

K.T.S.P. Mandal's

Sahebraoji Butte Patil Mahavidyalaya, Rajgurunagar.

Teaching Plan - 2019-20 Class: S. Y. B. Sc. Sem.-I

Name of Paper: Physical & Analytical Chemistry (Paper I)

No. of Lectures allotted per week: 04

Name of Teacher : Prof. Kolhe M. P.

Month	Chapter	Topic Covered	Lect.
July-19	Elementary chemical Kinetics	Introduction to chemical Kinetics, molecularity & Order of reaction, reaction rates, rate laws, rate constant & its significance. Integrated rate law expression & its characteristics –first order, second order(single reactant,two reactant involved),examples of 1 st & 2 nd order reaction,pseudo molecular reactions,factors affecting rate of reaction,measurement of rate of reaction,numericals. Assignment No-1	10L
Aug-19	Photo-chemistry	Introduction,thermal reactions & photochemical reactions, law of photochemistry,quantum yield, measurement of quantum yield,types of photochemical reactions- photosynthesis, photolysis, photocatalysis, photosensitization,photo-physical processes- fluorescence,phosphorescence,quenching,chemiluminescence,numerical. Assignment No-2 Assignment No-2	10L
Sept - 19	Distribution Law	Nernst distribution Law, statement & thermodynamic proof of Nernst distribution Law, association & dissociation of solute in solvent, application of distribution Law,Numericals Assignment No-3 Internal Test No-1	4L
July-19	Introduction to Analytical Chemistry	Introduction,chemical analysis,application of chemical analysis,sampling ,types of analysis, common techniques, instrumental methods ,other techniques, factors affecting on choice of method Assignment No-4	3L

Aug - 19	Errors in Quantitative Analysis	Introduction, Error, accuracy, precision, methods of expressing accuracy & precision, classification of errors ,significant figures & computation, distribution of random errors ,mean & standard deviations ,reliability of results, Numericals Assignment No-5	5L
Sept - 19	Inorganic Qualitative Analysis	Basic principle ,common ion effect, solubility, solubility product, preparation of original solution, classification of basic radicals in groups ,separation of basic radicals, removal of interfering anions (phosphate & borate) ,detection of acidic radicals Assignment No-6	8L
Oct- 19	Analysis of Organic Compound s (Qualitative & Quantitative)	(A) Qualitative: Types of organic compounds , characteristic tests & classifications, reaction of different functional groups ,analysis of binary mixtures. (B) Quantitative: i) Analysis : estimation of C,H,(O) by combustion tube,detection of nitrogen,sulphur,halogen &phosphate by Lassigene's test. ii) Estimation of nitrogen by Duma's , Kjeldahl's method,estimation of halogen,Sulphur &phosphate by carious method. iii) Determination of empirical & molecular formula,Numerical problems. Assignment No-1	8L

Kolhe
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Dept. of chemistry