

Class: X
Subject: physics
Topic: Human Eye and Colorful world
No. of Questions: 20
Duration: 60 Min
Maximum Marks: 60

1. Arranging in the ascending order of wavelength, which one is true?

- A. Blue, Green, Red
- B. Orange, Green, Red
- C. Blue, Yellow, Green
- D. Orange, Yellow, Green

Ans. A

2. The velocity of waves of all colors is same in _____

- A. water
- B. air
- C. vacuum
- D. All of the above

Ans. C

3. In a transparent medium, the velocity of _____ light is the least.

- A. red
- B. green
- C. yellow
- D. violet

Ans. D (velocity = wavelength x frequency)

4. Blue + red = _____

- A. magenta
- B. cyan
- C. yellow
- D. violet

Ans. A

5. Pigments are mixed according to _____ method.

- A. additive
- B. subtractive
- C. multiplicative
- D. fractional

Ans. B Subtractive

6. _____ can vary thickness and hence the focal length of eye-lens.

- A. Retina
- B. Vitreous humour
- C. Cornea
- D. Ciliary muscles

Ans. D

7. Primary pigments are:

- A. Yellow, green, magenta
- B. Magenta, yellow, cyan
- C. Blue, green, yellow
- D. Blue, green, violet

Ans. B

8. Hypermetropia is caused by...

- A. low converging power of eye lens
- B. low diverging power of eye lens
- C. high converging power of eye lens
- D. retinal displacement

Ans. A

9. If blue and yellow pigments are mixed, then the mixture reflects _____ which color of light?

- A. Green
- B. Orange
- C. Yellow
- D. Blue

Ans. A (As white lights fall, Blue pigment reflects V, G and B and yellow pigment reflects Y, G and O which means only green is reflected when both pigments are mixed)

10. The property of persistence of vision is used in-

- A. Short sightedness
- B. Long sightedness
- C. Cinematography
- D. Colour vision

Ans. C

11. Variable focal length of eye is responsible for-

- A. Accommodation of eye
- B. Persistence of vision
- C. Colour blindness
- D. Least distance of distinct vision

Ans: A

12. Blue colour of sky is due to-

- A. Scattering of light
- B. Reflection of light
- C. Refraction of light
- D. Diffraction of light

Ans. A

13. Red colour of the sun at the time of sunrise and sunset is because-

- A. Red colour is least scattered
- B. Blue colour is least scattered
- C. Red colour is scattered the most
- D. All colours are equally scattered

Ans. A

14. The convex lens of focal length 20cm each are separated by a distance of 10cm for focal length of combination is:

- A. 20cm
- B. 40cm
- C. 30cm
- D. 13.3cm

Ans. D ($1/f = 1/f_1 + 1/f_2 - d/f_1f_2$)

15. Two lenses of power -1.75D and $+2.75\text{D}$ are placed in contact. The focal length of the combination is:-

- A. 50cm
- B. 100cm
- C. 75cm
- D. 125cm

Ans. A ($P=1/f$; so, $1/\text{combinational focal length} = 1/f_1 + 1/f_2$)

16. When we enter a cinema hall, we cannot see properly for a short time. This is because-

- A. Pupil does not open
- B. Pupil does not close
- C. Adjustment of size of pupil takes some time
- D. None of these above

Ans. C

17. A concave lens of suitable focal length is used for correcting a-

- A. Myopic eye
- B. Hypermetropic eye
- C. Both a and b
- D. nor a nor b

Ans. A

18. The broad wavelength range of visible spectrum is-

- A. 4000-8000A
- B. 2000-4000A
- C. 10000-20000A
- D. None of the above

Ans. A

19. For which colour, refractive index of glass is maximum?

- A. Red
- B. Violet
- C. Green
- D. Yellow

Ans. B

20. Which colour suffers least deviation on passing through a prism?

- A. Red
- B. Violet
- C. Indigo
- D. Blue

Ans. A

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