



**Note:** - Submission Date is first week after January 11, 2021 or whenever the college will re-open.

Class: First Year

Subject: Chemistry

### **Assignment For Week-1**

**Q-1** Answer the following short questions:

- I. What is  $n + l$  rule?
- II. Define Hund's rule of maximum multiplicity?
- III. What are the defects of Bohr's atomic model?

**Q-2** Derive equation for the energy of electron in  $n$ th orbit of hydrogen atom?

**Q-3** What are quantum numbers? Explain its various types with brief description.

### **Assignment For Week-2**

**Q-1** Answer the following short questions:

- I. What is the difference between a sigma and pi bond?
- II. What is the geometry of  $AB_2$ -Type molecules?
- III. What is the difference between paramagnetic and diamagnetic substances?

**Q-2** What are postulates of VSEPR theory? Explain geometries of  $BF_3$ ,  $NH_3$  and  $PCl_5$  on the basis of VSEPR theory.

**Q-3** Define hybridization? Explain its various types with examples?

### **Assignment For Week-3**

**Q-1** Answer the following short questions:

- I. Derive the value and SI units of  $R$ .
- II. What is the effect of temperature and pressure on the density of gases?
- III. Define absolute zero? Give its value and graphical representation.

**Q-2** Derive Vander Waal's equation for real gases? Also give significance of Vander weal's constants.

**Q-3** Define and explain Graham's law of diffusion?