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Daily Practice Problems

NEET PHYSICS

Topic: Ray Optics

Q.1 On reflection from a plane surface, the following gets changed-
(1) wavelength (2) frequency (3) speed (4) amplitude

Q.2 A wave or a pulse is reflected normally from the surface of a denser medium back into the rarer medium. The phase change caused by the reflection-
(1) 0 (2) /2
(3) (4) 3/2

Q.3 The frequency of incident ray is 3×10^8 Hz. The frequency after reflection-
(1) decrease (2) remain same
(3) increases (4) either 1 or 3

Q.4 If a ray of light is incident on a plane mirror at an angle of incidence of 30º, then deviation produced by mirror is-
(1) 30º (2) 60º
(3) 90º (4) 120º

Q.5 The image of a real object formed by a plane mirror is-
(1) Erect, real and of equal size (2) Erect, virtual and of equal size
(3) Inverted, real and of equal size (4) Inverted, virtual and of equal size

Q.6 Mark the correct options-
(1) If the incident rays are converging, we have a real object.
(2) If the final rays are converging, we have a real image.
(3) The image of a virtual object is called a virtual image.
(4) If the image is virtual, the corresponding object is called a virtual object.

Q.7 A man 160 cm. hingh stands in front of a plane mirror. His eyes are at a height of 150 cm. from the floor. Then the minimum length of the plane mirror for him to see his full length image is-
(1) 85 cm (2) 170 cm
(3) 80 cm (4) 340 cm

Q.8 Which of the following letters do not suffer lateral inversion ?
(1) HGA (2) HOX (3) VET (4) YUL

Q.9 A plane mirror is approaching you at 10 cm per second. You can see your image in it. At what speed will your image approach you ?

(1) 10 cm/s (2) 5 cm/s

(3) 20 cm/s (4) 15 cm/s

Q.10 If an object approaches towards a plane mirror with velocity V, then image approaches the object with velocity-

(1) V (2) 1.5 V

(3) 2 V (4) 3 V

Q.11 A person is standing in front of a plane mirror. If the mirror recedes with velocity v, the relative speed of person and his image per second is-

(1) 0 (2) v

(3) 2 v (4) v/2

Q.12 An object is placed between two plane mirrors set at 60º to each other. The maximum number of images seen will be-

(1) 2 (2) 3 (3) 5 (4) 6

Q.13 A person is in a room whose ceiling and two adjacent walls are mirrors. How many images are formed ?

(1) 5 (2) 6 (3) 7 (4) 8

Q.14 An object is placed symmetrically between the two plane mirrors inclined at an angle of 30º, then the total number of images formed, is-

(1) 12 (2) 2 (3) 11 (4) infinite

Q.15 If an object is placed unsymmetrically between two plane mirrors, inclined at an angle of 72º, then the total number of images formed is-

(1) 5 (2) 4 (3) 2 (4) Infinity

Q.16 Images formed by an object placed between two plane mirrors whose reflecting surfaces make an angle of 90º with one another lie on-

(1) Straight line (2) Zig-zag curve

(3) Circle (4) Ellipse

Q.17 How many images of himself, does an observer see if two adjacent walls of rectangular room are mirror surfaced-

(1) 3 (2) 5 (3) 7 (4) 9

Q.18 A ray gets succesively reflected from two mirrors inclined at an angle of 40º. If the angle of incidence on the first mirror is 20º, then the net deviation of this ray is-

(1) 40º (2) 320º

(3) 80º (4) 100º

Q.19 The focal length of spherical mirror is-

(1) Maximum for red light **(2) Maximum for blue light**

(3) Maximum for white light **(4) Same for all lights**

Q.20 If a spherical mirror is immersed in a liquid, its focal length will-

(1) Increase **(2) Decrease**

(3) Remains unchanged **(4) Depends on the nature of liquid**

Q.21 An object is placed at a distance of 40 cm in front of a concave mirror of focal length 20cm. The image produced is :

(1) virtual and inverted

(2) real and erect

(3) real inverted and diminished

(4) real, inverted and of same size as the object.

Q.22 A short linear object is placed along optic axis of a concave mirror. If distance of nearer end of the object from the mirror is greater than radius of curvature then-

(1) a real and elongated image will be formed.

(2) a virtual and elongated image will be formed.

(3) a real and diminished image will be formed.

(4) a virtual and diminished image will be formed.

Q.23 The focal length of a concave mirror is 20 cm. Determine where an object must be placed to form an image magnified two times when the image is real-

(1) 30 cm from the mirror **(2) 10 cm from the mirror**

(3) 20 cm from the mirror **(4) 15 cm from the mirror**

Q.24 In the above question, if the magnified image is virtual, the distance of the object from the mirror must be-

(1) 30 cm **(2) 10 cm**

(3) 20 cm **(4) 15 cm**

Q.25 Given a point source of light, which of the following can produce a parallel beam of light -

(1) convex mirror

(2) concave mirror

(3) concave lens

(4) two plane mirrors inclined at 90° to each other

Q.26 The image formed by a concave mirror-

(1) is always real **(2) is always virtual**

(3) is certainly real if the object is virtual **(4) is certainly virtual if the object is real.**

Q.27 A short linear object is placed along optic axis of a concave mirror. If the object is in between pole and focus, then-

(1) a virtual image will be formed.

(2) a real diminished image will be formed.

(3) If object is in between pole and focus then a real and elongated image will be formed.

(4) none of these.

Q.28 The image formed by convex mirror of focal length 30 cm is a quarter of the size of the object. Then the distance of the object from the mirror, is-

(1) 30 cm **(2) 90 cm**

(3) 120 cm **(4) 60 cm**

Q.29 The rear-view mirror of a car is-

(1) Plane **(2) Convex**

(3) Concave **(4) None of the above**

Q30 A point source is placed 15 cm away from a convex mirror. A virtual image is formed at a distance of 6 cm. The radius of curvature of the mirror is-

(1) 4.3 cm **(2) 8.6 cm**

(3) 10 cm **(4) 20 cm**

ANSWER KEY

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