

ARJUNA (NEET)

STRUCTURE OF ATOM

DPP-8

- Calculate the wavelength associated with cricket ball of mass of 150 g travelling with a velocity of 25ms^{-1} .
(A) $1.766 \times 10^{-34}\text{ m}$ (B) $7.66 \times 10^{-9}\text{ m}$
(C) 4.8 m (D) $9.8 \times 10^{-4}\text{ m}$
- What will be the wavelength of wave associated with ball of mass 0.1 kg moving with a velocity of 10ms^{-1} ?
(A) $6.626 \times 10^{-9}\text{ m}$ (B) $6.626 \times 10^{-34}\text{ m}$
(C) $6.626 \times 10^{-36}\text{ m}$ (D) $6.626 \times 10^{-35}\text{ m}$
- Calculate the wavelength of matter wave associated with small ball of mass of 100 g travelling at a velocity of 35 ms^{-1} .
- A beam of helium atoms moves with a velocity of $2 \times 10^4\text{ ms}^{-1}$. Find the wavelength of particles constituting with the beam.
(A) 4.99 pm (B) 6.8 pm
(C) 9.8 pm (D) 4.2 pm
- Calculate the uncertainty in the velocity of an electron when the uncertainty in its position is $1.012 \times 10^{-12}\text{ m}$.
- Calculate the uncertainty in the position of a cricket ball of mass 150 g if the uncertainty in its velocity is $3.52 \times 10^{-24}\text{ ms}^{-1}$.
- What is the uncertainty in locating the position of an electron with speed 25ms^{-1} having uncertainty of 0.1%?
- The ionization energy of the electron in the lowest orbit of hydrogen atom is 13.6 eV. The energies required in eV to remove electron from three lowest orbits of hydrogen atom are
(A) 13.6, 6.8, 8.4 (B) 13.6, 10.2, 3.4
(C) 13.6, 27.2, 40.8 (D) 13.6, 3.4, 1.51
- $E_n = -313.6/n^2\text{ kcal/mole}$. If the value of $E = -34.84\text{ kcal/mole}$, to which value does 'n' correspond?
(A) 4 (B) 3
(C) 2 (D) 1
- Number of spectral lines in Balmer series when an electron return from 7th orbit to 1st orbit of hydrogen atom are
(A) 5 (B) 6
(C) 21 (D) 15

ANSWERS KEY

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| 1. (A) | 6. $\Delta x = 1 \text{ \AA}$ |
| 2. (B) | 7. $\Delta x = 2.317 \times 10^{-3} \text{ m}$ |
| 3. $1.893 \times 10^{-34} \text{ m}$ | 8. (D) |
| 4. (A) | 9. (B) |
| 5. $\Delta x = 5.72 \times 10^7 \text{ ms}^{-1}$ | 10. (A) |



Note - If you have any query/issue



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