

Paper-C3T (Inorganic)

Answer all-

2x5=10

1. Why ordinary acids can not oxidise Ag but do so in presence of iodide ion?
2. State Hund's rule.
3. Arrange BF_3 , BCl_3 , BBr_3 and BI_3 in their increasing order of acidity.
4. Between F_2 and Cl_2 , which one has more electron affinity?
5. State HSAB Principle.

Paper-C4T (Organic)

Answer any five-

2x5=10

1. What do you mean by buttressing effect? What is the most stable conformation of 1,2-difluoroethane?
2. Draw the potential energy diagram of n-butane along C2-C3 bond.
3. Why vinyl and aryl chloride cannot undergo nucleophilic substitution reaction?
4. Why in S_N^2 substitution reaction nucleophile approaches from the back side of the leaving group?
5. Arrange the $\text{S}_\text{N}1$ solvolysis rate of the following compounds:



6. During E2-elimination reaction the two eliminating group must be configurationally anti. Explain
7. $\text{CH}_3\text{CH}_2\text{CHBrCH}_3$ on treatment with NaOEt/EtOH yield both *cis*-2-butenen and *trans*-2-butene. How they are formed, which will be the major product? Why?
8. Among the given two compounds which one undergo elimination on treatment with base and why?

