ARJUNA (NEET)

ATOMIC STRUCTURE

DPP-6

1. If the shortest wavelength in Lyman series of hydrogen atom is A, then the longest wavelength in Paschen series of He^+ is

   (A) $\frac{5A}{9}$ (B) $\frac{9A}{5}$

   (C) $\frac{36A}{5}$ (D) $\frac{36A}{7}$

2. The wave number of the first emission line in the Balmer series of H-spectrum is: (R = Rydberg constant)

   (A) $\frac{5}{36}R$ (B) $\frac{9}{400}R$

   (C) $\frac{7}{6}R$ (D) $\frac{3}{4}R$

3. An e^{Θ} jumps from 4^{th} Excited state to ground state in H-atom, then find total lines.

   (A) 10 (B) 9

   (C) 8 (D) 7

4. An e^{Θ} jumps from 4^{th} Excited state to 1^{st} excited state. Find no. of lines in Lyman series.

   (A) 5 (B) 4

   (C) 15 (D) Zero

5. The ratio of the frequencies of the long wavelength limits of Lyman and Balmer series of hydrogen spectrum is

   (A) 27:5 (B) 5:27

   (C) 4:1 (D) 1:4

6. Find the ratio of wavelength of Limiting line of Lyman, Balmer and Paschen.

   (A) 1:4:9 (B) 9:4:1

   (C) 2:3:6 (D) 4:1:9

7. Find the wavelength of light emitted when e^{Θ} jumps from second excited state to Ground state in H-atom.

   (A) 1026 A° (B) 560 A°

   (C) 6011 A° (D) 512 A°

8. How many spectral lines are seen for hydrogen atom when electron jump from $n_2 = 5$ to $n_1 = 1$ in visible region?

   (A) 2 (B) 3

   (C) 4 (D) 5

9. Calculate the wavelength of the photon that is emitted when an electron in Bohr orbit n = 2 returns to the orbit n = 1 in the hydrogen atom

10. Calculate the wavelengths of the first line and the last line in the Lyman series of hydrogen atom

ANSWERS KEY

1. (D)
2. (A)
3. (A)
4. (D)
5. (A)
6. (A)
7. (A)
8. (B)
9. 121.6 nm
10. 121.6 nm and 91.2 nm

Note - If you have any query/issue

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