Quiz: Physics set 2

Q51: A car starts from rest and accelerates uniformly at 2 m/s2. The distance covered in 5 s is:

A) 25 m
B) 20 m
C) 12.5 m
D) 50 m

Q52: A particle moves in a circle of radius 2 m with speed 4 m/s. The centripetal acceleration is:

A) 2 m/s2
B) 4 m/s2
C) 8 m/s2
D) 16 m/s2

Q53: Two forces of 5 N each act at an angle of 60 deg between them. The resultant force is:

A) 5 N
B) 10 N
C) 8.66 N
D) 7.5 N

Q54: A block of mass 4 kg slides on a smooth surface with speed 5 m/s. Its kinetic energy is:

A) 25 J
B) 50 J
C) 62.5 J
D) 100 J

Q55: A body of mass 2 kg is lifted vertically through 5 m. The work done against gravity (g = 10 m/s2) is:

A) 50 J
B) 100 J
C) 150 J
D) 200 J

Q56: The angular acceleration of a body rotating with angular velocity omega = 4t2 rad/s is:

A) 8t rad/s2
B) 4t rad/s2
C) 8 rad/s2
D) 2t rad/s2

Q57: The orbital velocity of a satellite close to Earth is proportional to:

A) sqrt(gR)
B) gR
C) sqrt(g/R)
D) 1/R

Q58: The bulk modulus has the same dimensions as:

A) Pressure
B) Force
C) Energy
D) Density

Q59: The RMS speed of gas molecules is proportional to:

A) sqrtT
B) T
C) 1/sqrtT
D) 1/T

Q60: In an adiabatic process for ideal gas, which remains constant?

A) TV^(gamma-1)
B) PV
C) T/P
D) V/T

Q61: The potential energy of a spring compressed by x is:

A) (1/2)kx2
B) kx
C) kx2
D) 2kx2

Q62: A simple pendulum has time period 2 s. Its frequency is:

A) 0.5 Hz
B) 1 Hz
C) 2 Hz
D) 4 Hz

Q63: The speed of transverse waves on a string depends on:

A) Tension
B) Mass of string
C) Amplitude
D) Frequency

Q64: Electric potential at a distance r from a point charge q is:

A) kq/r
B) kq/r2
C) qr
D) q/r3

Q65: If the electric field is zero, the electric potential is:

A) Constant
B) Zero
C) Infinite
D) Negative

Q66: Capacitance of an isolated spherical conductor of radius R is:

A) 4piepsilon0R
B) epsilon0R
C) R/epsilon0
D) 4piR

Q67: Current through a conductor is doubled. Drift velocity becomes:

A) Doubled
B) Halved
C) Four times
D) Unchanged

Q68: The resistivity of a conductor depends on:

A) Material
B) Length
C) Area
D) Shape

Q69: Magnetic field at the center of a long straight current-carrying conductor is:

A) mu0I/2pir
B) mu0Ir/2pi
C) mu0I/r2
D) mu0I

Q70: Force between two parallel current-carrying conductors is:

A) Attractive if currents are same
B) Always repulsive
C) Zero
D) Independent of current

Q71: Self-inductance of a coil depends on:

A) Number of turns
B) Current
C) Voltage
D) Resistance

Q72: Inductive reactance in AC circuit is:

A) omegaL
B) 1/omegaC
C) R
D) omegaC

Q73: In AC circuit, RMS value of current is:

A) I0/sqrt2
B) I0
C) sqrt2 I0
D) I0/2

Q74: Power dissipated in pure capacitor connected to AC source is:

A) Zero
B) Maximum
C) Minimum
D) Infinite

Q75: The image formed by convex lens for object beyond 2F is:

A) Real, inverted, diminished
B) Virtual
C) Erect
D) Magnified

Q76: Refractive index of medium is defined as:

A) c/v
B) v/c
C) sin i/sin r
D) Both A and C

Q77: The condition for constructive interference is:

A) Path difference = nlambda
B) nlambda/2
C) lambda/4
D) Zero always

Q78: Stopping potential in photoelectric effect depends on:

A) Frequency of light
B) Intensity
C) Time
D) Area

Q79: The minimum energy required to emit photoelectron is:

A) Work function
B) Threshold frequency
C) Photon energy
D) Kinetic energy

Q80: De Broglie wavelength of electron accelerated through V volts is proportional to:

A) 1/sqrtV
B) sqrtV
C) V
D) 1/V

Q81: Radioactive decay follows:

A) Exponential law
B) Linear law
C) Quadratic law
D) Logarithmic law

Q82: Binding energy per nucleon is maximum for:

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

Q83: Energy of a photon is given by:

A) hnu
B) hc
C) h/lambda
D) Both A and C

Q84: Intrinsic semiconductor at room temperature behaves as:

A) Insulator
B) Conductor
C) Semiconductor
D) Superconductor

Q85: p-n junction diode allows current in:

A) One direction
B) Both directions
C) No direction
D) Alternating direction

Q86: Rectifier converts:

A) AC to DC
B) DC to AC
C) AC to AC
D) DC to DC

Q87: The unit of Young’s modulus is:

A) N/m2
B) N
C) J
D) kg

Q88: If torque acting on a body is zero, angular momentum is:

A) Constant
B) Zero
C) Increasing
D) Decreasing

Q89: The dimensional formula of gravitational constant G is:

A) M-1L3T-2
B) ML3T-2
C) M-2L3T-2
D) MLT-2

Q90: Time period of satellite near Earth is independent of:

A) Mass of satellite
B) Radius of orbit
C) g
D) Earth radius

Q91: The efficiency of an engine can never be:

A) 100%
B) 50%
C) 60%
D) 70%

Q92: Sound waves are:

A) Longitudinal
B) Transverse
C) Electromagnetic
D) Polarized

Q93: The unit of frequency is:

A) Hz
B) rad/s
C) s
D) m/s

Q94: The phenomenon responsible for bending of light is:

A) Refraction
B) Reflection
C) Diffraction
D) Interference

Q95: Momentum has the same dimensions as:

A) Impulse
B) Force
C) Energy
D) Power

Q96: If wavelength of radiation decreases, its energy:

A) Increases
B) Decreases
C) Remains same
D) Becomes zero

Q97: The speed of light in a medium depends on:

A) Refractive index
B) Frequency
C) Amplitude
D) Intensity

Q98: Ohm’s law is valid when:

A) Temperature is constant
B) Voltage is high
C) Resistance is zero
D) Current is zero

Q99: The SI unit of electric charge is:

A) Coulomb
B) Ampere
C) Volt
D) Ohm

Q100: In a vacuum, all electromagnetic waves travel with:

A) Same speed
B) Different speeds
C) Zero speed
D) Infinite speed