Physics General Science Test Hard Mode

Sr	Questions	Answers Choice
1	A monochromatic source of light is placed at a large distance d from a metal surface Photoelectrons are ejected at rate n,kinetic energy being E. If the source is brought nearer to distance d/2, the rate and kinetic energy per photoelectron become nearly	A. 2n and 2E B. 4n and 4e C. 4n and E D. N and 4E
2	If the amplitude of sound is doubled and the frequency reduced to one-fourth the intensity of sound at the same point will be	A. Increasing by a factor of 2 B. Decreasing by a factor of 2 C. Decreasing by a factor of 4 D. Unchanged
3	The fundamental unit which has same power in the dimensional formula of surface tension and viscosity is:	A. Mass B. Length C. Time D. None
4	Two points charges A and B separated by a distance R attract each other with a force of 12 x 10^{-3} N. The force between A and B when the charges on them are doubled and distance is halved	A. 1.92 N B. 19.2 N C. 12 N D. 0.192 N
5	What will be the ratio of the distance moved by a freely falling body from rest in 4^{th} and 5^{th} seconds of journey?	A. 4 : 5 B. 7 : 9 C. 16 : 25 D. 1 : 1
6	At 0° K which of the following properties of a gas will be zero?	A. Kinetic energy B. Potential energy C. Vibrational enegy D. Density
7	Huygen's wave theory of light cannot explain	A. Diffraction B. Interference C. Polarization D. Photoelectric effect
8	Two forces are acting together on an object. The magnitude of their resultant is minimum when the angle between the force is.	A. 0° B. 60° C. 120° D. 180°
9	A piece of fuse wire melts when a current of 15 ampere flows through it.With this current, if it dissipates 22.5 W. the resistance of fuse wire will be	A. Zero B. 10 Ω C. 1 Ω D. 0.10 Ω
10	A photoelectric cell converts	A. Electrical energy to light energy B. Light energy to light energy C. Light energy to electrical energy D. Light energy to elastic energy
11	Center of mass is a point	A. Which is geometric center of a body B. From which distance of particles are same C. Where the whole mass of the body is supposed to be centered D. Which is the origin of reference frame
12	The velocity v of a particle at time t is given by: v = at + b / t + c The dimensional formula of a,b and c care respectively:	A. L² ; T and LT² B. LT² ; LT and L C. LT⁻²; L and T D. L;LT and T⁻²
13	Which of the following is a scalar quantity	A. Density B. Displacement C. Torque D. Weight

14	According to the Hooke's law the force required to change the length of a wire by '1' is proportional to	A. 1⁻² B. 1⁻¹ C. 1 D. 1²
15	The de broglie wave corresponding to a particle of mass m and velocity v has a wavelength associated with it	A. h/mv B. hm v C. mh/v D. m/hv
16	At constant volume temperature is increased then	A. Collision on walls will be less B. Number of collisions per unit time will increase C. Collisions will be in straight lines D. Collisions will not change
17	When a Na ion and a Cl ion are placed in air a force F acts between them when they are separated by a distance of 1 cm from each other the permittivity of air and the dielectric constant of water are ε_0 and K respectively When a piece of salt is placed in water then the force between Na^+ and Cl^- ions separated by a distance of 1 cm will be	A. F B. FK/ε₀ C. F/Kε₀ D. F/K
18	Two electric bulbs of 200 W and 100 W have same voltage.If R1 and R2 be their resistance respectively then	A. R₁ = 2R₂ B. R₂ = 2R₁ C. R₂ = 4R₁ D. R₁ = 4R₂
19	A photocell with a constant p.d of V volt across it illuminated by a point source from a distance of 25 cm. When the source is moved to a distance of 1 m, the electrons emitted by the photocell	A. Carry 1/4th their previous energy B. Are 1/6th as numerous as before C. Are 1/4th as numerous as before D. Carry 1/4th their previous momentum
20	How much water a pump of 2kW can raise in one minute to a height of 10 m. take g = 10 m/s^2?	A. 1000 liters B. 1200 liters C. 100 liters D. 2000 liters