- (a) denser medium
- (b) rarer medium
- (c) inactive medium
- (d) either denser or rarer medium

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: 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: b

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

15. One cannot see through the fog, because



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- (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: d

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

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: 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

$$P = -0.5$$

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: 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: a

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

19. Twinkling of stars is due to atmospheric

- (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: 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.

Question 20. The clear sky appears blue because

- (a) blue light gets absorbed in the atmosphere.



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(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: 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

(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: b

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

22. The bluish colour of water in deep sea is due to

(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



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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

- (a) crystalline lens
- (b) outer surface of the cornea
- (c) iris
- (d) pupil

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

- (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: a

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

25. The least distance of distinct vision for a normal eye is

- (a) infinity



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- (b) 25 cm
- (c) 2.5 cm
- (d) 25 m

Answer: b

26. 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: b

27. 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: a

28. The splitting of white light into different colours on passing through a prism is called

- (a) reflection
- (b) refraction
- (c) dispersion
- (d) deviation

Answer: c

29. At noon, the Sun appears white as

- (a) blue colour is scattered the most



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- (b) red colour is scattered the most
- (c) light is least scattered
- (d) all the colours of the white light are scattered away

Answer: c

30. 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: d

31. 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: d

32. 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: c

33. The amount of light entering the eye can be controlled by the

- (a) iris
- (b) pupil



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- (c) cornea
- (d) ciliary muscles

Answer: b

34. 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: c

35. 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: d

36. The defect of the eye in which the eyeball becomes too long is

- (a) myopia
- (b) hypermetropia
- (c) presbyopia
- (d) cataract

Answer: a

37. The defect of vision in which the image of nearby objects is formed behind the retina, is

- (a) myopia
- (b) short-sightedness



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(c) hypermetropia

(d) presbyopia

Answer: c

38. 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: d

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: a



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