

DEPARTMENT OF CHEMISTRY
FACULTY OF SCIENCE AND HUMANITIES
SRM UNIVERSITY, KATTANKULATHUR

LESSON PLAN

Academic year 2017 – 18

Program : B.Sc Chemistry
 Subject Title : General Chemistry - III
 Subject Code : UCY 15301

Total No. of hours : 60
 Semester : III

UNIT No. & Title	TOPICS	LECTURE NO.	REFERENCE BOOKS
UNIT – I Chemistry of benzene and other benzenoid compounds	Structure of benzene	1	1. Morrisson R.T. and Boyd., (1976). Organic chemistry 6 th Edition, Newyork. 2. Bahl B.S. and Arun Bahl, (1997): Advanced Organic chemistry, 12 th Edition, Sultan Chand & Co, New Delhi.
	General methods of preparation of benzene	2, 3	
	Electrophilic substitution reaction mechanisms of benzene	4	
	Nitration , sulphonation and halogenation of benzene	5, 6	
	Friedal Craft's alkylation and acylation	7	
	Orientation and reactivity of substituted benzenes	8	
	Polyaromatic hydrocarbons - Introduction, Preparation, properties and uses of naphthalene	9, 10	
	Preparation, properties and uses of anthracene and phenanthrene	11, 12	
UNIT – II Chemistry of alcohols, phenols and ethers	Nomenclature & classification	13, 14	1. Morrisson R.T. and Boyd., (1976). Organic chemistry 6 th Edition, Newyork. 2. Bahl B.S. and Arun Bahl, (1997): Advanced Organic chemistry, 12 th Edition, Sultar Chand & Co, New Delhi.
	Preparation of alcohols, properties and uses	15, 16	
	Chemistry of glycols & glycerol's, preparation, properties and uses.	17, 18	
	Mono, di and tri hydric phenols – preparations, properties and uses	19, 20	
	Aromatic electrophilic substitution reaction mechanism	21, 22	
	Theory of orientation and reactivity	23, 24	
UNIT- III Chemistry of group 13, 14 & 15 elements	General characteristics of boron group elements with reference to electronic configuration and oxidation states	25, 26	1. Puri B.R., Sharma L.R., Kalia K.K. (1993). Principles of Inorganic chemistry. 23 rd edition, Shoban Lal Nagin Chand & Co, New Delhi. 2. Lee J.D., (2006) : Concise of Inorganic Chemistry, Black well Science, UK.
	Metalloids and inert pair effect	27, 28	
	Diagonal relationship between B and Si	29, 30	
	Diborane structure	31, 32	
	Compounds of boron	33, 34	
	Compounds Boric acid and borazole	35, 36	

UNIT - IV Chemistry of Carbon and Nitrogen elements	General characteristics of Carbon group elements with reference to electronic configuration	37, 38	1. Puri B.R., Sharma L.R., Kalia K.K. (1993). Principles of Inorganic chemistry. 23 rd edition, Shoban Lal Nagin Chand & Co, New Delhi. 2. Lee J.D., (2006) : Concise of Inorganic Chemistry, Black well Science, UK.
	Oxidation states, metallic character, inert pair effect and catenation	39, 40	
	Allotropy – structure of graphite and diamond	41, 42	
	General characteristics of Nitrogen group elements	43, 44	
	Unique features of nitrogen from the rest of the family	45, 46	
UNIT - V Thermo dynamics I	Industrial preparation of ammonia, hydrazine and hydroxylamine	47, 48	1. Glasstone S., Lewis D., (1960) : Elements of Physical chemistry, Mac Milan & Co Ltd, London. 2. Puri B.R., Sharma L.R., Pathania M.S., (1993) : Principles of Physical chemistry. 23 rd edition, Shoban Lal Nagin Chand & Co, New Delhi.
	Chemical thermodynamics – System - surroundings – isolated, closed and open systems - homogenous, heterogenous.	49, 50	
	State of the system – Intensive and extensive properties – Thermodynamics process – cyclic process – reversible and irreversible process - isothermal & adiabatic process. State and path functions	51,52	
	Work of expansion at constant pressure and free expansion- First law of thermodynamics	53, 54	
	statement- definition of internal energy (U), enthalpy(H) and Heat capacity – U & H as thermodynamic properties	55, 56	
	Relationship between cp and cv	57, 58	
		59, 60	

STAFF DETAILS

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 HOD/Chemistry