Dr, Hamid Kafeel,M.V. College, Buxar

Organic reactions and mechanisms

1. Organic Reactions and Mechanisms• Organic reactions are chemical reactions involving organic compounds. The basic organic chemistry reaction types are addition reactions, elimination reactions, substitution reactions, pericyclic reactions, rearrangement reactions and redox reactions.• A reaction mechanism is the step by step sequence of elementary reactions by which overall chemical change occurs.

2. Nucleophilie• A reagent which can donate an electron pair in a reaction is called a nucleophile.• The name nucleophile means nucleous loving and indicates that it attacks regions of low electron density (positive centres) in the substrate molecule.• Nucleophiles are electron rich.• They may be negative ions including carbanions or neutral molecules with free electron pair.• A nucleophile can be represented by a by general symbol Nu:-• Examples• Cl-, Br-, I-, CN -, OH-, RCH2-, NH3, RNH2, H2O, ROH

3. Electrophiles• A reagent which can accept an electron pair in a reaction called an electrophile.• The name electrophile means electron-loving and indicates that it attacks regions of high electron density (negative centres) in the substrates molecule.• Electrophiles are electron deficient.• They may be positive ions including carbonium ions or neutral molecules with electron deficient centres• An electrophile can represented by E+• Examples• H+, Cl+, Br+, I+, NO2+, R3C+, +SO3H, AlCl3, BF3

4. Organic Reaction Mechanism• A reaction mechanism is the step by step sequence of elementary reactions by which overall chemical change occurs.• Although only the net chemical change is directly observable for most