

NAT I Medical Physics

Sr	Questions	Answers Choice
1	Two sources of sound are said to be coherent if	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
2	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. V ² C. 1/√V D. 1/V
3	A force of 10N is acting along y-axis its component along x-axis is	A. 10N B. 20N C. 100N D. Zero N
4	A piece of fuse wire melts when a current of 15 ampere flows through it. With this current, if it dissipates 22.5 W. the resistance of fuse wire will be	A. Zero B. $10\ \Omega$ C. $1\ \Omega$ D. $0.10\ \Omega$
5	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
6	At a certain instant a stationary transverse wave is found to have maximum kinetic energy the appearance of string of that instant is:	A. Sinusoidal shape with amplitude A/3 B. Sinusoidal shape with amplitude A/2 C. Sinusoidal shape with amplitude A D. Straight line
7	What is the average energy of N molecules of monoatomic gas?	A. 1/2 NkT B. NkT C. 3/2 NkT D. 5/2 NkT
8	The structure of solids is investigated by using	A. Cosmic Rays B. X-rays C. Intra red Radiation D. y-rays
9	The half life of a radio-isotope is 5 years The fraction of atoms decayed in this substance after 15 years will be	A. 1 B. 3/4 C. 7/8 D. 5/8
10	Which quantity is increased in step-down transformer?	A. Current B. Voltage C. Power D. Frequency
11	A monochromatic source of light is placed at a large distance d from a metal surface Photoelectrons are ejected at rate n,kinetic energy being E. If the source is brought nearer to distance d/2, the rate and kinetic energy per photoelectron become nearly	A. 2n and 2E B. 4n and 4e C. 4n and E D. N and 4E
12	A sun rise or sun set, the sun looks reddish because.	A. The sun is coldest at these times B. Of the effects of reflection and refraction C. The sun is hottest at these times D. Of the scattering of light
13	What remains constant in the field of central force?	A. Potential energy B. Kinetic energy C. Angular momentum D. Linear momentum
14	Ball pen function on the principle of	A. Viscosity B. Boyle's law C. Gravitational force

	D. Surface tension
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 B. LT ² ; LT and L C. LT ⁻² ; L and T D. L;LT and ; T csup>-2
In a voltmeter the conduction takes place due to	A. Electrons only B. Holes only C. Electrons and holes D. Electrons and ions
As the electron in Bohr orbit of hydrogen atom passes from stat $n=2$ 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
If the amplitude of sound is doubled and the frequency reduced to one-fourth the intensity of sound at the same point will be	A. Increasing by a factor of 2 B. Decreasing by a factor of 2 C. Decreasing by a factor of 4 D. Unchanged
Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
A bullet is short from a rifle. As a result the rifle recoils, The kinetic energy of rifle as compared to that of bullet is	A. Less B. Greater C. Equal D. Cannot be concluded
	v = at + b / t + c The dimensional formula of a,b and c care respectively: In a voltmeter the conduction takes place due to As the electron in Bohr orbit of hydrogen atom passes from stat n = 2 to n = 1 the kinetic energy K and potential energy U change as If the amplitude of sound is doubled and the frequency reduced to one-fourth the intensity of sound at the same point will be Planck's constant has the dimensions of: A bullet is short from a rifle. As a result the rifle recoils, The kinetic energy of rifle as