

ASSIGNMENT FOR CLASS – XI :

CHEMISTRY:

- Find the number of nodes in the following orbitals
a) 4p b) 3d c) 5s d) 4f
- How many electrons are possible all shells with $n+l = 5$?
- What atoms are indicated by the following configurations?
a) $[\text{He}]_2\text{S}^1$ b) $[\text{Ar}]_4\text{S}^23\text{d}^1$
- How many electrons in an atom may have the following quantum of numbers?
a) $n=4, l=0$ b) $n=3, m=-2$ c) $n=4, s=+1/2$ d) $n=5, l=3$
- Assign the reasons for the following:
 - Atomic size of 'Ga' is smaller than that of 'Al'
 - Ionisation enthalpy of Oxygen is less than that of Nitrogen.
 - Electron gain enthalpy of Chlorine is more negative than that of Fluorine.
 - The first ionization enthalpy of an atom is less than the second ionization enthalpy.
 - Electron gain enthalpies of Noble gases are positive.
- Write the actual electronic configuration of Chromium and Europium. Why are they different from the expected configuration (trend)?
- Write the set of four quantum numbers for
a) 20th electron in Vanadium b) 30th electron in Bromine
- Calculate the volume of Oxygen gas at STP that would be required to convert 5.2L of Carbon monoxide to Carbondioxide
- If 20.0g of CaCO_3 is treated with 20.0g of HCl, how many grams of CO_2 can be produced according to the reaction
$$\text{CaCO}_3(\text{S}) + 2\text{HCl}(\text{aq}) \longrightarrow \text{CaCl}_2(\text{aq}) + \text{H}_2\text{O}(\text{l}) + \text{CO}_2(\text{S})$$

Which is the Limiting reagent?
- A solution is prepared by dissolving 18.25g of NaOH in distilled water to give 200ml of solution. Calculate the molarity of the solution.
- A solution of Glucose in water is labeled as 10% (w/w). The density of the solution is 1.20gml^{-1} . Calculate the molality, molarity and mole fraction.
- Prepare a project report on any topic pertaining to the syllabus of Class XI.