

Mantra to get the best outcome......


IIT-JEE/ NEET/ KVPY/ OLYMPIAD

MULTIPLE CHOICE QUESTIONS

1. Focal length of plane mirror is
(A) At infinity
(B) Zero
(C) Negative
(D) None of these
2. Image formed by plane mirror is
(A) Real and erect
(B) Real and inverted
(C) Virtual and erect
(D) Virtual and inverted
3. A concave mirror gives real, inverted and same size image if the object is placed
(A) At F
(B) At infinity
(C) At C
(D) Beyond C
4. The radius of curvature of a mirror is 20 cm the focal length is
(A) 20 cm
(B) 10 cm
(C) 40 cm
(D) 5 cm
5. The angle of reflection is equal to the angle of incidence:
(A) always
(B) sometimes
(C) under special conditions
(D) never
6. The angle between an incident ray and the plane mirror is $30^{\circ}$. The total angle between the incident ray and reflected ray will be:
(A) $30^{\circ}$
(B) $60^{\circ}$
(C) $90^{\circ}$
(D) $120^{\circ}$
7. A ray of light is incident on a plane mirror making an angle of $90^{\circ}$ with the mirror surface. The angle of reflection for this ray of light will be:
(A) $45^{\circ}$
(B) $90^{\circ}$
(C) $0^{\circ}$
(D) $60^{\circ}$
8. The image of an object formed by a plane mirror is:
(A) virtual
(B) real
(C) diminished
(D) upside-down
9. The image formed by a plane mirror is:
(A) virtual, behind the mirror and enlarged.
(B) virtual, behind the mirror and of the same size as the object.
(C) real, at the surface of the mirror and enlarged.
(D) real, behind the mirror and of the same size as the object.
10. The mirror formula is
(A) $\frac{1}{v}-\frac{1}{u}=\frac{1}{f}$
(B) $\frac{1}{v} \times \frac{1}{u}=\frac{1}{f}$
(C) $\frac{1}{v}+\frac{1}{u}=\frac{1}{f}$
(D) $\frac{1}{v} \neq \frac{1}{u} \neq \frac{1}{f}$
11. In a convex spherical mirror, reflection of light takes place at:
(A) a flat surface
(B) a bent-in surface
(C) a bulging-out surface
(D) an uneven surface
12. A diverging mirror is:
(A) a plane mirror
(B) a convex mirror
(C) a concave mirror
(D) a shaving mirror
13. If $R$ is the radius of curvature of a spherical mirror and $f$ is its focal length, then:
(A) $R=f$
(B) $R=2 f$
(C) $R=f / 2$
(D) $R=3 f$
14. The focal length of a spherical mirror of radius of curvature 30 cm is:
(A) 10 cm
(B) 15 cm
(C) 20 cm
(D) 30 cm
15. If the focal length of a spherical mirror is 12.5 less cm , its radius of curvature will be:
(A) 25 cm
(B) 15 cm
(C) 20 cm
(D) 35 cm
16. The other name of potential difference is:
(A) ampereage
(B) wattage
(C) voltage
(D) potential energy
17. Which statements/statements is /are correct?
18. An ammeter is connected in series in a circuit and a voltmeter is connected in parallel.
19. An ammeter has a high resistance.
20. A voltmeter has a low resistance.
(A) 1, 2, 3
(B) 1, 2
(C) 2,3
(D) 1
21. Which unit could be used to measure current?
(A) Watt
(B) Coulomb
(C) Volt
(D) Ampere
22. If the current through a floodlamp is 5 A , what charge passes in 10 seconds?
(A) 0.5 C
(B) 2 C
(C) 5 C
(D) 50 C
23. If the amount of electric charge passing through a conductor in 10 minutes is $300^{\circ} \mathrm{C}$, the current flowing is
(A) 30 A
(B) 0.3 A
(C) 0.5 A
(D) 5 A
24. What happens when a ray of light falls normally (or perpendicularly) on the surface of a plane mirror?
25. A ray of light is incident on a plane mirror at an angle of $30^{\circ}$. What is the angle of reflection?
26. A ray of light strikes a plane mirror at an angle of $40^{\circ}$ to the mirror surface. What will be the angle of reflection?
27. A ray of light is incident normally on a plane mirror. What will be the:
(A) angle of incidence?
(B) angle of reflection?
28. What type of image is formed?
(A) in a plane mirror?
(B) on a cinema screen?
29. Define reflection of light?
30. What is a normal?
31. Explain the term focal length of a mirror.
32. What is the difference between a real image and a virtual image.
33. What is a spherical mirror?

SHORT ANSWER QUESTIONS
31. Name the two types of spherical mirrors. What type of mirror is represented by the:
(A) back side of a shining steel spoon?
(B) front side of a shining steel spoon?
32. What is the relation between the focal length and radius of curvature of a spherical mirror (concave mirror or convex mirror)? Calculate the focal length of a spherical mirror whose radius of curvature is 25 cm .
33. Explain with a suitable diagram, how a concave mirror converges a parallel beam of light rays. Mark clearly the pole, focus and centre of curvature of concave mirror in this diagram.
34. Describe with a suitable diagram, how a convex mirror diverges a parallel beam of light rays. Mark clearly the pole, focus and centre of curvature of convex mirror in this diagram.
35. Compare how an ammeter and a voltmeter are connected in circuit.
36. What do the following symbols mean in circuit diagrams?
(i)

(ii)

37. If 20 C of charge pass a point in a circuit in 1 s , what current is flowing?
38. A current of 4 A flows around a circuit for 10 s . How much charge flows past a point in the circuit in this time?
39. What is the current in a circuit if the charge passing each point is 20 C in 40 s ?
40. Fill in the following blanks with suitable words:
(A) A current is a flow of $\qquad$ For this to happen there must be a
$\qquad$ circuit.
(B) Current is measured in ................. using an ............... placed in
$\qquad$ In a circuit.

## LONG ANSWER QUESTIONS

41. Write any five features of a plane mirror.
42. With a neat labelled diagram of concave and a convex mirror explain the differences between them?
