NAT I Medical Physics

Sr	Questions	Answers Choice
1	The minimum wavelength of the X-rays produced by electrons accelerated through a potential difference of V volts is directly proportional to	A. √V B. V² C. 1/√V D. 1/V
2	In an ac circuit with voltage V and current 1 the power dissipated is	A. VI B. 1/2 VI C. 1/√2 VI D. Depends on the phase between V and 1
3	Mechanical waves on the surface of a liquid are	A. Transverse B. Longitudinal C. Torsional D. Both transverse and longitudinal
4	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.
5	A body is dropped from a tower with zero velocity reaches ground in 4s. The height of the tower is about	A. 80 m B. 20 m C. 160 m D. 40 m
6	With the propagation of a longitudinal wave through a material medium the quantities transmitted in the propagation direction are	A. Energy momentum and mass B. Energy C. Energy and mass D. Energy and linear momentum
7	Two forces of 10N and 15N are acting simultaneously on an object in the same direction. Their resultant is	A. Zero B. 5N C. 25N D. 150N
8	Two bodies of masses m_1 and m_2 have equal momentum their kinetic energies E_1 and E_2 are in the ratio	A. √m₁ : √m₂ B. m₁: m₂ C. m₂: m₁ D. m₁² : m₂²
9	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
10	The henry is the unit for	A. Resistance B. Magnetic flux C. Magnetic field D. Inductance
11	The acceleration 'a' in m/s^2 of a particle is given by $a = 3t^2 + 2t + 2$,where 't' is the time if the particle starts out with a velocity v = 2 m/s at t = 0, then the velocity at the end of 2 second is	A. 12 m/s B. 24 m/s C. 18 m/s D. 36 m/s

12	The magnetic moment of a circular coil carrying current is	A. Directly proportional to the length of the wire in the coil B. Inversely proportional to the length of the wire in the coil C. Directly proportional to the square of the length of the wire in the coil D. Inversely proportional to the square of the length of the wire in the coil
13	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
14	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
15	The velocity of falling raindrops attains limited value because of	A. Up thrust of air B. Vlscous force exerted by air C. Surface tension effect D. Air currents atmosphere
16	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
17	A (100 W, 200 V) bulb is connected to a 160 V power supply. The power consumption would be	A. 64 W B. 80 W C. 100 W D. 125 W
18	If in a moving coil galvanometer a current 1 produces a deflection θ then	A. i ∞ tan θ B. i ∞ θ² C. i ∞ θ D. i ∞ √θ
19	Light appears to travel in straight lines since	A. It is not absorbed by the atmosphere B. It is reflected by the atmosphere C. Its wavelength is very small D. Its velocity is very large
20	Electrons in the atom are held in the atom due to	A. Coulomb forces B. Nuclear forces C. Gravitational forces D. Van der Waal's forces