

## NAT I Medical Physics

Sr	Questions	Answers Choice
1	For production of beats the two sources must have	<p>A. Different frequencies and same amplitude</p> <p><b>B. Different frequencies</b></p> <p>C. Different frequencies same amplitude and same phase</p> <p>D. Different frequencies and same phase.</p>
2	The initial velocity of a body moving along a straight line in 7 m/s. It has a uniform acceleration of 4 m/s <sup>2</sup> . The distance covered by the body in the 5th second of its motion is	<p>A. 25 m</p> <p>B. 35 m</p> <p>C. 50 m</p> <p>D. 85 m</p>
3	When n-type of semiconductor is heated	<p>A. Number of electrons increases while that of holes decreases</p> <p>B. Number of holes increases while that of electrons decreases</p> <p>C. Number of electrons and holes remains same</p> <p><b>D. Number of electrons and holes increases equally</b></p>
4	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:	<p>A. <math>L^{2/2}</math> ; T and <math>LT^{2/2}</math></p> <p>B. <math>LT^{2/2}</math> ; LT and L</p> <p>C. <span style="font-size: 14.44444465637207px;">&lt;sup&gt;-2&lt;/sup&gt;&lt;span style="font-size: 14.44444465637207px;"&gt;LT&lt;/span&gt;&lt;sup&gt;-2&lt;/sup&gt;&lt;span style="font-size: 14.44444465637207px;"&gt;L and T&lt;/span&gt;</span></p> <p>D. L;LT and <math>T^{2/2}</math></p>
5	The fundamental unit which has same power in the dimensional formula of surface tension and viscosity is:	<p>A. Mass</p> <p>B. Length</p> <p>C. Time</p> <p>D. None</p>
6	A particle moving in a magnetic field has increase in its velocity then its radius of the circle	<p>A. Decreases</p> <p><b>B. Increases</b></p> <p>C. Remains the same</p> <p>D. Becomes half</p>
7	A conducting wire is drawn to double its length Final resistivity of the material will be	<p>A. Double of the original one</p> <p>B. Half of the original one</p> <p>C. One-fourth of the original one</p> <p><b>D. Same as original one</b></p>
8	Light appears to travel in straight lines since	<p>A. It is not absorbed by the atmosphere</p> <p>B. It is reflected by the atmosphere</p> <p><b>C. Its wavelength is very small</b></p> <p>D. Its velocity is very large</p>
9	A photoelectric cell converts	<p>A. Electrical energy to light energy</p> <p>B. Light energy to light energy</p> <p><b>C. Light energy to electrical energy</b></p> <p>D. Light energy to elastic energy</p>
10	Center of mass is a point	<p>A. Which is geometric center of a body</p> <p>B. From which distance of particles are same</p> <p><b>C. Where the whole mass of the body is supposed to be centered</b></p> <p>D. Which is the origin of reference frame</p>
11	Huygen's wave theory of light cannot explain	<p>A. Diffraction</p> <p>B. Interference</p> <p>C. Polarization</p> <p><b>D. Photoelectric effect</b></p>
		A. 3.9

12	In a Millikan's oil drop experiment the charge on an oil drop is calculated to be $6.35 \times 10^{-19}$ C. The number of excess electrons on the drop is	B. 4 C. 4.2 D. 6
13	In which of the following states does the incandescent substance give continuous spectrum?	A. Vapours in atomic state B. Vapours in molecular state C. Solid or fluid in bulk state D. Solid or fluid in plasma state
14	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. $\frac{3}{4}$ C. $\frac{7}{8}$ D. $\frac{5}{8}$
15	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
16	The primary winding of transformer has 500 turns whereas its secondary has 5000 turns The primary is connected to an a.c supply of 20 V, 50 Hz The secondary will have an output of	A. 200 V, 50 Hz B. 2 V, 50 Hz C. 200 V, 500 Hz
17	In an L-R circuit time constant is that time in which current grows from zero to the value	A. $0.63 I_0$ B. $0.50 I_0$ C. $0.73 I_0$ D. $I_0$
18	A voltmeter has resistance of 2000 ohms and it can measure up to 2V. If we want to increase its range to 10V then required resistance in series will be	A. $2000 \Omega$ B. $4000 \Omega$ C. $6000 \Omega$ D. $8000 \Omega$
19	A train of 150 m length is going towards north direction at a speed of $10 \text{ ms}^{-1}$ A parrot flies at a speed of $5 \text{ ms}^{-1}$ 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
20	The average binding energy of a nucleon inside an atomic nucleus is about	A. $8 \text{ MeV}$ B. 8 eV C. 8 Joules D. 8 ergs