

Quiz: Physics set 25

Q1193: A body moves with constant acceleration. If its velocity becomes double in time t, the initial velocity was:

- A) Zero
- B) Equal to final velocity
- C) Half of final velocity
- D) One-third of final velocity

Q1194: A projectile is thrown with speed u at angle theta. The horizontal range is proportional to:

- A) $\sin 2\theta$
- B) $\sin \theta$
- C) $\cos \theta$
- D) $\tan \theta$

Q1195: If two bodies have same kinetic energy, their momenta are proportional to:

- A) \sqrt{m}
- B) Mass
- C) $1/m$
- D) Same

Q1196: A block is pulled on a rough surface at constant speed. The net force on the block is:

- A) Zero
- B) Equal to friction
- C) Maximum
- D) Minimum

Q1197: The work done by friction over a closed path is:

- A) Negative
- B) Zero
- C) Positive
- D) Maximum

Q1198: The orbital velocity of a satellite near Earth surface is about:

- A) 7.9 km/s
- B) 11.2 km/s
- C) 5 km/s
- D) 15 km/s

Q1199: Terminal velocity of a body falling through a viscous fluid is attained when:

- A) Net force becomes zero
- B) Acceleration is maximum
- C) Velocity is zero
- D) Mass becomes zero

Q1200: The dimensional formula of coefficient of viscosity is:

- A) $ML^{-1}T^{-1}$
- B) $ML^{-1}T^{-2}$
- C) MT^{-1}
- D) M^0LT^{-1}

Q1201: In an isothermal process for ideal gas, the internal energy:

- A) Remains constant
- B) Increases
- C) Decreases
- D) Becomes zero

Q1202: The restoring force in SHM is maximum at:

- A) Extreme position
- B) Mean position
- C) Half amplitude
- D) Any position

Q1203: The speed of sound in a gas is independent of:

- A) Pressure at constant temperature
- B) Temperature
- C) Density
- D) Humidity

Q1204: The electric field inside a conductor in electrostatic equilibrium is:

- A) Zero
- B) Maximum
- C) Uniform
- D) Infinite

Q1205: The SI unit of electric potential energy is:

- A) Joule
- B) Volt
- C) Coulomb
- D) Newton

Q1206: The capacitance of a parallel plate capacitor increases if:

- A) Dielectric is inserted
- B) Plate separation increases
- C) Area decreases
- D) Charge decreases

Q1207: Drift velocity of electrons in a conductor is of the order of:

- A) 10^{-4} m/s
- B) 10^2 m/s
- C) 10^5 m/s
- D) 10^8 m/s

Q1208: Two parallel current carrying conductors attract each other when currents are:

- A) In same direction
- B) In opposite direction
- C) Zero
- D) Alternating

Q1209: Lenz's law is a consequence of conservation of:

- A) Energy
- B) Charge
- C) Momentum
- D) Mass

Q1210: The average power consumed in an AC circuit is maximum when circuit is:

- A) Purely resistive
- B) Purely inductive
- C) Purely capacitive
- D) LC circuit

Q1211: The image formed by a plane mirror is:

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

Q1212: A convex lens has focal length f. Its power is:

- A) $1/f$
- B) f
- C) f^2
- D) $1/f^2$

Q1213: The fringe width in Young's double slit experiment is inversely proportional to:

- A) Slit separation
- B) Wavelength
- C) Screen distance
- D) Intensity

Q1214: In photoelectric effect, maximum kinetic energy of electrons depends on:

- A) Frequency of incident light
- B) Intensity
- C) Exposure time
- D) Area of metal

Q1215: The de Broglie wavelength of a particle decreases when its:

- A) Momentum increases
- B) Velocity decreases
- C) Energy decreases
- D) Mass decreases

Q1216: The binding energy per nucleon is highest for:

- A) Iron
- B) Uranium
- C) Hydrogen
- D) Helium

Q1217: The SI unit of radioactive activity is:

- A) Becquerel
- B) Gray
- C) Sievert
- D) Curie

Q1218: The conductivity of a semiconductor increases with increase in:

- A) Temperature
- B) Pressure
- C) Volume
- D) Length

Q1219: Majority charge carriers in n-type semiconductor are:

- A) Electrons
- B) Holes
- C) Protons
- D) Ions

Q1220: The logic gate whose output is 0 only when all inputs are 1 is:

- A) NAND
- B) AND
- C) OR
- D) NOR

Q1221: Escape velocity from Earth depends on:

- A) Mass and radius of Earth
- B) Mass of object
- C) Atmosphere
- D) Temperature

Q1222: The SI unit of electric field intensity is:

- A) N/C
- B) V
- C) J/C
- D) C/N

Q1223: The blue colour of sky is due to:

- A) Rayleigh scattering
- B) Refraction
- C) Diffraction
- D) Reflection

Q1224: The energy of a photon is inversely proportional to its:

- A) Wavelength
- B) Frequency
- C) Amplitude
- D) Speed

Q1225: The Fermi level in intrinsic semiconductor lies:

- A) At mid-gap
- B) Near conduction band
- C) Near valence band
- D) Outside bands

Q1226: The SI unit of resistance is:

- A) Ohm
- B) Volt
- C) Ampere
- D) Farad

Q1227: The electric potential energy of a charge q at potential V is:

- A) qV
- B) V/q
- C) q/V
- D) V^2

Q1228: The average kinetic energy of gas molecules depends only on:

- A) Temperature
- B) Pressure
- C) Volume
- D) Mass

Q1229: Moment of inertia of a body depends on:

- A) Axis of rotation
- B) Angular velocity
- C) Torque
- D) Time

Q1230: The power factor of a purely inductive AC circuit is:

- A) Zero
- B) One
- C) 0.5
- D) Depends on frequency

Q1231: The SI unit of magnetic moment is:

- A) $\text{A}\cdot\text{m}^2$
- B) Tesla
- C) Weber
- D) $\text{N}\cdot\text{m}$

Q1232: The center of mass of an isolated system remains at rest if:

- A) Initial momentum is zero
- B) Energy is zero
- C) Force is zero
- D) Velocity is zero