

INDIAN SCHOOL NIZWA  
WORK SHEET 2: CHEMISTRY  
CHAPTER-2 STRUCTURE OF ATOM

DATE: \_\_\_\_\_ NAME \_\_\_\_\_ CLASS: XI

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**I. 2 Marks question**

1. Which of the four quantum numbers( $n, l, m_l, m_s$ ) determine a) the energy of electron in a hydrogen atom and in a many electron atom b) size of the orbital c) shape of the orbital d) orientation of the orbital e) Spin of orbital.
2. What are the characteristic of electromagnetic radiation?
3. Define electromagnetic spectrum?
4. Which has higher energy: a photon of red light with a wavelength of  $7500\text{\AA}$  or a photon of green light with a wavelength of  $5250\text{\AA}$ ?
5. Explain Plank's Quantum theory.
6. Define threshold frequency and work function.
7. Differentiate between absorption spectrum and emission spectrum.
8. The approximate mass of an electron is  $10^{-27}\text{g}$ . Calculate the uncertainty in its velocity if the uncertainty in its position were of the order of  $10^{-11}\text{m}$ .
9. How Bohr's model explained about the line spectrum of hydrogen atom?
10. Calculate the wavelength of spectral line obtained in the spectrum of  $\text{Li}^{2+}$  in the Lyman spectrum from  $n=3$ .
11. Differentiate between orbit and orbital.

**II. 3 Marks questions**

12. Two particles A and B are in motion. If the wavelength associated with particle A is  $5 \times 10^{-8}\text{m}$ , calculate the wavelength associated with particle B if its momentum is half of that of A.
13. What are the observations found in Black body radiation and give the conclusion for the above observation?
14. The threshold frequency for photoelectric emission of electrons from a metal is  $3 \times 10^{15}\text{Joule}$ . If light of  $4000\text{\AA}$  wavelength is used, will the electrons be ejected or not.

**5 Marks questions**

15. Explain Bohr's atom model. What are its limitations?