

B. Tech

I-Semester

Chemistry (BSC-102)

Time-1.5 Hours

Max. Marks: 15

Answer all the Questions

1. Explain the terms Polarization and Polarizability. How does it varies in a periodic table?(2)
2. How many fundamental modes of vibrations are possible for a linear diatomic molecule AB? (1)
3. What is the basic criteria for a nucleus to be magnetically (NMR) active? $\Delta s \neq 0$ (1)
4. What is MRI and give its applications? (2)
5. What do you mean by bathochromic shift and hypsochromic shift? (2)
6. Draw a well labeled PES diagram for HCN. Write down the applications of PES. (3)
7. What do you mean by the term diffraction and scattering? (2)
8. What do you mean by effective nuclear charge? Give Slater's rule to calculate the effective nuclear charge. (2)