

NAT I Medical Physics

Sr	Questions	Answers Choice
1	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 are respectively:	A. $L^{2/2}$; T and $L^{2/2}$ B. $L^{2/2}$; LT and L C. <math>L^{2/2}</math> ; L and <math>T^{2/2}</math> D. L;LT and <math>T^{2/2}</math>
2	Electrons in the atom are held in the atom due to	A. Coulomb forces B. Nuclear forces C. Gravitational forces D. Van der Waal's forces
3	The dot product of two vectors is negative when	A. They are parallel vectors B. They are anti-parallel vectors C. They are perpendicular vectors D. None of the above is correct
4	Steel is preferred for making springs over copper. Why?	A. Steel is cheaper B. Young's modulus of steel is more than that of copper C. Young's modulus of copper is more than that of steel D. Steel is less likely to be oxidized
5	Surface tension of water is due to	A. Inter molecular attraction B. Intermolecular spaces C. Inter molecular repulsion D. None of above
6	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
7	A photocell with a constant p.d of V volt across it illuminated by a point source from a distance of 25 cm. When the source is moved to a distance of 1 m, the electrons emitted by the photocell	A. Carry 1/4th their previous energy B. Are 1/6th as numerous as before C. Are 1/4th as numerous as before D. Carry 1/4th their previous momentum
8	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
9	Bernoulli's equation is based upon law of conservation	A. Mass B. Momentum C. Energy D. None of these
10	The modulus of rigidity of a liquid is	A. Zero B. 1 C. Infinity D. A value not one of those mentioned above
11	The unit of inductance is equivalent to	A. $V \times s/A$ B. $V \times A/s$ C. $A \times s/v$ D. $V/A \times s$
12	If yellow light emitted by sodium lamp in Young's double slit experiment is replaced by monochromatic blue light of the same intensity	A. Fringe width will decrease B. Fringe width will increase C. The fringe width will remain unchanged D. Fringes will become less intense
13	Band spectrum is produced by	A. H B. He C. Hg

		<p>C. $H\lambda^2$</p> <p>D. Na</p>
14	The contrast in the fringes in any interference pattern depends on	<p>A. Fringe width</p> <p>B. Intensity ratio of the sources</p> <p>C. Distance between the slits</p> <p>D. Wavelength</p>
15	A body of mass 2 kg is thrown up vertically with K.E of 490 joules If the acceleration due to gravity is 9.8 m/s^2 the height at which the K.E of the body becomes half its original value is give by:	<p>A. 50 m</p> <p>B. 12.5 m</p> <p>C. 25 m</p> <p>D. 10 m</p>
16	A capacitor acts as an infinite resistance for	<p>A. AC</p> <p>B. DC</p> <p>C. Both AC and DC</p>
17	The motion without consideration of its cause is studied in:	<p>A. Kinematics</p> <p>B. Mechanics</p> <p>C. Statics</p> <p>D. Modern Physics</p>
18	The velocity of a particle at an instant is 10 m/s and after 5 s the velocity of the particle is 20 m/s.The velocity 3s before in m/s is:	<p>A. 8</p> <p>B. 4</p> <p>C. 6</p> <p>D. 7</p>
19	Huygen's wave theory of light cannot explain	<p>A. Diffraction</p> <p>B. Interference</p> <p>C. Polarization</p> <p>D. Photoelectric effect</p>
20	The angle between rectangular components of a vector is	<p>A. 0°</p> <p>B. 60°</p> <p>C. 90°</p> <p>D. 120°</p>