

LIGHT - REFLECTION AND REFRACTION

Q.1) The magnification produces by a concave mirror-

- (A) is always more the one
- (B) is always less than one
- (C) is always equal to one
- (D) may be less than or greater than one

Q.2) If refractive index of water w.r.t. air is $\frac{4}{3}$, then refractive index of air w.r.t. water will be-

- (A) 4×3
- (B) $\frac{3}{4}$
- (C) $\sqrt{\frac{4}{3}}$
- (D) $\sqrt{\frac{3}{4}}$

Q.3) A swimming pool appears to be 2m deep. Its actual depth is (μ for water = 1.33)-

- (A) 2.66 m
- (B) 2m
- (C) 2.34 m
- (D) 2.54 m

Q.4) A spherical mirror and a spherical lens have each focal length of - 10cm. The mirror and lens are :

- (A) both convex
- (B) both concave
- (C) mirror is convex and lens is concave
- (D) mirror is concave and lens is convex

Q.5) Two lenses of +5D and -5D are placed in close contact. The focal length of the combination is :

- (A) Zero
- (B) ∞
- (C) Zero or ∞
- (D) None of these

Q.6) Focal length of coloured goggles (without number) is :

- (A) zero
- (B) infinity
- (C) between zero & infinity
- (D) None of these

Q.7) A convex lens is :

- (A) Thicker at the middle, thinner at the edges
- (B) Diverging
- (C) Thicker at the edges thinner in the middle
- (D) Of uniform thickness everywhere

Q.8) A thin lens is made with a material having refractive index $\mu = 1.5$. Both the sides are convex. It is dipped in water ($\mu = 1.33$), it will be like

- (A) a convergent lens
- (B) a divergent lens
- (C) a rectangular slab
- (D) a prism

Q.9) A convex lens forms a real image of a point object placed on its principal axis. If the upper half of the lens is painted black :

- (A) the image will be shifted backward
- (B) the image will not be shifted
- (C) the intensity of the image will decrease
- (D) both (B) & (C)

Q.10) The minimum distance between an object and its real image formed by a convex lens of focal length f is :

- (A) f
- (B) $2f$
- (C) $3f$
- (D) $4f$

Q.11) Power of accommodation (max. variation in power of eye lens) of a normal eye is about -

- (A) 1D
- (B) 2D
- (C) 3D
- (D) 4D

Q.12) Dispersion of light by a prism is due to the change in -

- (A) frequency of light
- (B) speed of light
- (C) scattering
- (D) none of these

Q.13) Which of the following colour has the least wavelength ?

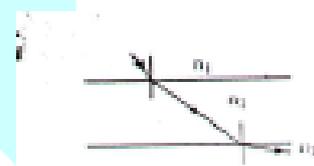
- (A) red
- (B) orange
- (C) violet
- (D) Blue

Q.14) The focal length of human eye lens is -

- (A) 2.5 cm (C) 25 cm
(C) 25m (D) ∞
- Q.15)** A man of height 170 cm wants to see his complete image in a plane mirror (while standing) . His eyes are at a height of 160 cm from the ground .
- (A) Minimum length of the mirror = 80 cm
(B) Minimum length of the mirror = 85 cm
(C) Bottom of the mirror should be at a height 80 cm
(D) Bottom of the mirror should be at a height 85 cm
- Q.16)** If two mirrors are kept at 60° to each other, then the number of images formed by then is
- (A) 5 (B) 6
(C) 7 (D) 8
- Q.17)** The speed of light depends
- (A) On elasticity of the medium only
(B) On inertia of the medium only
(C) On elasticity as well as inertia
(D) Neither on elasticity nor on inertia
- Q.18)** The image formed by a concave mirror
- (A) Is always real
(B) Is always virtual
(C) Is certainly real if the object is virtual
(D) Is certainly virtual if the object is real
- Q.19)** In image formation from spherical mirrors, only paraxial rays are considered because they
- (A) Are easy to handle geometrically
(B) Contain most of the intensity of the incident light
(C) Form nearly a point image of a point source

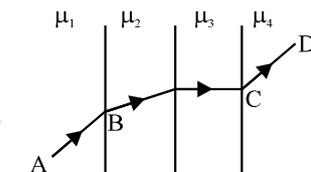
(D) Show minimum dispersion effect

- Q.20)** The figure shows the path of a ray of light as it passes through three different materials with refractive indices n_1 , n_2 and n_3 . The figure is drawn to scale . The refractive indices of the material satisfy relation :



- (A) $n_3 < n_2 < n_1$ (B) $n_3 < n_1 < n_2$
(C) $n_2 < n_1 < n_3$ (D) $n_1 < n_3 < n_2$

- Q.21)** A ray of light passes through four transparent media with refractive indices μ_1 , μ_2 , μ_3 and μ_4 as shown in the figure. The surfaces of all media are parallel. If the emergent ray CD is parallel to the incident ray AB, we must have



- (A) $\mu_1 = \mu_2$ (B) $\mu_2 = \mu_3$
(C) $\mu_3 = \mu_4$ (D) $\mu_4 = \mu_1$

- Q.22)** The critical angle for light going from medium X into medium Y is θ . The speed of light in medium X is v , The speed of light in medium Y is

- (A) $v(1 - \cos \theta)$ (B) $v/\sin \theta$
(C) $v/\cos \theta$ (D) $v \cos \theta$

- Q.23)** A rectangular block of glass is placed on a

mark made on the surface of the table and it is viewed from the vertical position of eye. If refractive index of glass be μ and its thickness d , then the mark will appear to be raised up by

- (A) $\frac{(\mu+1)d}{\mu}$ (B) $\frac{(\mu-1)d}{\mu}$
(C) $\frac{(\mu+1)}{\mu d}$ (D) $\frac{(\mu-1)\mu}{d}$

Q.24) The focal length of a lens is greatest for which colour ?

- (A) violet (B) red
(C) yellow (D) green

Q.25) An object O is kept in front of a converging lens of focal length 30 cm behind which there is a plane mirror at 15 cm from the lens.

- (A) the final image is formed at 60 cm from the lens towards right of it
(B) the final image is at 60 cm from lens towards left of it
(C) the final image is real
(D) the final image is virtual

Q.26) A convex lens of focal length 40 cm is in contact with a concave lens of focal length 25 cm. The power of the combination is :

- (A) -1.5 D (B) -6.5 D
(C) +6.5 D (D) +6.67 D

Q.27) Power in a lens is denoted by

- (A) P (B) D
(C) m^{-1} (D) W

Q.28) The power of a lens having a focal length of 1 cm is

- (A) 1D (B) 10 D
(C) (D) 100 D

Q.29) The far point of a myopic eye is 150 cm. What is the power of lens required to correct the defect of

the eye ?

- (A) - 0.33D (B) - 0.66D
(C) + 0.33D (D) + 0.66D

Q.30) Our eye lens is held in position by

- (A) rods and cones (B) iris and pupil
(C) cellular muscles (D) None of these

Answer Sheet

Q.1	D	Q.11	D	Q.21	B
Q.2	B	Q.12	B	Q.22	B
Q.3	A	Q.13	C	Q.23	B
Q.4	B	Q.14	A	Q.24	B
Q.5	B	Q.15	C	Q.25	C
Q.6	B	Q.16	A	Q.26	A
Q.7	A	Q.17	D	Q.27	C
Q.8	A	Q.18	C	Q.28	D
Q.9	D	Q.19	C	Q.29	B
Q.10	D	Q.20	A	Q.30	B