M.Sc. Chemistry (Final) Semester IV

Physical Chemistry (Special) Paper-XVII

Prof. A. Pal

Period: 16.02.2015 to 21.02.2015.

Topics

(1) Average end-to-end distance,
(2) Average radius of gyration of polymer chains
(3) Statistical distribution of end-to-end dimensions
(4) Freely jointed chain in three dimensions
(5) Influence of bond restrictions

PROF. R.C. KAMBOJ

Department of Chemistry, Kurukshetra University, Kurukshetra

Syllabus content* scheduled to be taught to the Students of M. Sc. 4th Sem. (Organic Spl.) in the third week of February, 2015 (from Feb. 16-Feb 21, 2015) is as under:

Stork Enamine Synthesis

- **Description**
- **Historical Perspective**
- **Mechanistic considerations**
- **Variations and Improvements**
- **Synthetic Utility**

Sharpless Asymmetric Epoxidation

- **Discovery**
- **Definition**
- **Mechanistic considerations**
- **Factors influencing the outcome**
- **Applications**

Specificity of Enzymes

- **Types**
- **Variations**

- **Parameters**

Theories of Enzyme Action

- **Lock and Key theory**
- **Induced-Fit Hypothesis.**

*The completion of the proposed syllabus shall depend upon the discussion/questions and other deliberations in the class.

For any query pl contact;

Prof R C Kamboj
Room No. 20, Dept of Chemistry,
K U Kurukshetra-136119

Prof. N. Raghav

Lesson Plan (16.02.2015-21.02.2015)

RESERPINE

- Pharmacological action
- Structure elucidation
  - Nature of O-atom
  - Nature of N-atom
  - Nature of Nucleus involving the following techniques
    - UV
    - Se-dehydrogenation
    - KOH fusion
    - Synthesis

Lesson Plan of Prof. Ranjana Aggarwal for the week Feb.16-22, 2015

-
- **M.Sc.(II Sem.) Section A Aromatic Electrophilic Substitution: Orientation and reactivity of monosubstituted benzenes.**
- **M.Sc.(II Sem.) Section B Neighbouring Group Participation and Carbocation Rearrangements: Neighbouing group participation by sigma bonds.**
- **M.Sc. IV Sem. Retrosynthetic Analysis: One group C-X disconnection.**

Prof. Kiran Singh

Lesson Plan (16.02.2015 – 21.02.2015)

Glass Membrane Electrodes –

- Potentiometric determination of sodium ions in the given sample

Liquid Membrane Electrodes –

- An Introduction

Prof. Gyan P. Dubey

Topics for 16-21 Feb' 2015 in M.Sc. Final

Composites, Products, Constituents, Matrices, Reinforcements, Physical properties.

Dr. HARDEEP ANAND

M.Sc. Chemistry (Previous) Semester II
Physical Chemistry (General) Paper VI

Quantum Mechanics - I

Lesson Plan for 16th to 21st February, 2015

1. Normalization of the wave function for the particle in one dimensional box.
2. Orthogonality of wave functions.
3. Wavelength of the ψ waves Analogy with Vibrations of a Stretched String.
4. Forms of the wave function.
5. Appearance of nodes.
6. Symmetry of the wave function – Concepts of symmetric and antisymmetric wave functions.
7. Quantum-mechanical treatment for the particle in a Three-Dimensional box.

M.Sc. Chemistry (Final) Semester IV
Physical Chemistry (Special) Paper XX

Liquid Crystals

Lesson Plan for 16th to 21st February, 2015

1. Important organic compounds forming liquid crystals
2. Positional order and bond orientational order of Liquid Crystals
3. Nematic and smectic mesophases. The molecules constituting the same
4. Smectic to Nematic transition and clearing temperatures.
5. Cholesteric Liquid Crystals

Lesson plan Ashwani Kumar

13.02.2015

Class :M.Sc Chemistry

Semester: IInd

Paper : V

Section: D

Topic **Higher boranes**

In continuing higher boranes, **pentaborane (9)** will be discuss in the next lecture. In that its chemical properties will be discuss. After that methods of synthesis, structure and bonding in **pentaborane (11)** will be discuss.

Class :M.Sc Chemistry

Semester: IV

Paper : XVII

Section: A

Topic **Errors and Evaluation**

In next lecture, various types of errors and their sources will be discussed. In that **Systematic errors** their origin and how they can be minimized will be discuss.

Dr.Ashwani

Asstt.Prof.

Department of chemistry

K.U.K

Schedule of the topics to be taught in M. Sc. Chemistry (Organic Chem., 4th Semester)

by Dr Suresh Kumar (From 16-02-15 to 21-02-15)

Paper	**Date**	**Topic**
Organic-XX **4th Semester**	**19-02-15**	**Antinoeplastic Drugs** • Types • General mechanism of action • Synthesis of Carmustine
Organic-XVII **4th Semester**	**20-02-15**	**Protective group** • Protection of amino functional group • Carbamates as amino protective group • Amide as amino protective group
Organic-XVIII **4th Semester**	**21-02-15**	**Flavanoids** • Nomenclature of Flavanoids • General method of Structure determination

Schedule of the topics to be taught in M. Sc. Chemistry (Organic Chem., 2nd Semester) by Dr Raj Kamal.

Paper	Date	Topic
Organic-VII 2nd Semester	16-02-15 to 21-02-15	**Electrophilic Aromatic Substitution** • Friedel-Crafts Alkylation and Acylation reactions

Schedule of the topics to be taught in M. Sc. Chemistry (Organic Chem., 2nd Semester & 4th semester) by

Dr Parvin Kumar

Paper	Date	Topic
Organic-VII 2nd Semester	16-02-15 to 21-02-15	• Pinacol-pinacolone rearrangment
Organic-XIX 4nd Semester	16-02-15 to 21-02-15	• Comparative Studies of 1,3 and 1,2-azoles

Dr. Ritu

Lesson plan for the week 16-02-2015 to 21-02-2015

Topic: Anodic stripping voltammetry and cyclic voltammetry

- **Instrumentation, Working and Application of Anodic stripping voltammetry and cyclic voltammetry**

Lession plan of **Dr. Sohan Lal** for next week

M.Sc. (Prev.)

Kinetics of cationic and anionic polymerization

Mechanism of coordination polymerization

M.Sc. (Final)

Basics of Differential Scanning Calorimetry (DSC)

Power compensated DSC, Heat flux DSC and their instrumentation

Factors affecting DSC and application of DSC

Lesson Plan (16.02.2015-21.02.2015) of Monika

Chromatography

High Performance Liquid Chromatography (HPLC)

- Introduction
- Principal
- Types
- Instrumentation
- Experimental technique
- Factors affecting HPLC
- Retention time
- Applications

Ravinder Kaur

Lesson Plan (16.02.2015-21.02.2015)

Paper VIII

Enzymes

Enzyme Kinetics-

- Derivation of Line weaver-Burk equation from Michaelis-Menten equation
- Michaelis-Menten and Lineweaver-Burk plots

Enzyme inhibitors-

- Introduction
- Types

Paper XIX

Stability testing of new drug substances and products

Drug substance

- Criteria
- Storage conditions
- Long term testing
- Accelerated testing
- Frequency
- Evaluation
- Labelling

Lesson Plan for the week 16th-21th Feb, 2015

Teacher Name: Tilak Raj

Designation: Assistant Professor(on contract basis)

Topic: Sewage Treatment (M.Sc. 4th Sem.)

- Nitrogen cycle
- Ammonification
- Nitrification
- Denitrification

Topic: Electronic Spectra (M.Sc. 2nd Sem)

- Term Symbol
- Spin-Spin coupling
- Spin-Orbit coupling
- Vector Diagram for P^2,P^3,D^2

Lesson Plan for the week 16th-21th Feb, 2015

Teacher Name: SahilThareja

Designation: Assistant Professor(on contract basis)

Topic: Thermogravimetric Analysis

- Introduction
- Instrumentation
- Interpretation of TG Curves
- Factors affecting TG-Curves
- Applications of Thermogravimetric Analysis

(SahilThareja)