NAT I Medical Physics

Sr	Questions	Answers Choice
1	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^{o} the value of inductive reactance will be	A. R/4 B. R/2 C. R
2	A cable breaks if stretched by more than 2 mm it is cut into two equal parts how much either part can be stretched without breaking?	A. 0.25 m B. 0.5 m C. 1 mm D. 2 mm
3	In a Millikan's oil drop experiment the charge on an oil drop is calculated to be 6.35 x 10-19 C. The number of excess electrons on the drop is	A. 3.9 B. 4 C. 4.2 D. 6
4	If the dot product of two non-zero vectors vanishes the vectors will be	A. In the same direction B. Opposite to each other C. Perpendicular to each other D. Zero
5	If the metal bob is a simple pendulum is replaced by a wooden bob, then its time period will	A. Increase B. Decreases C. Remain the same D. First 'A' then 'B'
6	Who explained the origin of the Fraunhofer lines?	A. Fraunhoffer B. Kirchhoff C. Fresnel D. Snell
7	The part of a transistor which is heavily doped to produce large number of majority carriers is	A. Emitter B. Base C. Collector D. Any of the above depending on nature of transistor.
8	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
9	The nucleus 6C12 absorbs an energetic neutron and emits a beta particle (β) The resulting nucleus is	A. ₇N¹⁴ B. ₅B¹³ C. ₇N¹³ D. ₆N¹³
10	Which of the following is the only vector quantity	A. Temperature B. Energy C. Power D. Momentum
11	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
12	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
13	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
	Two points charges A and B separated by a distance R attract each other with a force of 12	A. 1.92 N

14	x 10^{-3} N. The force between A and B when the charges on them are doubled and distance is halved	B. 19.2 N C. 12 N D. 0.192 N
15	The average binding energy of a nucleon inside an atomic nucleus is about	A. 8 MeV B. 8 eV C. 8 Joules D. 8 ergs
16	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
17	Which of the following lists of physical quantities consists only of vectors:	A. Time,temperature,velocity B. Force,volume,momentum C. Velocity,acceleration,mass D. Force,acceleration,velocity
18	The volt/metre is the unit of:	A. Potential B. Work C. Force D. Electric field intensity
19	Band spectrum in produced by	A. H B. He C. H₂ D. Na
20	Which one of the following phenomena is not explained by Huygen's construction of wavefront?	A. Refraction B. Reflection C. Diffraction D. Origin of spectra