NAT I Engineering Physics

Sr	Questions	Answers Choice
1	Absolute temperature can be calculated by	A. Mean square velocity B. Motion of the molecule C. Both (A) and (B) D. None of these
2	According to Stoke's law drag force depends on	A. Initial velocity B. Final velocity C. Terminal velocity D. Instantaneous velocity
3	Two bodies with masses M_A and M_B are moving with equal kinetic energy. Their linear moments are numerically in a ratio $\|P_A\| : \|P_B\|$ will be:	A. $M_B : M_A$ B. $M_A : M_B$ C. $\sqrt{M_A} : \sqrt{M_B}$ D. $M_A^2 : M_B^2$
4	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
5	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. L^2 ; T and LT^2 B. LT^2 ; LT and L C. LT^{-2}; L and T D. L;LT and T^{-2}
6	Which of the modulus of elasticity is involved in compressing a rod to decrease its length?	A. Young's modulus B. Bulk modulus C. Modulus of rigidity D. None of the above
7	The mass defect for the nucleus of helium is 0.0303 a.m.u What is the binding energy per nucleon for helium in MeV?	A. 28 B. 7 C. 4 D. 1
8	Boyle's law is applicable in	A. Isochoric process B. Isothermal process C. Isobaric process D. Isotonic process
9	A person standing on a rotating platform has his hands lowered He suddenly outstretches his arms. The angular momentum	A. Becomes zero B. Increases C. Decreases D. Remains the same

10	A train of 150 m length is going towards north direction at a speed of 10 ms^{-1} A parrot flies at a speed of 5 ms^{-1} towards south direction parallel to the railway track,The time taken by the parrot to cross the train is equal to	A. 12 s B. 8 s C. 15 s D. 10 s
11	Velocity of sound in a diatomic as is 300 m/sec what is its rms velocity	A. 400 m/sec B. 40 m/sec C. 430 m/sec D. 300 m/sec
12	When n-type of semiconductor is heated	A. Number of electrons increases while that of holes decreases B. Number of holes increases while that of electrons decreases C. Number of electrons and holes remains same D. Number of electrons and holes increases equally
13	Two masses of 1 g and 4 g are moving with equal kinetic energies The ratio of the magnitudes of their linear moments is:	A. 4 : 1 B. √2 : 1 C. 1 : 2 D. 1 : 16
14	With the increase of temperature viscosity	A. Increase B. Decrease C. Remains same D. Doubles
15	A 2 kg body and a 3 kg body have equal momentum if the kinetic energy of 3 kg body is 10 j, the KE of 2 kg body will be	A. 6.66 j B. 15 j C. 22.5 j D. 45 j
16	What will be the ratio of the distance moved by a freely falling body from rest in 4th and 5th seconds of journey?	A. 4 : 5 B. 7 : 9 C. 16 : 25 D. 1 : 1
17	Which one of the following phenomena is not explained by Huygen's construction of wavefront?	A. Refraction B. Reflection C. Diffraction D. Origin of spectra
18	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
19	An ideal choke (used along with fluorescent tube) would be	A. A pure resistor B. A pure capacitor C. A pure inductor D. A combination of an inductor and a capacitor
20	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum