

Which of the following is a correct statement about concave mirrors?

- A. They always form virtual images
- B. They are used in rear-view mirrors
- C. They can form both real and virtual images
- D. They always form diminished images

Answer: C. They can form both real and virtual images

The SI unit of electric current is:

- A. Volt
- B. Ampere
- C. Ohm
- D. Coulomb

Answer: B. Ampere

What is the resistance of a conductor if a current of 2 A flows through it when a potential difference of 10 V is applied?

- A. $20\ \Omega$
- B. $5\ \Omega$
- C. $0.2\ \Omega$
- D. $12\ \Omega$

Answer: B. $5\ \Omega$ (Using Ohm's Law: $R = V/I = 10/2$)

The image formed by a plane mirror is:

- A. Real and inverted
- B. Virtual and erect
- C. Virtual and inverted
- D. Real and erect

Answer: B. Virtual and erect

The magnetic field inside a long straight current-carrying solenoid is:

- A. Zero
- B. Decreasing
- C. Uniform
- D. Increasing

Answer: C. Uniform

Which of the following energy sources is non-renewable?

- A. Solar energy
- B. Wind energy
- C. Fossil fuels
- D. Tidal energy

Answer: C. Fossil fuels

A ray of light passes from air to glass. What happens to its speed?

- A. Increases
- B. Decreases
- C. Remains same
- D. Becomes infinite

Answer: B. Decreases

Which device converts electrical energy into mechanical energy?

- A. Generator
- B. Motor
- C. Transformer

D. Battery

Answer: B. Motor

The power of a lens is -2D. It means the lens is:

A. Convex and focal length is +50 cm

B. Concave and focal length is -50 cm

C. Convex and focal length is -50 cm

D. Concave and focal length is +50 cm

Answer: B. Concave and focal length is -50 cm

(Formula: $f = 100/P = 100/(-2) = -50$ cm
 $f = 100/P = 100/(-2) = -50$ cm)

Which of the following is not a characteristic of magnetic field lines?

A. They start from North and end at South

B. They form closed curves

C. They intersect each other

D. They are denser near poles

Answer: C. They intersect each other

What is the commercial unit of electrical energy?

A. Watt

B. Joule

C. Kilowatt-hour

D. Newton

Answer: C. Kilowatt-hour

A fuse in an electric circuit is a:

- A. High resistance wire
- B. Insulator
- C. Low melting point wire
- D. Circuit breaker

Answer: C. Low melting point wire

Which of the following is a chemical change?

- A. Melting of ice
- B. Boiling of water
- C. Burning of paper
- D. Breaking of glass

Answer: C. Burning of paper

Which gas is evolved when hydrochloric acid reacts with zinc?

- A. Oxygen
- B. Nitrogen
- C. Hydrogen
- D. Carbon dioxide

Answer: C. Hydrogen

Which of the following is a compound?

- A. Air
- B. Soil
- C. Water
- D. Milk

Answer: C. Water

The chemical formula of quicklime is:

- A. Ca(OH)_2
- B. CaCO_3
- C. CaO
- D. CaCl_2

Answer: C. CaO

pH value of neutral solution is:

- A. 0
- B. 7
- C. 14
- D. 10

Answer: B. 7

Which of the following is used in the preparation of soap?

- A. Hydrochloric acid
- B. Sodium hydroxide
- C. Nitric acid
- D. Sulfuric acid

Answer: B. Sodium hydroxide

What type of reaction is: $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}^{}$**

- A. Combination reaction
- B. Decomposition reaction
- C. Displacement reaction
- D. Double displacement reaction

Answer: C. Displacement reaction

Which of the following is an indicator?

- A. Sodium chloride
- B. Litmus
- C. Water
- D. Sugar

Answer: B. Litmus

Which of the following acids is found in lemon?

- A. Acetic acid
- B. Citric acid
- C. Hydrochloric acid
- D. Lactic acid

Answer: B. Citric acid

Which metal is the best conductor of electricity?

- A. Copper
- B. Aluminium
- C. Gold
- D. Silver

Answer: D. Silver

What is the chemical name of baking soda?

- A. Sodium carbonate
- B. Sodium bicarbonate
- C. Calcium carbonate
- D. Potassium nitrate

Answer: B. Sodium bicarbonate

Which of the following is a noble gas?

- A. Oxygen
- B. Nitrogen
- C. Argon
- D. Hydrogen

Answer: C. Argon

What is the value of $(2^3 \times 3^2)$?

- A) 36
- B) 72
- C) 18
- D) 12

Answer: B) 72

The cube root of 125 is:

- A) 25
- B) 5
- C) 10
- D) 15

Answer: B) 5

Which of the following is a rational number?

- A) $\sqrt{2}$
- B) $\frac{22}{7}$
- C) π
- D) $\sqrt{3}$

Answer: B) $\frac{22}{7}$

If the perimeter of a square is 48 cm, what is the length of one side?

- A) 12 cm
- B) 6 cm
- C) 8 cm
- D) 10 cm

Answer: A) 12 cm

The additive inverse of -7 is:

- A) -7
- B) 0
- C) 7
- D) 1

Answer: C) 7

What is the HCF of 36 and 60?

- A) 6
- B) 12
- C) 18
- D) 24

Answer: B) 12

A polygon with 8 sides is called:

- A) Pentagon
- B) Hexagon
- C) Octagon
- D) Nonagon

Answer: C) Octagon

If $5x - 3 = 2$, then the value of x is:

- A) 1
- B) 0
- C) 2
- D) 3

Answer: D) 1

Which of the following numbers is a perfect square?

- A) 20
- B) 30
- C) 49
- D) 60

Answer: C) 49

The value of $1/2 + 1/3$ is:

- A) $5/6$
- B) $2/5$
- C) $1/6$
- D) $3/5$

Answer: A) $5/6$

The area of a rectangle with length 10 cm and breadth 4 cm is:

- A) 14 cm^2
- B) 40 cm^2
- C) 20 cm^2
- D) 24 cm^2

Answer: B) 40 cm^2

The product of the additive inverse and multiplicative inverse of 2 is:

- A) -1
- B) 1
- C) -2
- D) 0

Answer: A) -1

