

**Mula Education Society's
Arts, Commerce and Science College Sonai
Department of Chemistry
Assignment**

Class- SYBSc

Sem-III

Sub- Chemistry Paper-II (Inorganic and Organic Chemistry)

Mark-05

Section-I (Inorganic Chemistry)

Q.1 Answer the following.

1. What is stabilisation energy?
2. What is bond order in H_2^+ ion?
3. How many unpaired electrons present in Li_2 molecule.
4. Give MO electronic configuration of N_2 molecule.
5. How BMO is formed.
6. Define Chelating Ligand.
7. Define Coordination Number.
8. What is Labile Complex?
9. Define Bidentate ligand with example.
10. Define primary Valency.

Q.2 Attempt in brief the following.

1. Distinguish between BMOs and ABMOs.
2. Sketch MOs formed from combination of s and p atomic orbital.
3. Explain Non-existence of Be_2 molecule on the basis of MOT.
4. Draw the structure to show primary and Secondary valencies in $[Co(NH_3)_5Cl]$ and $[Co(NH_3)_4Cl_2]Cl$
5. Write formula for following complexes.
 - i) Potassium hexacyanoferrate(II)
 - ii) Hexaamminenickel(II) sulphate
 - iii) Potassium trioxalatoaluminate(III)

Section-II (Organic Chemistry)

Q.3 Answer the following.

1. Define Huckel's rule of aromaticity with example.
2. Benzene does not undergoes addition reaction. Explain.
3. In benzene all C-C bond length are identical. Explain.
4. Define markovnikov's rule. Give one example.
5. Define Saytzeff rule. Give one example.
6. Alcohols have higher boiling point than hydrocarbon of comparable molecular weight.
7. What are phenols? Write structure of picric acids
8. m-nitrophenol and p-nitrophenol have higher physical constant than o-nitrophenol.
9. m-nitrophenol and p-nitrophenol have higher physical constant than o-nitrophenol.
10. Phenol is acidic nature. Explain.

Q.4 Answer the following.

1. What are alcohols? Give the classification of alcohols. How will prepare ethyl alcohol from a) Acetaldehyde b) Ethylene
2. What is ether? How is diethyl ether prepared from – (a) Diazomethane (b) Ethyl chloride. What is the action of cold HI on it?
3. How will prepare benzene from a) Acetylene b) benzene sulphonic acid
4. What is electrophilic substitution reaction? Explain nitration and Sulphonation reaction
5. What is SN_1 reaction ? Discuss the mechanism SN_1 reaction with example.