

## NAT I Medical Physics

Sr	Questions	Answers Choice
1	A photoelectric cell converts	A. Electrical energy to light energy B. Light energy to light energy C. Light energy to electrical energy D. Light energy to elastic energy
2	According to the Hooke's law the force required to change the length of a wire by '1' is proportional to	A. $1^{-2}$ B. $1^{-1}$ C. 1 D. $1^2$
3	The terminal velocity of a small size spherical body of radius R moving in a fluid varies as	A. R B. $R^2$ C. 1/R D. $(1/R)^2$
4	The velocity of falling raindrops attains limited value because of	A. Up thrust of air B. Viscous force exerted by air C. Surface tension effect D. Air currents atmosphere
5	A force of 10N is acting along y-axis its component along x-axis is	A. 10N B. 20N C. 100N D. Zero N
6	If the earth were to rotate faster than its present speed the weight of an object will	A. Increase at the equator but remain unchanged at the poles B. Decrease at the equator but remain unchanged at the poles C. Remain unchanged at the decrease but decrease at the poles D. Remain unchanged at the equator but increase at the poles
7	What remains constant in the field of central force?	A. Potential energy B. Kinetic energy C. Angular momentum D. Linear momentum
8	There are discrete energy levels in atoms. It was first experimentally demonstrated by	A. Rutherford's experiment B. Frank Hertz experiment C. Marsden's experiment D. Sommerfield experiment
9	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'
10	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
11	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
12	For obtaining appreciable extension the wire should be	A. Short and thin B. Long and thin C. Short and tick D. Long and thick
13	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
14	Center of mass is a point	A. Which is geometric center of a body B. From which distance of particles are same C. Where the whole mass of the body

is supposed to be centered

D. Which is the origin of reference frame

15	Two point charges placed at distance of 20 cm in air repel each other with a certain force. When a dielectric slab of thickness 8 cm and dielectric constant K is introduced between these point charges force of interaction becomes half of its previous value Then K is approximately.	A. 2 B. 4 C. $\sqrt{2}$ D. 1
16	At 0° K which of the following properties of a gas will be zero?	A. Kinetic energy B. Potential energy C. Vibrational energy D. Density
17	Relation between pressure (P) and energy (E) of a gas is	A. $P = 2/3 E$ B. $P = 1/3 E$ C. $P = 3/2 E$ D. $P = 3 E$
18	The nucleus ${}^6_6\text{C}^{12}$ absorbs an energetic neutron and emits a beta particle ( $\beta$ ) The resulting nucleus is	A. ${}^7_7\text{N}^{14}$ B. ${}^5_5\text{B}^{14}$ C. ${}^7_7\text{N}^{13}$ D. ${}^6_6\text{C}^{13}$
19	A prism splits a beam of white light into its seven constituent colors this is so because	A. Phase of different colors is different B. Amplitude of different colors is different C. Energy of different colors is different D. Velocity of different colors is different
20	The unit of inductance is equivalent to	A. $V \times s/A$ B. $V \times A/s$ C. $A \times s/v$ D. $V/A \times s$