MDCAT Physics Chapter 12 Atomic spectra MCQ's Test

Sr	Questions	Answers Choice
1	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
2	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
3	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
4	The momentum of the moving photon is:	A. Zero B. I C. □ D. I□
5	Intensity of light from a point source at the edge of unit sphere will be:	A. □ B. □ C. P(4π) D. 4□
6	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
7	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
8	The minimum energy required to remove an electron is called:	A. Stopping potential B. Work function C. Kinetic energy D. None of these
9	Of electron of 50 keV strike a heavy target. Then radiation emitted by target will be	A. Visible light B. Radio waves C. Ultraviolet D. None of these
10	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
11	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
12	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
13	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
		A. 1:2

14	A proton and an □ − □□□□□□□□ are accelerated through same voltage, the ratio of their de- Broglie wavelength will be:	B. √2: 1 C. 2√2: 1 D. 2:1
15	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
16	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
17	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
18	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
19	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
20	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