

18.11 MULTIPLE CHOICE QUESTIONS OF PAPERS:

YEAR 2013:

- (1) When an electron falls from the 3rd orbit to 1st orbit in the Hydrogen atom, the lines spectrum obtained belongs to:
* Bracket series * **Lyman series** * Balmer series * Paschen series

YEAR 2012:

- (2) Laser Produced:
* an electron beam * an neutron beam
* **a coherent beam of Light** * All of these

YEAR 2010:

- (3) Brackett series of Hydrogen spectrum lies in:
* Ultraviolet region * Visible region
* **Infrared region** * All of them
- (4) The wavelength of X – rays in the range:
* 0.01 nm to 0.1 nm * 1A° to 100A°
* 0.1A° to 1 m * **0.1 nm to 1.0 nm**

YEAR 2008:

- (5) Hydrogen atom spectrum consists of lines in:
* Ultra violet region * Visible region
* Infrared region * **All of them**

YEAR 2006:

- (6) The frequencies in spectral lines emitted in Lyman series are in the _____ region:
* Visible * Infrared * X – rays * **Ultraviolet**

18.12 MULTIPLE CHOICE QUESTIONS (SELF PRACTICE):

- Q.1. In a hydrogen atom Balmer series electron falls into:
(a) $n = 1$ (b) $n = 2$ (c) $n = 3$ (d) $n = 4$
- Q.2. Laser is the:
(a) Beam of electrons (b) Coherent beam of light
(c) Beam of ultra violet rays (d) All of these
- Q.3. According to Bohr's theory, electron revolving around the nucleus in a fixed orbit radiates:
(a) Energy (b) X-rays (c) γ -ray (d) No energy
- Q.4. The first spectral line emitted in Lyman Series of Hydrogen atom when electrons fall from
(a) $n = 1$ (b) $n = 2$ (c) $n = 3$ (d) $n = \infty$
- Q.5. Spectral lines in the Balmer Series of Hydrogen atom lies in the region of:
(a) Ultraviolet rays (b) X-rays
(c) Visible light (d) Infra red rays
- Q.6. According to the Bohr's theory, angular momentum of electron is integral multiple of:
(a) h (b) \hbar (c) $\frac{1}{h}$ (d) $\frac{1}{\hbar}$
- Q.7. Range of wave length of X-rays is:
(a) 400 nm — 700 nm (b) 700 nm — 1000 nm
(c) 100 nm — 0.1000 nm (d) 0.1 nm — 1nm

- Q.8. X-rays are produced when:
 (a) Electron falls to ground state
 (b) Electron loses its energy in the Vicinity of nucleus
 (c) Electron jumps to higher state
 (d) All of these
- Q.9. Frequency of Photon emitted, from Bohr's theory is given by:
 (a) $\frac{E}{h}$
 (b) $\frac{E_i - E_f}{h}$
 (c) $\frac{-13.6 \text{ eV}}{n^2}$
 (d) None of these
- Q.10. Radius of 1st orbit of hydrogen atom is 0.53 °A. Radius of fifth state of Hydrogen atoms is:
 (a) 2.65 °A
 (b) 13.25 °A
 (c) 20 °A
 (d) Infinite
- Q.11. The most stable state of ruby is:
 (a) Ground state
 (b) Meta state
 (c) Higher state
 (d) Excited state
- Q.12. The process of collecting excited electrons from unstable state into stable state is called:
 (a) Induced absorption
 (b) Population Inversion
 (c) Emitted radiation
 (d) de excitation
- Q.13. Wave length of maximum radiant energy in Hydrogen atom spectrum belongs to:
 (a) Lyman series
 (b) Balmer series
 (c) Paschen series
 (d) Pfund series.
- Q.14. Ground state energy of Hydrogen atom is:
 (a) Zero
 (b) 3.45 eV
 (c) 13.6 eV
 (d) -13.6 eV
- Q.15. In Hydrogen atom spectrum longest wave length of radiations belongs to:
 (a) Lyman series
 (b) Balmer series
 (c) Paschen series
 (d) P'fund series.
- Q.16. Number of photoelectrons emitted from a metal depends upon:
 (a) Frequency of light
 (b) Wavelength of light
 (c) Intensity of light
 (d) Speed of light
- Q.17. Wave nature of particle is linked by:
 (a) Speed of light
 (b) Plank's constant
 (c) Inertial mass
 (d) Momentum of particle
- Q.18. The black body which is close to perfect black body is:
 (a) Cavity radiator
 (b) Black holes
 (c) Translucent glass box
 (d) All of these
- Q.19. Wave length of minimum radiant energy in hydrogen atom belongs to:
 (a) Lyman series
 (b) Balmer series
 (c) Paschen series
 (d) P'fund series
- Q.20. Linear and angular momentum of electron of hydrogen atom is linked by:
 (a) Plank's Constant
 (b) Quantum number of state
 (c) Energy of state
 (d) Orbital radius

KEY

(1) $n = 2$	(2) All of these
(3) Energy	(4) $n = 2$
(5) Visible light	(6) \hbar
(7) 0.1 nm — 1nm	(8) Electron loses its energy in the Vicinity of nucleus
(9) $\frac{E_i - E_f}{h}$	(10) 13.25 °A
(11) Meta state	(12) Population Inversion
(13) Balmer series	(14) -13.6 eV
(15) P'fund series	(16) Speed of light
(17) Speed of light	(18) Black holes
(19) Balmer series	(20) Orbital radius