

## NAT I Medical Physics

Sr	Questions	Answers Choice
1	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	<p>A. Carry 1/4th their previous energy</p> <p>B. Are 1/6th as numerous as before</p> <p>C. Are 1/4th as numerous as before</p> <p>D. Carry 1/4th their previous momentum</p>
2	There are discrete energy levels in atoms. It was first experimentally demonstrated by	<p>A. Rutherford's experiment</p> <p>B. Frank Hertz experiment</p> <p>C. Marsden's experiment</p> <p>D. Sommerfield experiment</p>
3	A wire is stretched to double of its length.The strain is	<p>A. 2</p> <p>B. 1</p> <p>C. Zero</p> <p>D. 0.5</p>
4	The average binding energy of a nucleon inside an atomic nucleus is about	<p>A. <math>8 \text{ MeV}</math></p> <p>B. 8 eV</p> <p>C. 8 Joules</p> <p>D. 8 ergs</p>
5	The velocity of falling raindrops attains limited value because of	<p>A. Up thrust of air</p> <p>B. Viscous force exerted by air</p> <p>C. Surface tension effect</p> <p>D. Air currents atmosphere</p>
6	The unit of inductance is equivalent to	<p>A. <math>V \times s/A</math></p> <p>B. <math>V \times A/s</math></p> <p>C. <math>A \times s/v</math></p> <p>D. <math>V/A \times s</math></p>
7	The smooth or steady stream-line flow is know as	<p>A. Laminar flow</p> <p>B. Turbulent flow</p> <p>C. Both a and b</p> <p>D. None of the above</p>
8	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	<p>A. 200 V, 50 Hz</p> <p>B. 2 V, 50 Hz</p> <p>C. 200 V, 500 Hz</p>
9	Band spectrum is produced by	<p>A. H</p> <p>B. He</p> <p>C. <math>H_{2}</math></p> <p>D. Na</p>
10	A ten-ohm electric heater operates on a 110 V line Calculate the rate at which it develops heat in watts:	<p>A. 1310 W</p> <p>B. 670 W</p> <p>C. 810 W</p> <p>D. 1210 W</p>
11	Ultra-violet radiation of 6.2 eV falls on an aluminium surface K.E of fastest electrons emitted is(work function = 4.2 eV)	<p>A. <math>3.2 \times 10^{-21} \text{ J}</math></p> <p>B. <math>3.2 \times 10^{-19} \text{ J}</math></p> <p>C. <math>7 \times 10^{-25} \text{ J}</math></p> <p>D. <math>9 \times 10^{-32} \text{ J}</math></p>
12	A 50-volt battery is connected across 10-ohm resistor.The current is 4.5 A.The internal resistance of the battery is	<p>A. Zero</p> <p>B. <math>0.5 \Omega</math></p> <p>C. <math>1.1 \Omega</math></p> <p>D. <math>5.0 \Omega</math></p>
13	Which of the following lists of physical quantities consists only of vectors:	<p>A. Time,temperature,velocity</p> <p>B. Force,volume,momentum</p> <p>C. Velocity,acceleration,mass</p> <p>D. Force,acceleration,velocity</p>
14	Two sources of sound are said to be coherent if	<p>A. They produce sounds of equal intensity</p> <p>B. They produce sounds of equal frequency</p> <p>C. They produce sound waves vibrating with the same phase</p> <p>D. They produce sound waves with zero or constant phase difference all instant of time</p>

15	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
16	In a voltmeter the conduction takes place due to	A. Electrons only B. Holes only C. Electrons and holes D. Electrons and ions
17	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:	A. 8 B. 4 C. 6 D. 7
18	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. $P = 3 E$
19	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
20	If the period of oscillation of mass (M) suspended from a spring is 2s, then the period of mass 4M will be	A. 1 s B. 2 s C. 3 s D. 4 s