

- e) What happens when 1,3-butadiene reacts with Br_2 ? 2½
- f) What happens when Acetylene is treated with 2½
 i) Ozone ii) Ammoniacal solution cuprous chloride
4. a) What are activating and deactivating groups? Describe influence of -OH group in Phenol. 5
- b) Discuss electrophilic substitution reaction with respect to nitration of benzene. 5
- OR**
- c) Discuss Friedel-Craft alkylation reaction in benzene. 2½
- d) How benzene can be prepared from 2½
 i) Phenol ii) Acetylene
- e) Explain directive influence of chlorine in chlorobenzene. 2½
- f) What is the directive influence of $-\text{CH}_3$ groups when directly attached to benzene. 2½
5. Attempt **any ten**. **1x10=10**
- i) Define heterolysis with example.
- ii) Define bond energy.
- iii) What are the factors affecting acidity of carboxylic acid?
- iv) Write the structure of Cis and trans form of 2-butene.
- v) Define - Racemic mixture.
- vi) What happens when 1,3-butadiene is treated with ethylene.
- vii) What happens when ethylene undergoes oxidation in presence of alkaline KMnO_4 ?
- viii) What is combustion? Give one example.
- ix) State Huckel's rule of aromaticity.
- x) What happens when Nitrobenzene is treated with conc. HNO_3 in presence of Conc. H_2SO_4 ?
- xi) Draw two possible Kekule's structure of benzene.
- xii) Define Diastereoisomers.
