AMIT AJMANI'S ACADEMY
D-16/82, SECTOR-7, ROHINI
PH: 9810476588, 9953371470

X PHYSICS CLASS TEST   M.M.-25

Name of Student: _____ **Class & Sub:** _____
Topic of Test: REFLECTION AND REFRACTION OF LIGHT No. 1 Date:_____

1. State the characteristics of the image formed in a plane mirror.   2
2. When a mirror is held close to the face of a person, a diminished image of the face is seen. What type of mirror is this?   1
3. State the laws of reflection.   2
4. Explain the New Cartesian system of sign conventions.   2
5. Magnification produced by a mirror is +2/3. What type of mirror is this?   1
6. Distinguish between a real image and a virtual image.   2
7. What type of mirror is used to see rear traffic over a wide range? Why?   2
8. Which type of mirror is used by the doctors as 'head mirrors' and why?   2
9. What is lateral inversion? Explain by giving a suitable example.   2
10. Differentiate between focus of a concave mirror and that of a convex mirror.   2
11. What kind of mirror can have a focal length of –20 cm?   1
12. Name one type of mirror that always forms virtual images.   1
13. A ray is striking a slab at angle of 50° with it. What will be angle of incidence?   1
14. What are the values of angle of incidence and that of reflection for a normal incidence? Show by ray diagram.   1
15. The magnification of a plane mirror is given by m = +1. What does this signify for m = 1 and the positive sign of m?   1
16. An object is placed at a distance of 10 cm from a plane mirror. If the plane mirror is moved backward by 5 cm, what is the distance between the object and its image? Which property of plane mirror is being used?   2

ANSWERS

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Name of Student: _____ **Class & Sub:** _____

Topic of Test: REFLECTION AND REFRACTION OF LIGHT No. 2 Date:_____

1. An object 3 cm high is placed at a distance of 8cm from a concave mirror which produces a virtual image 4.5 cm high. What is the focal length of the mirror? What is the position of the image: Draw a ray diagram to show the formation of this image.   3
2. Find the position of an object which when placed in front of a concave mirror of focal length 20 cm produces virtual image which is twice the size of the object.   2
3. Calculate magnification of an object of 10 cm placed at a distance of 5 cm from a spherical mirror, if its image is formed at 15 cm from the pole of mirror on same side. 2
4. State the rules for obtaining images formed by a concave mirror.   2
5. An object 1 cm high is placed on axis and 15 cm from a concave mirror of focal length 10 cm. Find the position, nature and magnification and size of the image formed. 3
6. An object of 7 cm is placed at 27 cm in front of a concave mirror of focal length 18 cm. At what distance from the mirror should a screen be placed, to obtain a sharp focussed image? Find the size and the nature of the image.   3
7. An object 5 cm in length is placed at a distance of 20 cm in front of a convex mirror of focal length 15 cm. Find the position of the image, its nature and size.   3
8. An object is placed in front of a concave mirror between the pole and the focus of the mirror. What is the nature of the image?   1
9. A student places an object at a certain distance D from a concave mirror. He stops when he notices that the image is formed directly below the object. Draw a ray diagram to show the formation of image and state its characteristics.   2
10. A concave mirror produces 3 times magnified real image of an object placed at 10 cm in front of it. Where is the image located?   2
11. An object 4.0 cm in size is placed 25.0 cm in front of concave mirror of focal length 15.0 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? Find the nature and the size of the image.   2

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<u>X PHYSICS CLASS TEST</u>   <u>M.M.-20</u>

Name of Student: _____ **Class & Sub:** _____

Topic of Test: REFLECTION AND REFRACTION OF LIGHT No. 3 Date:_____

1. Define: Focal length of a convex lens and Refractive index.   2
2. What is meant by lateral displacement?   1
3. If image formed by a lens is always diminished and erect, what is the nature of lens?
4. Why does a pencil appear bent in water?   2
5. An object 2 cm tall is placed perpendicular to the principal axis of a convex lens of focal length 10 cm. The distance of the object from the lens is 15 cm. Find the nature, position and size of the image. Also find its magnification.   3
6. An object 60 cm from a lens gives a virtual image at 20 cm in front of the lens. Calculate focal length of the lens? Is the lens converging or diverging? Give reason.   3
7. If an object of 7 cm height is placed at a distance of 12 cm from a convex lens of focal length 8 cm, find the position, nature and height of the image.   2
8. A 40 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 20 cm. The distance of the object from the lens is 30 cm. Find the nature, position, and size of the image. Also find its magnification.   3
9. A convex lens of focal length 10 cm is placed at a distance of 12 cm from a wall. How far from lens should an object be placed so as to form its real image on the wall?2
10. Define Snell's Law of Refraction. Name two factors on which the refractive index of medium depends.   2

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X PHYSICS CLASS TEST   M.M.-22

Name of Student: _____ **Class & Sub:** _____
Topic of Test: REFLECTION AND REFRACTION OF LIGHT No. 4 Date:_____

1. Define power of a lens.   1
2. What is the power of a concave lens with focal length of 40 cm?   1
3. Where should an object be placed so that a real and inverted image of same size be obtained by a convex lens?   1
4. A convex lens has a focal length of 30 cm. Calculate at what distance should the object be placed from the lens so that it forms an image of 60 cm on the other side of the lens? Find the magnification produced by the lens in this case.   3
5. A 2.0 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 10 cm. The distance of the object from the lens is 15 cm. Find the nature, position and size of its image. Also find its magnification.   3
6. Name one type of lens that always forms a virtual image.   1
7. A convex lens of focal length 10 cm is placed at distance of 12 cm from a wall. How far from lens should an object be placed to get its real image on the wall?   2
8. A ray of light travelling in air is incident on rectangular glass block & emerges out in air from opposite face. Draw a diagram to show the complete path of this ray of light. 2
9. Two thin lenses of power + 3.5 D and – 2.5 D are placed in contact. Find the power and focal length of this combination.   2
10. An object of height 5 cm is held 25 cm away from a converging lens of focal length 10 cm. Draw ray diagram and find the position, size and the nature of the image formed. 3
11. An object 5 cm high is held 25 cm away from a converging lens of focal length 10 cm. Draw ray diagram and find the position, size and the nature of the image formed. 3

ANSWERS