**1.** Two vertical plane mirrors are inclined at an angle of $60^\circ$ with each other. A ray of light travelling horizontally is reflected first from one mirror and then from the other. The resultant deviation is

(a) $60^\circ$ (b) $120^\circ$

(c) $180^\circ$ (d) $240^\circ$

**2.** A plane mirror reflecting a ray of incident light is rotated through an angle $\theta$ about an axis through the point of incidence in the plane of the mirror perpendicular to the plane of incidence, then

(a) The reflected ray does not rotate

(b) The reflected ray rotates through an angle $\theta$

(c) The reflected ray rotates through an angle $2\theta$

(d) The incident ray is fixed

**3.** A plane mirror is approaching you at a speed of $10 cm/sec$ .you can see your image in it. At what speed will your image approach you

(a) $10 cm/sec$ (b) $5 cm/sec$

(c) $20 cm/sec$ (d) $15 cm/sec$

**4.** A man is $180 cm$ tall and his eyes are $10 cm$ below the top of his head. In order to see his entire height right from toe to head, he uses a plane mirror kept at a distance of $1 m$ from him. The minimum length of the plane mirror required is

(a) $180 cm$ (b) $90 cm$

(c) $85 cm$ (d) $170 cm$

**5.** A person is in a room whose ceiling and two adjacent walls are mirrors. How many images are formed

(a) 5 (b) 6

(c) 7 (d) 8

**6.** The light reflected by a plane mirror may form a real image

(a) If the rays incident on the mirror are diverging

(b) If the rays incident on the mirror are converging

(c) If the object is placed very close to the mirror

(d) Under no circumstances

**7.** Focal length of a plane mirror is

(a) Zero (b) Infinite

(c) Very less (d) Indefinite

**8.** A convex mirror of focal length *f* forms an image which is $\frac{1}{n}$ times the object. The distance of the object from the mirror is

(a) $(n-1)f$ (b) $\left(\frac{n-1}{n}\right)f$

(c) $\left(\frac{n+1}{n}\right)f$ (d) $(n+1)f$

**9.** A diminished virtual image can be formed only in

(a) Plane mirror (b) A concave mirror

(c) A convex mirror (d) Concave-parabolic mirror

**10.** Which of the following could not produce a virtual image

(a) Plane mirror

(b) Convex mirror

(c) Concave mirror

(d) All the above can produce a virtual image

**11.** In a concave mirror experiment, an object is placed at a distance $x_1$ from the focus and the image is formed at a distance $x_2$ from the focus. The focal length of the mirror would be

(a) $x_1x_2$ (b) $\sqrt{x_1x_2}$

(c) $\frac{x_1+x_2}{2}$ (d) $\sqrt{\frac{x_1}{x_2}}$

**12.** A person sees his virtual image by holding a mirror very close to the face. When he moves the mirror away from his face, the image becomes inverted. What type of mirror he is using

(a) Plane mirror (b) Convex mirror

(c) Concave mirror (d) None of these

**13.** The relation between the linear magnification $m$, the object distance $u$ and the focal length $f$ is

(a) $m = \frac{f-u}{f}$ (b) $m = \frac{f}{f-u}$

(c) $m = \frac{f+u}{f}$ (d) $m = \frac{f}{f+u}$

**14.** Which of the following form(s) a virtual and erect image for all positions of the object

(a) Convex lens (b) Concave lens

(c) Convex mirror (d) Concave mirror

**15.** An object $1cm$ tall is placed $4cm$ infront of a mirror. In order to produce an upright image of $3cm$ height one needs a

(a) Convex mirror of radius of curvature $12cm$

(b) Concave mirror of radius of curvature $12cm$

(c) Concave mirror of radius of curvature $4cm$

(d) Plane mirror of height $12cm$

**16.** Match List I with List II and select the correct answer using the codes given below the lists :

| **List I** (Position of the object) | **List II** (Magnification) |
|---|---|
| (I) An object is placed at focus before a convex mirror | (A) Magnification is $-\infty$ |
| (II) An object is placed at centre of curvature before a concave mirror | (B) Magnification is $0.5$ |
| (III) An object is placed at focus before a concave mirror | (C) Magnification is $+1$ |
| (IV) An object is placed at centre of curvature before a convex mirror | (D) Magnification is $-1$ |
| | (E) Magnification is $0.33$ |

Codes :

(a) I-B, II-D, III-A, IV-E (b)I-A, II-D, III-C, IV-B

(c) I-C, II-B, III-A, IV-E (d)I-B, II-E, III-D, IV-C

**17.** An object is placed at $20cm$ from a convex mirror of focal length $10cm$. The image formed by the mirror is

(a) Real and at $20cm$ from the mirror

(b) Virtual and at $20cm$ from the mirror

(c) Virtual and at $20/3cm$ from the mirror

(d) Real and at $20/3cm$ from the mirror

**18.** A point object is placed at a distance of $10cm$ and its real image is formed at a distance of $20cm$ from a concave mirror. If the object is moved by $0.1cm$ towards the mirror, the image will shift by about

(a) $0.4cm$ away from the mirror

(b) $0.4cm$ towards the mirror

(c) $0.8cm$ away from the mirror

(d) $0.8cm$ towards the mirror

**19.** Under which of the following conditions will a convex mirror of focal length $f$ produce an image that is erect, diminished and virtual

(a) Only when $2f > u > f$ (b) Only when $u = f$

(c) Only when $u < f$ (d) Always