

## LESSON PLAN

**Name of Faculty : Sanjay Sigger**

**Discipline-TEXTILEPROCESSING**

**Semester : 3 rd**

**Subject : PHYSICAL AND ORGANIC CHEMISTRY**

**Lesson plan duration : 15WEEK**

**Work load (lecture / practical) per week (in hours):Th = 3 per week/pr=one(of three periods)**

WEEK	THEORY		PRACTICAL	
	Lecture day	TOPIC (INCLUDING ASSIGNMENT/TEST)	Practical day	TOPIC
1st	1	Colloids - Introduction, types of colloidal solutions, characteristics of colloidal solutions	1st	Detection of Nitrogen,
	2	(Mechanical, optical, electrical) coagulation of solution		
	3	- Schulze-Hardy law, Protective colloids. Gold number, Emulsions and Gels, application of colloids. Equivalent wt.,		
2nd	4	Atomic wt. Their relationship, concentration of solution- Molarity, Molality, Normality	2nd	Detection of, Sulphur
	5	Kinetics of chemical Reactions Introduction, factors affecting rate of reaction,		
	6	difference between order and molecularity of reaction		
3rd	7	Kinetic equations of different orders.	3rd	Detection of Chlorine
	8	Catalysis - Introduction, types of catalysis.		
	9	characteristics of catalytic reaction, Promotors, Auto catalysis		
4th	10	Theory of catalysis, Acid-base catalysis, Enzyme catalysis.,	4th	1 st Sessional test
	11	TEST		
		TEST		

	12			
5th	13	test discussion	5th	Detection of Bromine, and iodine in organic compounds.
	14	Chemical Equilibrium Concept of reversible reactions, chemical equilibrium and its characteristics.		
	15	concentration, Pressure and temperature Application of Le-chatelier's principle in industry.		

WEEK	THEORY		PRACTICAL	
	Lecture day	TOPIC (INCLUDING ASSIGNMENT/TEST)	Practical day	TOPIC
6th	16	Acids and Bases: - Concept of acid and bases- (1) Arrhenius concept (2) Bronsted loway	6th	Determination of functional groups in the given organic compounds (by any chemical test)
	17	(3) Lewis concept, relative strength of acid and bases.		
	18	Concept of pH and its measurement by pH meter, pH scale, Relation between pH and pOH, concept of buffers and mechanism of buffer action.		
7th	19	Detection of elements in organic compounds: Carbon, hydrogen, nitrogen, Sulphur,	7th	Sessional test
	20	halogens and oxygen. Detection of functional groups.		
	21	Test discussion		

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8th	2 2		8th	To measure pH of a solution by pH meter
	2 3	Detection of elements in organic compounds: Carbon, hydrogen, nitrogen, Sulphur, halogens and oxygen. Detection of functional groups		
	2 4	alcohols, amines, aldehydes, ketones, carboxylic acids, formic acid		
9th	2 5	acetic acid, oxalic acid, urea, glycerol, carbon tetra chloride	9th	To measure pH of a solution by pH meter
	2 6	Aromatic compounds - Introduction to coal and petroleum as sources of aromatic compounds, properties and uses of aromatic, hydrocarbon		

	2 7	benzene and toluene, halogen derivatives, hydroxy compound, sulphonic acids		
10th	2 8	, nitro compounds amino compounds, diazonium compounds, carboxylic acids and their derivatives.	10th	Volumetric exercises involving redox reactions using potassium permagnate and potassium chromate as standards
	2 9	Fats, oils, soaps and detergents Introduction to fats and oils, their sources,		
	3 0	, chemical structure and composition		

WEEK	THEORY		PRACTICAL	
	Lecture day	TOPIC (INCLUDING ASSIGNMENT/TEST)	Practical day	TOPIC
11st	31	physical and chemical properties and their analysis,	11th	3 rd sessional test
	32	Introduction to soap and detergents, their chemical composition		
	33	test		
12nd	34	Test discussion	12nd	Volumetric exercises involving redox reactions using potassium permagnate and potassium chromate as standards
	35	Test discussion		
	36	mechanism of cleaning action of soaps and their limitations..		
13rd	37	Types of detergents, difference between soap and detergent	13rd	To measure the viscosity of an oil by viscometer.
	38	REVISION OF FIRST CHAPTER		
	39	REVISION OF SECOND CHAPTER		
14th	40	REVISION OF THIRD CHAPTER	14th	To measure the viscosity of an oil by viscometer.
	41	REVISION OF FOURTH CHAPTER		
	42	REVISION OF FIFTH CHAPTER		
15th	43	REVISION OF SIXTH CHAPTER	15th	Practical check
	44	REVISION OF SEVENTH CHAPTER		

