

NAT I Medical Physics

Sr	Questions	Answers Choice
1	If a diamagnetic substance is brought near north or south pole of a bar magnet it is	A. Attracted by the poles B. Repelled by the poles C. Repelled by north pole and attracted by the south pole D. Attracted by the north pole and repelled by the south pole
2	The modulus of rigidity of a liquid is	A. Zero B. 1 C. Infinity D. A value not one of those mentioned above
3	A body moves a distance of 10 m along a straight line under the action of a force of 5 Newtons, if the work done is 25 joules the angle which the force takes with the direction of motion of the body is:	A. 0° B. 30° C. 60° D. 90°
4	Absolute temperature can be calculated by	A. Mean square velocity B. Motion of the molecule C. Both (A) and (B) D. None of these
5	The sieman is the SI unit of	A. Resistance B. Specific Resistance C. Conductance D. Inductance
6	In LCR series AC circuit the phase angle between current and voltage is	A. Any angle between 0 and $\pi/2$ B. $\pi/2$ C. π D. Any angle between 0 and $\pi/2$
7	Two points charges A and B separated by a distance R attract each other with a force of 12×10^{-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
8	In which case application of angular velocity is useful?	A. When a body is rotating B. When velocity of body is in a straight line C. When velocity is in a straight line D. None of these
9	Velocity of sound in a diatomic gas 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
10	A couple produces	A. Purely linear motion B. Purely rotational motion C. Linear and rotational motion D. No motion
11	As the electron in Bohr orbit of hydrogen atom passes from state $n = 2$ to $n = 1$ the kinetic energy K and potential energy U change as	A. K two-fold, U also two-fold B. K four-fold, U also four-fold C. K four-fold, U two-fold
12	Which of the following is the only vector quantity	A. Temperature B. Energy C. Power D. Momentum
13	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
14	Shunt required in an ammeter of resistance R to decrease its deflection from 30 ampere to 10 ampere is	A. R/4 B. R/3 C. R/2 D. R

15	With the propagation of a longitudinal wave through a material medium the quantities transmitted in the propagation direction are	<ul style="list-style-type: none"> A. Energy momentum and mass B. Energy C. Energy and mass D. Energy and linear momentum
16	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	<ul style="list-style-type: none"> A. 25 B. 225 C. 625 D. 1250
17	What is the ratio of r.m.s velocity for O_2 to H_2 ?	<ul style="list-style-type: none"> A. $1/4$ B. 4 C. $\sqrt{4} : 1$ D. $1 : \sqrt{4}$
18	Two sources of sound are said to be coherent if	<ul style="list-style-type: none"> A. They produce sounds of equal intensity B. They produce sounds of equal frequency C. They produce sound waves vibrating with the same phase D. They produce sound waves with zero or constant phase difference all instant of time
19	Ball pen function on the principle of	<ul style="list-style-type: none"> A. Viscosity B. Boyle's law C. Gravitational force D. Surface tension
20	What is the average energy of N molecules of monoatomic gas?	<ul style="list-style-type: none"> A. $1/2 NkT$ B. NkT C. $3/2 NkT$ D. $5/2 NkT$