



End Semester Examination – Nov/Dec – 2016

Code : 15CH3020

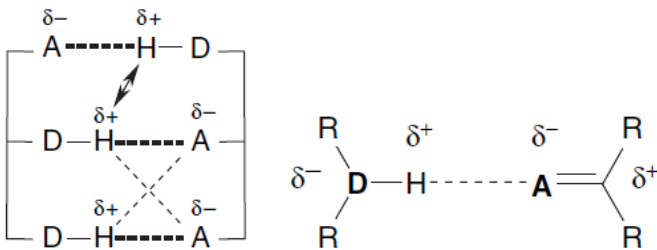
Sub. Name : Supramolecular Chemistry and Green Chemistry

Semester : 2016-17 ODD

Duration : 3hrs

Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Draw the structures related to weak interactions mentioned below and arrange them in the ascending order of their bond energy. Covalent bond, hydrogen bond, ion-ion, ion-dipole, pi interaction, hydrophobic, dipole- dipole, metal-ligand, induce dipole- induced dipole, induced dipole- dipole, Halogen bond	CO1	15
	b.	Build few supramolecular assemblies using the following schematic representations. 	CO2	5
(OR)				
2.	a.	Define the following concepts and illustrate with one Example a) Self Assembly , b) High dilution synthesis, c) Chelate effect, d) Co operativity, d) Binding Constant	CO1	15
	b.	Differentiate clathrate-clathrate, cavitand cavitate with schematic diagram and an example	CO2	5
3.	a.	Define the following concepts and illustrate with one Example a) Complementarity , b) Pre-organisation, c) Molecular recognition, d) Lock-key model, d) Induced fit model	CO1	20
	(OR)			
4.	a.	Discuss the Host-guest Chemistry of following Molecules a) Calixerene b) Cucurbituril c) Crown Ether d) Cryptand e) Cyclodextrin	CO1	15
	b.	Differentiate macrocyclic and acyclic hosts with few examples. Discuss their stability	CO2	5
5.	a.	Justify the Nobel prize-2016 in chemistry awarded to Prof Jean Pierre Sauvage, Sir Fraser Stoddart and Prof. B L Feringa, for their contribution towards the development of Molecular machines	CO1	15

	b.	Explain the structure and function of Zeolite	CO2	5
(OR)				
6.	a.	Write a note on the following f) Molecular machine g) Molecular Motor h) Molecular Shuttle i) Molecular switch j) Molecular Sensor	CO1	15
	b.	Discuss the various types of Molecular logic gates	CO2	5
7.	a.	Discuss the mechanism of supramolecular catalysis	CO1	15
	b.	Discuss the role Crown ethers as Phase transfer catalyst	CO2	5
(OR)				
8.	a.	Write a note on the following research group's contribution in supramolecular catalysis k) Reebek l) Sanders m) Fujita n) Raymond o) Breslow	CO1	20
<u>Compulsory:</u>				
9.	a.	Define Green chemistry. Discuss the Principles of Green Chemistry with examples	CO2	20

ALL THE BEST