NAT I Medical Physics

Sr	Questions	Answers Choice
1	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
2	With the propagation of a longitudinal wave through a material medium the quantities transmitted in the propagation direction are	A. Energy momentum and mass B. Energy C. Energy and mass D. Energy and linear momentum
3	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 Ω B. 4000 Ω C. 6000 Ω D. 8000 Ω
4	When n-type of semiconductor is heated	A. Number of electrons increases while that of holes decreases B. Number of holes increases while that of electrons decreases C. Number of electrons and holes remains same D. Number of electrons and holes increases equally
5	Choose the correct statement	A. Both an ammeter and voltmeter should have small resistance B. Both an ammeter and a voltmeter should have large resistance C. An ammeter should have large resistance and a voltmeter should have small resistance D. An ammeter should have small resistance and a voltmeter should have large resistance
6	What is the ratio of r.m.s velocity for O_2 to H_2?	A. 1/4 B. 4 C. $\sqrt{4}$: 1 D. 1 : $\sqrt{4}$
7	A monochromatic source of light is placed at a large distance d from a metal surface Photoelectrons are ejected at rate n,kinetic energy being E. If the source is brought nearer to distance d/2, the rate and kinetic energy per photoelectron become nearly	A. 2n and 2E B. 4n and 4e C. 4n and E D. N and 4E
8	When boron is added as an impurity to silicon the resulting material is	A. n type conductor B. n type semiconductor C. p-type conductor D. p-type semiconductor
9	What is the average energy of N molecules of monoatomic gas?	A. 1/2 NkT B. NkT C. 3/2 NkT D. 5/2 NkT
10	The structure of solids is investigated by using	A. Cosmic Rays B. X-rays C. Intra red Radiation D. y-rays
11	A particle moving in a magnetic field has increase in its velocity then its radius of the circle	A. Decreases B. Increases C. Remains the same D. Becomes half
12	The excess (equal in number) of electrons that must be placed on each of two small spheres spaced 3 cm apart. with force of repulsion between the spheres to be 10^{-19} N is	A. 25 B. 225 C. 625 D. 1250
13	The sieman is the SI unit of	A. Resistance B. Specific Resistance C. Conductance D. Inductance

#	Question	Options
14	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. $(1/R)^2$
15	The conductivity of a superconductor is	**A. Infinite** B. Very large C. Very small D. Zero
16	The unit of inductance is equivalent to	**A. $V \times s/A$** B. $V \times A/s$ C. $A \times s/v$ D. $V/A \times s$
17	What will be the duration of the day and night (in hour) if the diameter of the earth is suddenly reduced to half its original value the mass remaining constant?	A. 12 **B. 6** C. 3 D. 2
18	To explain his theory Bohr used	A. Conservation of linear momentum **B. Conservation of angular momentum** C. Conservation of quantum frequency D. Conservation of energy
19	Which of the following particle would experience the largest magnetic force when projected with the same velocity perpendicular to a magnetic field?	A. Proton B. Electron C. He^+ **D. Li^+**
20	Two electric bulbs of 200 W and 100 W have same voltage. If R1 and R2 be their resistance respectively then	A. $R_1 = 2R_2$ **B. $R_2 = 2R_1$** C. $R_2 = 4R_1$ D. $R_1 = 4R_2$