**CLASS : XI**

**SUBJECT : CHEMISTRY**

**CHAPTER: STRUCTURE OF AN ATOM**

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| **Sr. No.** | **Knowledge Based** |  |
| 1. | Distinguish between photon and quantum. |  |
| 2. | What type of metals are used in photoelectric cells? Give an example |  |
| 3 | What is the significance of de Broglie relationship? |  |
| 4 | What was the importance of cathode ray tube? |  |
| 5 | Why was the Thompson model of an atom not accepted? |  |
| 6 | Draw the energy surface diagrams of s, p and d orbitals. |  |
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| **S. No.** | **Understanding Based** |  |
| 7. | In summer, we are advised not to wear black clothes. Why? |  |
| 8. | The two electrons in 1s orbital of He have antiparallel spin. Why they cannot have parallel spin? |  |
| 9 | How many orientations are possible for orbitals present in f subshell? |  |
| 10 | What is the significance of ψ2 ? |  |
| 11 | Find the number of quanta of radiations of frequency 4.67\*1013 /s. that must be absorbed in order to melt 5g of ice. The energy required to melt 1g of ice is 333J. |  |
| 12 | What observations were drawn from the observations of Rutherford expt? |  |
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| **S. No.** | **Application** |  |
| 13 | What will happen to the wavelength of a moving particle if its velocity is doubled? |  |
| 14 | What is the deviation from Aufbau Principle in case of La(Z=57) |  |
| 15 | The mass number of an element is twice its atomic number. If there are 4 e in 2p orbitals, write the elelctronic configuration and name of the element. |  |
| **S.No.** | **Value Based** |  |
| 16 | The complete designation of electrons in an atom is given with the help of four quantum numbers. They specify the shell, sub shell, and the orbital in which a particular electron is present.1. Which quantum no describes the electron spin?
2. What is the significance of this quantum number?
3. What might happen if two e in an orbital possess the same spin?
4. What values in life do you learn from this?
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| **S.No.** | **HOTS** |  |
| 17 | If an electron and proton when in motion have the same wavelength associated with each of them, which would be moving faster? |  |
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