MDCAT Physics Online Test

Sr	Questions	Answers Choice
1	The potential difference applied to an X-rays tube is increased. As a result, in the emitted radiation	A. The intensity increases B. The minimum wavelength decrease C. The intensity remains unchanged D. Both B & C
2	Light of frequency 4f0 is incident on the metal of the threshold frequency f0. The maximum kinetic energy of the emitted photoelectrons is	A. 3h f0 B. 3/2h f0 C. 2h f0 D. 1/2h f0
3	Figure represents a graph of kinetic energy (K) of the photoelectrons (in eV) and frequency (v) for a metal used as cathode in photoelectric experiment. The work function of metal is:	A. 1 eV B. 2 eV C. 1.5 eV D. 3 eV
4	The ratio of the longest and shortest wavelength of the Lyman series is approximately:	A. 4/3 B. 9/4 C. 9/5 D. 16/7
5	According to Bohr's theory, a line in the Ballmer series arises when the electron jumps from any of the higher orbits to the orbit with quantum number:	A. 1 B. 2 C. 3 D. 4
6	In which region of the electromagnetic spectrum does the Lyman series of hydrogen atom lie?	A. Infrared B. Visible C. Ultraviolet D. X-rays
7	A proton and an □ − □□□□□□□□ are accelerated through same voltage, the ratio of their de- Broglie wavelength will be:	A. 1:2 B. √2: 1 C. 2√2: 1 D. 2:1
8	The de-Broglie wavelength of the particle of mass m and energy E is:	B. I C. □ = I√2□□ D. □ = 1
9	Threshold wavelength for metal having work function □ is □. What is the threshold wavelength for metal having work function 2 □□:	A. /□ B. 2 C. 4 D. □/□
10	When ultraviolet rays are incident in metal plate, then photoelectric effect does not occur. It occurs by the incidence of:	A. x-rays B. Infrared rays C. Radio wave D. Greenhouse effect
11	The hydrogen atoms are excited to the stationary state designated by the principal quantum number n=4, the number of maximum spectral lines are observe:	A. 2 B. 3 C. 4 D. 6
12	A proton, accelerated through a p.d V has a certain de Broglie wavelength. In order to have the same de Broglie wavelength, an □ −particles must be accelerated through a potential difference:	A. 4V B. 8V C. V/4 D. V/8
13	As the intensity of incident light increases:	A. Photoelectric current increases B. Photoelectric current decreases C. Kinetic energy of emitted photoelectrons increases D. Kinetic energy of emitted photoelectrons decreases
14	To find longest wavelength radiation in Ballmer series, the value of n used is:	A. 2 B. 3 C. 4 D. ∞
15	Maximum speed of electrons in X-rays tube which is producing X-rays photons of frequency f	

	is	
16	J.J Thomson finds:	A. Particle nature of the electron B. Dual nature of electron C. Wave nature of electron D. Electromagnetic nature of electron
17	G.P Thomson revealed:	A. Particle nature of electron B. Dual nature of electron C. Wave nature of electron D. Electromagnetic nature of electron
18	Interference and diffraction of light confirms its:	A. Particle nature B. Dual nature C. Wave nature D. Electromagnetic nature
19	Davisson and Germer received the Nobel prize for their work on:	A. Wave nature of particle B. Corpuscular nature of wave C. Dual nature of particle D. All of them
20	De-Broglie received the Nobel prize on his work on:	A. Wave nature of particle B. Corpuscular nature of wave C. Dual nature of particle D. All of them
21	De-Broglie received the Nobel prize in	A. 1929 B. 1937 C. 1928 D. 1924
22	Diffraction pattern has also been observed for:	A. Proton B. Neutron C. Hydrogen atom D. All of them
23	In order to perform experiment, Davisson and Germer used accelerating voltage of:	A. 54V B. 120V C. 220V D. 400V
24	Davisson and Germer, in their experiment used:	A. Nickle crystal B. Lead crystal C. Graphite crystal D. Glass
25	Which of the particles, electron, proton and neutron moving with same speed has longest wave length?	A. Electron B. Proton C. Neutron D. All have same
26	Interference and diffraction confirm:	A. Particle nature B. Wave nature C. Dual nature D. None of these
27	The number of electrons emitted depend upon	A. Colour of target surface B. Shape of surface C. Frequency of incident light D. Intensity of incident light
28	Rest mass energy of electron is:	A. 1.02 MeV B. 0.51 MeV C. 931 MeV D. 200 MeV
29	In photoelectric effect, if we increase the frequency of the incident light then of the electrons increased	A. Number B. K.E C. P.E D. Frequency
30	The unit of work function is	A. eV B. Volt C. Farad D. Herdz
31	The maximum kinetic energy of emitted photoelectrons depends upon:	A. The intensity of incident light B. Frequency of incident light C. Metal surface D. Both frequency of incident light and metal surface
32	In order to increase the K.E of ejected photo electrons, there should be an increase in:	A. Intensity of radiation B. Nonel C. Frequency of radiation D. Both (b) & (c)
		A. Pair production

33	The reverse process of photo-electric effect is called:	A. Pair production B. Compton effect C. Annihilation of matter D. X-rays
34	Potassium cathode in photocell emits electrons for a light:	A. Visible B. Infrared C. Ultraviolet D. X-rays
35	Photoelectric effect and Compton effect prove the:	A. Wave nature of light B. Particle nature of light C. Dual nature of light D. Dual nature of light
36	Compton Effect makes the use of the law of conservation of:	A. Energy B. Momentum C. Charge D. Both (a) & (b)
37	The unit Compton wavelength is same as:	A. Compton wavelength B. Compton frequency C. Compton shift D. Both (a) & (b)
38	In Compton effect, it was considered that X-rays consist of:	A. Electrons B. Positrons C. Photons D. All of these
39	A.H Compton studied the scattering of X-rays by loosely bound electrons from a graph target in:	A. 1905 B. 1911 C. 19251 D. 1923
40	Photo cells is a device which convert light into:	A. Wave nature B. Particle nature C. Particle wave nature D. Dual nature