

LESSON PLAN FOR EVEN SEM SESSION 2017-18

Name of the Assistant Professor : Dr. Mahesh Kumar

Class and Section : M.Sc. II Sem

Subject Lesson Plan : Physical Chemistry Theory (Day 2, 3) and Practical (Day 1,3)

UNIT/PART I	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 1-1-18	.....	Practical*
DAY2 DATE 2-1-18	Revision of Basic Concepts	.....
DAY3 DATE 3-1-18	Mechanism of free-radical and cationic polymerization	Practical*
DAY4 DATE 8-1-18	.....	Practical*
DAY5 DATE 9-1-18	Mechanism of anionic and coordination polymerization	.....
DAY6 DATE 10-1-18	Kinetics of free-radical and cationic polymerization	Practical*
DAY7 DATE 15-1-18	.....	Practical*
DAY8 DATE 16-1-18	Kinetics of anionic polymerization	.....
DAY9 DATE 17-1-18	Kinetics of coordination polymerization	Practical*
DAY10 DATE 22-1-18	HOLIDAY	
DAY11 DATE 23-1-18	SPORTS DAY	
DAY12 DATE 24-1-18	HOLIDAY	
UNIT/PART II	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 29-1-18	.....	Practical*
DAY2 DATE 30-1-18	Comparison between step-growth and chain polymerization Mechanism of step-growth polymerization	.....
DAY3 DATE 31-1-18	HOLIDAY	

DAY4 DATE 5-2-18	.....	Practical*
DAY5 DATE 6-2-18	Kinetics of step-growth polymerization Molecular mass of polymers Significance of average molecular mass	.....
DAY6 DATE 7-2-18	Poly-dispersity, Molecular mass distribution curves	Practical*
DAY7 DATE 12-2-18	.....	Practical*
DAY8 DATE 13-2-18	HOLIDAY	
DAY9 DATE 14-2-18	Determination of molecular mass by osmometry	Practical*
DAY10 DATE 19-2-18	TEST	Practical*
DAY11 DATE 20-2-18	Determination of molecular mass by viscosity methods, Fire resistant polymers	.....
DAY12 DATE 21-2-18	Electrically conducting polymers Liquid crystal polymers	Practical*
UNIT/PART III	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 26-2-18	.....	Practical*
DAY2 DATE 27-2-18	Nuclear stability and binding energy Mass and binding energy	.....
DAY3 DATE 28-2-18	HOLIDAY	.....
DAY4 DATE 5-3-18	.....	Practical*
DAY5 DATE 6-3-18	Nuclear fission and nuclear fusion, fission cross section	.....
DAY6 DATE 7-3-18	Chain fission, fission product	Practical*
DAY 7 DATE 12-3-18	.....	Practical*
DAY8 DATE 13-3-18	Fission yield	.....
DAY9 DATE 14-3-18	Interaction of nuclear radiation with matter	Practical*
DAY10 DATE 19-3-18	.....	Practical*
DAY11 DATE 20-3-18	Proportional detector (Principle, construction & Working)	.....
DAY12 DATE 21-3-18	Geiger –Muller detector (Principle, construction & Working)	.....

UNIT/PART IV	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 26-3-18	.....	Practical*
DAY2 DATE 27-3-18	Scintillation counter (Principle, construction & Working)	.....
DAY3 DATE 28-3-18	Units for measuring radiation absorbed, radiation dosimetry	Practical*
DAY4 DATE 2-4-18	.....	Practical*
DAY5 DATE 3-4-18	Radiotracer technique, Activation analysis	.....
DAY6 DATE 4-4-18	Isotope dilution technique	Practical*
DAY7 DATE 9-4-18	.....	Practical*
DAY8 DATE 10-4-18	Radiochromatography	.....
DAY9 DATE 11-4-18	Radiometric titrations	Practical*
DAY10 DATE 16-4-18	TEST	Practical*
DAY11 DATE 17-4-18	Neutron Absorptiometry and some Application	.....
DAY12 DATE 18-4-18	HOLIDAY	

**All practical are performed at a time by sub groups on rotation basis as per given in syllabus.*

LESSON PLAN FOR EVEN SEM **SESSION 2017-18**

Name of the Assistant Professor : Dr. Mahesh Kumar
Class and Section : BSc VI sem (Section B & C)
 Section B Th. Days: 1,2 & Section C Th. Days: 5,6
 Practical Gp T₆ & T₈
Subject Lesson Plan : Physical Chemistry Theory and Practical

UNIT/PART I	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 1-1-18	Methods of expressing concentrations of solutions	.....
DAY2 DATE 2-1-18	Dilute solutions and Raoult's law	.....

DAY3 DATE 4-1-18	.....	Introduction to qualitative analysis
DAY4 DATE 5-1-18	Methods of expressing concentrations of solutions	.....
DAY5 DATE 6-1-18	Dilute solutions and Raoult's law	Introduction to qualitative analysis
DAY6 DATE 8-1-18	Ideal and non-idea solutions	.....
DAY7 DATE 9-1-18	Colligative property: Relative lowering of vapour pressure	.....
DAY8 DATE 11-1-18	.....	Qualitative analysis (Practical)
DAY9 DATE 12-1-18	Ideal and non-idea solutions	.....
DAY10 DATE 13-1-18	Colligative property: Relative lowering of vapour pressure	Qualitative analysis (Practical)
DAY11 DATE 15-1-18	Elevation in boiling point	
DAY 12 DATE 16-1-18	Depression in freezing point	.....
DAY13 DATE 18-1-18	.....	Qualitative analysis (Practical)
DAY14 DATE 19-1-18	Elevation in boiling point	.....
DAY15 DATE 20-1-18	Depression in freezing point	.....
DAY16 DATE 22-1-18	HOLIDAY	
DAY17 DATE 23-1-18	SPORTS DAY	
DAY18 DATE 25-1-18	.....	Qualitative analysis (Practical)
DAY19 DATE 26-1-18	HOLIDAY	.....
DAY 20 DATE 27-1-18	Osmotic Pressure	Qualitative analysis (Practical)
UNIT/PART II	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 29-1-18	Osmotic Pressure	.....
DAY2 DATE 30-1-18	Thermodynamic derivation of relation between amount of solute and elevation in boiling point	.....
DAY3 DATE 1-2-18	.....	Qualitative analysis (Practical)

DAY4 DATE 2-2-18	Thermodynamic derivation of relation between amount of solute and elevation in boiling point	.....
DAY5 DATE 3-2-18	Thermodynamic derivation of relation between amount of solute and depression in freezing point	Qualitative analysis (Practical)
DAY6 DATE 5-2-18	Thermodynamic derivation of relation between amount of solute and depression in freezing point	.....
DAY7 DATE 6-2-18	Abnormal Mol. Mass and van't Hoff factor	.....
DAY8 DATE 8-2-18	.....	Qualitative analysis (Practical)
DAY9 DATE 9-2-18	ASSIGNMENT	.....
DAY10 DATE 10-2-18	HOLIDAY	
DAY11 DATE 12-2-18	Applications in calculating molar masses of normal, dissociated and associated solutes in solution	.....
DAY12 DATE 13-2-18	Introduction to Photochemistry	.....
DAY13 DATE 15-2-18	.....	Qualitative analysis (Practical)
DAY14 DATE 16-2-18	Abnormal Mol. Mass and van't Hoff factor	.....
DAY15 DATE 17-2-18	Applications in calculating molar masses of normal, dissociated and associated solutes in solution	Qualitative analysis (Practical)
DAY16 DATE 19-2-18	Interaction of radiation with matter Difference between thermal and photochemical processes with examples	.....
DAY17 DATE 20-2-18	HOLIDAY	
DAY18 DATE 22-2-18	.....	Qualitative analysis (Practical)
DAY19 DATE 23-2-18	Introduction to Photochemistry	.....
UNIT/PART III	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 24-2-18	Interaction of radiation with matter Difference between thermal and photochemical processes with examples	Qualitative analysis (Practical)

DAY2 DATE 26-2-18	Laws of photochemistry: Grotthus-Drapper law, Stark-Einstein law	.....
DAY3 DATE 27-2-18	TEST	
DAY4 DATE 28-2-18	HOLIDAY	
DAY5 DATE 1-3-18	HOLIDAY	
DAY6 DATE 2-3-18	HOLIDAY	
DAY7 DATE 3-3-18	HOLIDAY	
DAY8 DATE 5-3-18	Lumeniscence, fluorescence and phosphorescence	.....
DAY9 DATE 6-3-18	Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing)	.....
DAY10 DATE 8-3-18	.....	Qualitative analysis (Practical)
DAY11 DATE 9-3-18	Laws of photochemistry: Grotthus-Drapper law, Stark-Einstein law	.....
DAY12 DATE 10-3-18	NUMERICALS	Qualitative analysis (Practical)
DAY 13 DATE 12-3-18	Quantum yield and its calculation using suitable examples, Photosensitized reactions-energy transfer processes (simple examples)	.....
DAY14 DATE 13-3-18	Statement and meaning of the terms – phase, component and degree of freedom	.....
DAY15 DATE 15-3-18	.....	Qualitative analysis (Practical)
DAY16 DATE 16-3-18	Lumeniscence, fluorescence and phosphorescence	.....
DAY17 DATE 17-3-18	Jablonski diagram depicting various processes occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing)	Qualitative analysis (Practical)
DAY18 DATE 19-3-18	Phase Rule & thermodynamic derivation of Gibbs phase rule	.....
DAY19 DATE 20-3-18	Phase equilibria of one component system –Example – water system	.....

DAY20 DATE 22-3-18	TEST	Qualitative analysis (Practical)
DAY 21 DATE 23-3-18	HOLIDAY	
DAY 22 DATE 24-3-18	Quantum yield and its calculation using suitable examples, Photosensitized reactions-energy transfer processes (simple examples)	Qualitative analysis (Practical)
UNIT/PART IV	TOPIC	
	THEORY	PRACTICAL
DAY1 DATE 26-3-18	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system	.....
DAY2 DATE 27-3-18	Desilverisation of lead	.....
DAY3 DATE 29-3-18	HOLIDAY	
DAY4 DATE 30-3-18	Statement and meaning of the terms – phase, component and degree of freedom	.....
DAY5 DATE 31-3-18	Phase Rule & thermodynamic derivation of Gibbs phase rule, Phase equilibria of one component system –Example – water system	Qualitative analysis (Practical)
DAY6 DATE 2-4-18	Numerical for Phase, Component & D.O.F.	.....
DAY7 DATE 3-4-18	TEST	.....
DAY8 DATE 5-4-18	.....	Qualitative analysis (Practical)
DAY9 DATE 6-4-18	Phase equilibria of two component systems solid-liquid equilibria, simple eutectic Example Pb-Ag system, Desilverisation of Pb	.....
DAY10 DATE 7-4-18	Introduction and need of statistical mechanics, Thermodynamic probability	Qualitative analysis (Practical)
DAY11 DATE 9-4-18	Introduction and need of statistical mechanics, Thermodynamic probability	.....
DAY12 DATE 10-4-18	Maxwell Boltzmann distribution statistics, Born oppenheimer approximation	.....
DAY13 DATE 12-4-18	.....	Qualitative analysis (Practical)
DAY14 DATE 13-4-18	Maxwell Boltzmann distribution statistics, Born oppenheimer approximation	.....

DAY15 DATE 14-4-18	HOLIDAY	
DAY16 DATE 16-4-18	Partition function and its physical significance, Factorization of partition function	.....
DAY17 DATE 17-4-18	Numericals	.....
DAY18 DATE 19-4-18	.....	Qualitative analysis (Practical)
DAY19 DATE 20-4-18	Partition function and its physical significance, Factorization of partition function	.....