

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	The minimum wavelength of the X-rays produced by electrons accelerated through a potential difference of V volts is directly proportional to	A. \sqrt{V} B. $V^{>2}</sup>$ C. $1/\sqrt{V}$ D. $1/V$
3	The essential distinction between X-rays and γ -rays is that	A. γ -rays have smaller wavelength than X-rays B. γ -rays emanate from nucleus while X-rays emanate from outer part of the atom C. γ -rays have greater ionizing power than X-rays D. γ -rays are more penetrating than X-rays
4	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
5	Ultra-violet radiation of 6.2 eV falls on an aluminium surface K.E of fastest electrons emitted is (work function = 4.2 eV)	A. 3.2×10^{-21} J B. 3.2×10^{-19} J C. 7×10^{-25} J D. 9×10^{-32} J
6	The frequency of the incident light falling on a photosensitive metal plate is doubled the kinetic energy of the emitted photoelectrons is	A. Double the earlier value B. Unchanged C. More than doubled D. Less than doubled
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	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