NAT I Medical Physics

Sr	Questions	Answers Choice
1	The direction of induced current is such that it opposes the very cause that has produced it This is the law of	A. Lenz B. Faraday C. Kirchoff D. Fleming
2	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
3	Which of the following sources give discrete emission spectrum?	A. Incandescent electric bulb B. Sun C. Mercury vapour lamp D. Candle
4	Ultra-violet radiation of 6.2 eV falls on an aluminium surface K.E of fastest electrons emitted is(work function = 4.2 eV)	A. 3.2 x 10-21 J B. 3.2 x 10-19 J C. 7 x 10-25 J D. 9 x 10-32 J
5	To make the frequency double of na oscillator we have to	A. Double the mass B. Half the mass C. Quadruple the mass D. Reduce the mass to one-fourth
6	Band spectrum in produced by	A. H B. He C. H₂ D. Na
7	A man pushes a wall but fails to displace it. He does:	A. Negative work B. Maximum positive work C. Positive work but not maximum D. No work
8	The peak voltage in a 200 volt A.C supply is nearly	A. 220 B. 253 C. 311
9	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
10	Copper and germanium are cooled to 70 K from room temperature then	A. Resistance of copper increases while that of germanium decreases B. Resistance of copper decreases while that of germanium increases C. Resistance of both decreases D. Resistance of both increases
11	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
12	Boyle's law is applicable in	A. Isochoric process B. Isothermal process C. Isobaric process D. Isotonic process
13	Which of the following is equal to: joule x ohm / volt x second ?	A. Ampere B. Volt C. Watt D. Tesla
14	A force of 10N is acting along y-axis its component along x-axis is	A. 10N B. 20N C. 100N D. Zero N

15	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. L² ; T and LT² B. LT² ; LT and L C. LT⁻²; L and T D. L;LT and T⁻²
16	The twinkling of stars is due to	A. The fact that stars do not emit light continuously B. The refractive index of the earth's atmosphere fluctuate C. Intermittent absorption of star light by its own atmosphere D. None of them
17	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
18	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.
19	If two non-zero vector $\overline{A}$ and $\overline{B}$ are parallel to each other, then $\overline{A}, \overline{B}$ is equal to	A. Zero B. AB C. A + B D. A - B
20	A ten-ohm electric heater operates on a 110 V line Calculate the rate at which it develops heat in watts:	A. 1310 W B. 670 W C. 810 W D. 1210 W