

Chapter 20: Atomic Spectra

- 1: The relation between Rydberg constant R_H and ground state energy E_0 is given by
a) $R_H = E_0/hc$ b) $R_H = hc/E_0$ c) $E_0 = R_H/hc$ d) $R_H = E_0 hc$
- 2: Balmer series lies in the-----region
a) Ultraviolet b) far ultraviolet c) infrared d) visible
- 3: The radius of 3rd Bohr orbit in hydrogen atom is greater than radius of 1st orbit is given by
a) 2 b) 3 c) 4 d) 9
- 4: The rest mass of x-rays photon is
a) $9.1 \times 10^{-11} \text{ kg}$ b) $1.67 \times 10^{-27} \text{ kg}$ c) zero d) smaller than light ray photon
- 5: In laser, a metastable state is of order of----sec
a) 10^{-3} b) 10^{-6} c) 10^{-8} d) 10^{-10}
- 6: The value of Rydberg constant is
a) $1.097 \times 10^7/\text{m}$ b) $1.0794 \times 10^7/\text{m}$ c) $1.0974 \times 10^9/\text{m}$ d) $1.974 \times 10^9/\text{m}$
- 7: What is the colour of He-Ne laser
a) Blue b) green c) Red d) yellow
- 8: Electrons can reside in excited state for about
a) 10^{-3} s b) 10^{-5} s c) 10^{-8} s d) 10^{-11} s
- 9: Which of the following series of H-spectrum lies in ultraviolet region?
a) Lyman series b) Balmer series c) Paschen series d) Bracket series
- 10: For holography, we use a beam of
a) γ -rays b) X-rays c) β -rays d) LASER
- 11: Atomic spectra are the example of -----spectra
a) Continuous b) line c) band d) mix
- 12: Which one of the following requires a material medium for their propagation
a) Heat waves b) X-rays c) Sound waves d) Ultraviolet rays
- 13: Which is not true for X-rays
a) X-rays are not deflected by electric field c) X-rays are polarized
c) X-rays consist of electromagnetic waves d) X-rays can be diffracted by grating
- 14: Energy of 4th orbit in hydrogen atom is
a) -2.51 eV b) -3.50 eV c) -13.6 eV d) -0.85 eV