

Worksheet: Structure of Atom

IB · Class 11 · Chemistry · 5 questions · 14 marks

Name: _____

Date: _____

Score: _____ / 14

Q1. Find the de Broglie wavelength of an electron moving at 2×10^6 m/s ($m = 9.1 \times 10^{-31}$ kg). [3 marks]

Q2. Write the four quantum numbers for the 3p electron of aluminium ($Z=13$). [3 marks]

Q3. Why is chromium's configuration $[\text{Ar}]4s1 3d5$ instead of $[\text{Ar}]4s2 3d4$? [2 marks]

Q4. Find the wavelength of the H-alpha line ($n=3$ to $n=2$) in the Balmer series. ($R_H = 1.097 \times 10^7 \text{ m}^{-1}$) [3 marks]

Q5. Calculate the uncertainty in position if the uncertainty in velocity is 0.001 m/s for an electron ($m = 9.1 \times 10^{-31}$ kg). [3 marks]
