INDIAN SCHOOL NIZWA - WORKSHEET

CHEMISTRY

CH:2 STRUCTURE OF ATOM

Name: _____ Date:_____ Class: XI Sec: ___

1. What are the characterisitics of electromagnetic radiations? Give an example.
2. Explain dual nature of light and matter.
3. Define threshold frequency and work function.
4. Differentiate between orbit and orbital.
5. 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?
6. State uncertainty principle and explain its significance.
7. What is the maximum number of electrons in
   a) principal shell
   b) s, p , d & f sub shells
   c) an orbital ?
8. What are quantum numbers? Describe briefly about quantum numbers.
9. What are the possible values of n, l and m for a 3d orbital ?
10. How many quantum numbers are required to specify an orbital?
11. What are degenerate orbitals?
12. Sketch the shapes of s,p and d orbitals.
13. Differentiate between absorption spectrum and emission spectrum.
14. Calculate the wavelength of spectral line obtained in the spectrum of Li^{2+} in the Lyman spectrum from n=3.
15. In building up of atoms, the filling of 4s orbitals occurs before 3d orbitals. Expalin .
16. Calculate the mass of a photon having wave length 3.6 A^0 [$1A^0 = 10^{-10}$ m]
17. The energy of an α particle is 6.8 x 10- 18 J. What will be the wave length associated with it?
18. The approximate mass of an electron is 10^{-27}g . Calculate the uncertainty in its velocity if the uncertainty in its position were of the order of 10^{-11}m.
19. The threshold frequency for photoelectric emission of electrons from a metal is 3.056×10^{-15}Joule. If light of $4000A^0$ wavelength is used , will the electrons be ejected or not.