

NAT I Medical Physics

Sr	Questions	Answers Choice
1	Huygen's wave theory of light cannot explain	A. Diffraction B. Interference C. Polarization D. Photoelectric effect
2	In an AC circuit a resistance of R ohm i connected in series with an inductance L if phase angle between voltage and current be 45° the value of inductive reactance will be	A. R/4 B. R/2 C. R
3	A body moving in circular motion with constant speed has	A. Constant velocity B. Constant acceleration C. Constant kinetic energy D. Constant displacement
4	When a hydrogen atom is bombarded the atom is excited to the $n = 4$ state of hydrogen atom. The energy released when the atom falls from $n = 4$ state to the ground state is	A. 1.275 eV B. 12.75 eV C. 5 eV D. 8 eV
5	The structure of solids is investigated by using	A. Cosmic Rays B. X-rays C. Intra red Radiation D. y-rays
6	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
7	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
8	When boron is added as an impurity to silicon the resulting material is	A. n type conductor B. n type semiconductor C. p-type conductor D. p-type semiconductor
9	The product of the pressure and volume of an ideal gas is	A. A constant B. Approximately equal to the universal gas constant C. Directly Proportional to its temperature D. Inversely proportional to its temperature
10	The excess (equal in number) of electrons that must be placed on each of two small spheres spaced 3 cm apart. with force of repulsion between the spheres to be 10^{-19} N is	A. 25 B. 225 C. 625 D. 1250
11	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. $\sqrt{m_1}$: $\sqrt{m_2}$ B. $\frac{1}{m_1}$ 14.4444465637207px;">m ₁: m ₂ C. $\frac{1}{m_1^2}$ 14.4444465637207px;">m ₂: m ₁ D. $\frac{1}{m_1^2}$ 14.4444465637207px;">m ₁ ² : m ₂²

12	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
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. $F/K\epsilon$ C. $F/K\epsilon$ D. F/K
14	The temperature at which the speed of sound becomes double as was at 27°C is	A. 273°C B. 0°C C. 927°C D. 1027°C
15	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. $\frac{M_B}{M_A}$ B. $\frac{M_A}{M_B}$ C. $\sqrt{\frac{M_A}{M_B}}$ D. $\frac{M_A}{M_B} > 2$
16	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 $v = 2 \text{ m/s}$ 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
17	In which case dose the potential energy decreases?	A. On compressing a spring B. On stretching s spring C. One moving a body against gravitational force D. One the rising of an air bubble in water
18	A particle moves along a circular path under the action of a force. The work done by the force is	A. Zero B. Positive and non-zero C. Negative and non zero D. None of above
19	To get a resultant displacement of 10 m, two displacement vectors of magnitude 6 m and 8 m should be combined	A. Parallel B. Antiparallel C. At angle 60° D. Perpendicular to each other
20	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