MDCAT Physics Chapter 12 Atomic spectra MCQ's Test

Sr	Questions	Answers Choice
1	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
2	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
3	An electron and a proton are accelerated through the same potential. If their masses are me and mp respectively, then the ratio of their de-Broglie wavelength is:	A. 1 B. mp/me C. me/mp
4	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
5	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
6	Temperature of black body radiating at 270c is increased to 327oc, then emittedenergywill increase by	A. 2 times B. 12 times C. 16 times D. 4 times
7	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
8	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
9	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
10	Light of frequency 2 times the threshold frequency is incident on the metalsurface. Ifthe frequency is by quartered and intensity is doubled, the photoelectric becomes	A. Quadrupled B. Zero C. Doubled D. Halved
11	Which of the following is not true?	A. The Lyman series is a continuous spectrum B. The Ballmer series is a line spectrum in the visible region C. The Paschen series is a line spectrum in the infrared region D. The spectral series formula can be derived from Rutherford's model of the hydrogen atom 18. The photoelectric effect is the ejection of
12	The Balmer series is found in the spectrum of:	A. Hydrogen B. Nitrogen C. Oxygen D. All
13	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
14	Choose incorrect about properties of photon	A. Rest mass of photon is zero B. A photon is never at rest C. Photon is not deflected by electric field not by magnetic field

		D. The velocity of photon is different in different media
15	The threshold frequency depends on the nature on:	A. Natural frequency B. Photosensitive anode C. Photosensitive cathode D. Photon
16	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
17	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
18	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
19	The de-Broglie wavelength of the particle of mass m and energy E is:	B. *h* C. □ = *h*√2□□ D. □ = 1
20	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