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| **Karan Arora**  **R.L. Institute M: 9416974837**  **Class : XI**  **“SOME BASIC CONCEPTS OF CHEMISTRY + STRUCTURE OF ATOMS”** |

**Worksheet**

1. The following quantum number are possible for how many orbitals? n = 3 , l = 2 , m = + 2

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| a) 1 | b) 2 | c) 3 | d) 4 |

1. Which of the following element outermost orbital’s last electron has magnetic quantum number m = 0?

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| a) Na | b) O | c) Cl | d) N |

1. In hydrogen atom, energy of the first excited state is – 3.4 ev. Then find out the K.E. of the same orbit of H - atom

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| --- | --- | --- | --- |
| a) + 3.4 ev | b) + 6.8 ev | c) – 13.6 ev | d) + 13.6 ev |

1. Which of the following has maximum mass?

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| a) 0.1 gm atom of carbon | b) 0.1 mole NH3 |
| c) 6.022 x 1022 molecule of H2 | d) 1120 cm3 of CO2 |

1. 11.2 litre of a gas at STP weighs 14 gm. The gas could not be:

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| a) N2 | b) CO | c) B2H6 | d) N2O |

1. The maximum number of molecules is present in:

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| --- | --- |
| a) 15 L of H2 gas at STP | b) 5 L of N2 gas at STP |
| c) 0.5 gm of H2 gas | d) 10 gm of O2 gas |

1. How many moles are there in one atom?
2. How many moles, no. of atoms and no. of protons are in 360 gm glucose (C6H12O6).
3. Calculate the number of molecules present in 350 cm3 of NH3 gas at 273 K and 2 atmosphere pressure?
4. Find the number of protons, electrons and neutrons in (a) (b)
5. How many neutrons and protons are there in following nuclei?

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1. Calculate the wavelength of the spectral line in Lyman series corresponding to n2 = 3.
2. Write the correct orbital notations for each of the following sets of quantum numbers :

(a) n = 1 , l = 0 , m = 0 (b) n = 2 , l = 1 , m = 1 (c) n = 3 , l = 2 , m = + 1

1. Write down the quantum numbers n , l and m for the following orbitals :

(a) (b) (c) (f)

1. A compound contains : H = 4.07% C = 24.27% and Cl = 71.65%

Its molar mass is 98.96 g. What are its empirical and molecular formula?

1. Concentration of glucose in normal blood is 90 mg per 100 mL. What is the Molarity of the glucose in blood?
2. Hydrochloric acid is sold commercially as 12 M solution. How many moles and how many grams of HCl are in 300 mL of 12 M solution?
3. Calculate the Molarity of a 96% by mass H2SO4 solution, whose density is 1.78 g/cm3 ?