

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Organic Chemistry)
Semester: III
Syllabus with Effect from: June - 2013

Paper Code: PS03CORC02	Total Credit: 4
Title Of Paper: Organic Synthesis - A Disconnection Approach	

Unit	Description in detail	Weightage (%)
I	Introduction and definition of disconnection, various terminology used in disconnection. One and two group disconnection, disconnection and synthesis of alcohols, olefins, simple ketones, acids and its derivatives, disconnections in 1,3- dioxxygenated skeletons, preparation of β -hydroxy carbonyl compounds, α,β - unsaturated carbonyl compounds, 1,3-dicarbonyls, 1,5-dicarbonyls and use of Mannich reaction	25%
II	Illogical Two group disconnection..: Disconnection and synthesis of β -hydroxy carbonyl compounds, 1, 2-diols, 1,4 and 1,6- dicarbonyl compounds. Pericyclic reactions..: Disconnections based on Diels-Alder reaction and its use in organic synthesis Functional group analysis: Strategy of saturated hydrocarbon synthesis, functional group addition to intermediates.	25%
III	Disconnection and synthesis of acyclic and cyclic hetero compounds: Synthesis of ethers, amines, nitrogen and oxygen containing five and six membered heterocycles. Synthesis of small ring compounds..: Special method for small rings preparations, synthesis of 3 and 4 membered ring compounds. Use of ketenes in organic synthesis, Radical reactions in organic synthesis.	25%
IV	Umpolung of reactivity..: Umpolung of carbonyl group, synthesis based on umpolung of carbonyl group – synthesis of 1,2, and 1,3 diketones, cyclic ketones etc. Protecting groups: Protection of organic functional groups, protecting reagents and removal of protecting groups. Synthesis of some complex molecules: Synthesis of Mesoporphyrin – IX, Cephalosporin C and Coenzyme A.	25%

Basic Text & Reference Books:-

- Designing Organic Synthesis – A Programmed Introduction to the Synthons Approach, Stuart Warren, John Wiley & Sons (1994).
- Organic Synthesis : The disconnection approach, Stuart Warren, John Wiley & Sons (1994).
- Selected Organic Synthesis, Ian Fleming, John Wiley & Sons (1977).

