

## MDCAT Physics Chapter 12 Atomic spectra MCQ's Test

Sr	Questions	Answers Choice
1	To find longest wavelength radiation in Ballmer series, the value of n used is:	A. 2 B. 3 C. 4 D. $\infty$
2	What will be the number of photons emitted per second by 25 W source of monochromatic light of wavelength 600 nm:	A. $7.5 \times 10^{17}$ B. $7.5 \times 10^{19}$ C. $5.5 \times 10^{19}$ D. $5.5 \times 10^{17}$
3	For X-rays which of the following is not correct:	A. Cause of ionization in air when they pass through it B. Can be deflected by electric and magnetic fields C. Can be used to detect flaws in metal casting D. Travel with the speed of light
4	The de-Broglie wavelength of the particle of mass m and energy E is:	B. $\frac{h}{\sqrt{2mE}}$ C. $\frac{h}{\sqrt{mE}}$ D. $\frac{h}{\sqrt{mE}}$
5	Intensity of light from a point source at the edge of unit sphere will be:	A. $\frac{P}{4\pi}$ B. $\frac{P}{4\pi r^2}$ C. $P(4\pi)$ D. $4\pi$
6	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
7	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
8	The maximum energy of the electrons released in a photo cell is independent of:	A. Frequency of incident light B. Intensity of incident light C. Nature of cathode rays D. None of these
9	The threshold frequency depends on the nature on:	A. Natural frequency B. Photosensitive anode C. Photosensitive cathode D. Photon
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 momentum of the moving photon is:	A. Zero B. $\frac{h\nu}{c}$ C. $\frac{h\nu}{c}$ D. $\frac{h\nu}{c}$
12	The minimum energy required to remove an electron is called:	A. Stopping potential B. Work function C. Kinetic energy D. None of these
13	An electron in the n=1 orbit hydrogen atom is bound by 13.6 eV. If a hydrogen atom is in the n=3 state, how much energy is required to ionize it:	A. 13.6 eV B. 4.53 eV C. 3.4 eV D. 1.51eV
14	When an electron in an atom goes from a lower to higher its:	A. K.E. increases, P.E. decreases B. K.E. increases C. P.E increases D. K.E. decrease, P.E. increases
	A proton. accelerated through a p.d V has a certain de Broalgie wavelenath. In order to have	A. $\frac{h}{\sqrt{2mV}}$ B. $\frac{h}{\sqrt{mV}}$ C. $\frac{h}{\sqrt{mV}}$ D. $\frac{h}{\sqrt{mV}}$

15	the same de Broglie wavelength, an $\alpha$ -particles must be accelerated through a potential difference:	B. 8V C. $\sqrt{4}$ D. $\sqrt{8}$
16	A proton and an $\alpha$ -particles are accelerated through same voltage, the ratio of their de- Broglie wavelength will be:	A. 1:2 B. $\sqrt{2}: 1$ C. $2\sqrt{2}: 1$ D. 2:1
17	Light of frequency 1.5 times the threshold frequency is incident on a photo sensitive material. If the frequency is halved and intensity is doubled the photo electric current becomes	A. Four times B. Half C. Double D. Zero
18	If an electron is accelerated such that its K.E is 4 times of its rest mass energy then the total relativistic energy of electrons is about	A. $5 \times 10^{-12}$ J B. $4 \times 10^{-13}$ J C. $3 \times 10^{-13}$ J D. $6 \times 10^{-12}$ J
19	Figure represents a graph of kinetic energy (K) of the photoelectrons (in eV) and frequency ( $\nu$ ) 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
20	Which of the following statement is true about soft X-rays?	A. They have large wavelength B. They have high energy C. They have low energy D. Both A and C