NAT I Medical Physics

Sr	Questions	Answers Choice
1	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
2	In a simple harmonic motion the kinetic energy (KE) and the potential energy (PE), are such that throughout the motion	A. KE remains constant B. PE remains constant C. KE/PE is constant D. KE + PE remains constant
3	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
4	A couple produces	A. Purely linear motion B. Purely rotational motion C. Linear and rotational motion D. No motion
5	Which one of the following is a simple harmonic motion?	A. Wave moving through a string fixed at both ends. B. Earth spinning about its own axis C. Ball bouncing between two rigid vertical walls D. Particle moving in a circle with uniform speed.
6	Relation between pressure (P) and energy (E) of a gas is	A. P = 2/3 E B. P = 1/3 E C. P = 3/2 E D. P = 3 E
7	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
8	A particle moving in a magnetic field has increase in its velocity then its radius of the circle	A. Decreases B. Increases C. Remains the same D. Becomes half
9	Which of the following sources give discrete emission spectrum?	A. Incandescent electric bulb B. Sun C. Mercury vapour lamp D. Candle
10	The nuclear model of atom was proposed by	A. J.J Thomson B. E.Rutherford C. Neil Bohr D. Summerfield
11	A conducting wire is drawn to double its length Final resistivity of the material will be	A. Double of the original one B. Half of the original one C. One-fourth of the original one D. Same as original one
12	For production of beats the two sources must have	A. Different frequencies and same amplitude B. Different frequencies C. Different frequencies same amplitude and same phase

		D. Different frequencies and same phase.
13	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
14	Which of the following lists of physical quantities consists only of vectors:	A. Time,temperature,velocity B. Force,volume,momentum C. Velocity,acceleration,mass D. Force,acceleration,velocity
15	What is the ratio of r.m.s velocity for O_2 to H_2?	A. 1/4 B. 4 C. √4 : 1 D. 1 : √4
16	The contrast in the fringes in any interference pattern depends on	A. Fringe width B. Intensity ratio of the sources C. Distance between the slits D. Wavelength
17	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
18	The dimensional formula for the modulus of elasticity is same as that for.	A. Stress B. Strain C. Velocity D. Surface tension
19	A 50-volt battery is connected across 10-ohm resistor.The current is 4.5 A.The internal resistance of the battery is	A. Zero B. 0.5 Ω C. 1.1 Ω D. 5.0 Ω
20	Surface tension of water is due to	A. Inter molecular attraction B. Intermolecular spaces C. Inter molecular repulsion D. None of above