MDCAT Physics Chapter 12 Atomic spectra MCQ's Test

Sr	Questions	Answers Choice
1	A photo cell receives light from a source at 50 cm away and produces 40mAcurrent inthe circuit. When the same source at is at distance 1 m from photo cell,current in the circuit will be	A. 20 mA B. 80mA C. 60 mA D. 10 mA
2	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
3	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. □/□
4	Work function of all metals varies from 2 eV to 4eV. It is 4.2 eV for Aluminum and2eV for Sodium. If these two metals are illuminated by same light, the thresholdfrequency ofAluminum is	A. Less than Sodium B. Equal to that of Sodium C. Grater than Sodium D. Can't be decided
5	If an electron is accelerated such that its K.E is 4 times of its rest mass energythen thetotal relativistic energy of electrons is about	A. 5 × 10–12 J B. 4 × 10–13 J C. 3 × 10–13 J D. 6 × 10–12 J
6	Monochromatic light of wavelength 300 nm is incident normally on a surface of area 4 cm2. If the intensity of light is 150 mW/m2; the rate at which photon strike the surface:	A. 2.53 × 1019 B. 7.5 × 1019 C. 9.1 × 1013 D. 2.53 × 1013
7	The momentum of the moving photon is:	A. Zero B. I C. □ D. I□
8	Maximum speed of electrons in X-rays tube which is producing X-rays photons of frequency f is	
9	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
10	The threshold frequency depends on the nature on:	A. Natural frequency B. Photosensitive anode C. Photosensitive cathode D. Photon
11	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
12	Continuous spectrum of X-rays id due to an effect known as	A. Photoelectric effect B. Compton effect C. Heisenberg effect D. Bremsstrahlung
13	Ultraviolet radiation of 6.2 eV falls on an aluminium surface having work function ⌀ = □. □ □□. The kinetic energy of the fastest electron emitted is:	A. 4 eV B. 2 eV C. 2.2 eV D. 1.2 eV
14	What is the momentum of a photon of light of wavelength 500 nm in kgm/s:	A. 1.32 × 10−21 B. 1.32 × 10−23 C. 1.32 × 10−25 D. 1.32 × 10−27
15	How many photons per second does a one-watt bulb emit if its efficiency is 10% and the wavelength of light is 500 nm:	A. 2.53 × 1017 B. 2.53 × 1019 C. 7.5 × 1019 D. 7.5 × 1017

16	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
17	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
18	Light elements do not emit X-rays because	A. Electrons in it have high binding energy B. These materials are non- material C. There is a small difference in their energy shells D. Electrons in it require very large energy to remove from these materials
19	The Balmer series is found in the spectrum of:	A. Hydrogen B. Nitrogen C. Oxygen D. All
20	In which region of the electromagnetic spectrum does the Lyman series of hydrogen atom lie?	A. Infrared B. Visible C. Ultraviolet D. X-rays