

## Worksheet: Structure of Atom

West Bengal State Board · Class 11 · Chemistry · 5 questions · 14 marks

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Score: \_\_\_\_\_ / 14

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

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

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**Q3.** Why is chromium's configuration  $[\text{Ar}]4s^1 3d^5$  instead of  $[\text{Ar}]4s^2 3d^4$ ? [2 marks]

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**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]

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**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]

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